Green Finance and Investment

Scaling Up Adaptation Finance in Developing Countries

CHALLENGES AND OPPORTUNITIES FOR INTERNATIONAL PROVIDERS

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BETTER POLICIES FOR BETTER LIVES

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Foreword

The threat of climate change is increasingly evident, and its impacts are intensifying. This is particularly the case in developing countries, which, already dealing with a multitude of challenges ranging from economic disparities to developmental goals, now face an augmented threat from unpredictable sea levels, changing weather patterns, and compromised natural resources. The repercussions of a changing climate do not just threaten their ecosystems, but also amplify the challenges of socioeconomic development and poverty eradication. Given the scope and urgency of these challenges, the international community recognised that substantial financial support would be essential to assist developing countries. Notably, international providers remain central in contributing to scaling up and mobilising finance for adaptation activities and increased climate resilience in developing countries.

At the 15th Conference of Parties (COP15) of the UNFCCC in Copenhagen in 2009, developed countries committed to a collective goal of mobilising USD 100 billion per year by 2020 for climate action in developing countries, including finance for adaptation, from a variety of sources. However, in 2021, of the USD 89.6 billion provided and mobilised, only 24.6 billion was earmarked for adaptation specifically; another USD 11.2 billion was earmarked for cross-cutting activities. The need to further prioritise adaptation was recognised in the 2021 Glasgow Climate Pact, which urged developed countries to at least double their collective provision of climate finance for adaptation to developing countries from 2019 levels by 2025.

Bilateral agencies, development finance institutions, multilateral development banks and climate funds need to work together more systematically and in collaboration with beneficiary countries to enhance the provision and mobilisation of adaptation finance. Using international public finance more strategically can help scale up overall adaptation funding, including increasing private sector participation where possible.

Grounded in the best-available adaptation finance data, this report delves into key challenges hindering the scaling up of adaptation finance and identifies actionable steps for international providers. Findings underscore the importance of not only broadening sources of finance but also of embedding adaptation activities within developmental frameworks. They further highlight the imperatives of re-evaluating spending intentions of international providers, empowering developing countries in finance and technical capacities, refining delivery systems for effective adaptation finance delivery, engaging private finance effectively in adaptation, and exploring innovative finance mechanisms. Addressing these areas comprehensively is crucial for a coordinated and holistic approach to scaling up finance for adaptation and resilience in developing countries.

In conjunction with related OECD analyses on climate finance, this report aims to provide data-driven insights to help inform discussions and deliberations under the UNFCCC and other international processes such as the G20, as well as serve as a reference for governmental and public finance entities in the formulation and implementation of their respective adaptation finance strategies, programmes, and actions.

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Abbreviations and acronyms

ACIiFF	Asia Pacific Climate Finance Fund
ADB	Asian Development Bank
AFD	Agence Française de Développement
AfDB	African Development Bank
ASAP	Adaptation SME Accelerator Project
BCM	Business Continuity Management
CBA	Community-Based Adaptation
CDM	Clean Development Mechanism
CI2	Climate Investor 2
COP	Conference of the Parties to the Kyoto Protocol
CPI	Climate Policy initiatives
CRB	Climate Resilience Bond
CRPP	Community Resilience Partnership Programme
CRS	Creditor Reporting System
CSO	Civil Society Organisations
DAC	Development Assistance Committee
DBJ	Development Bank of Japan
DRR	Disaster Risk Reduction
EBRD	European Bank for Reconstruction and Development
EU	European Union
FONERWA	Rwanda Green Fund

GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
GSS	Green, Social and Sustainability bonds
IBRD	International Bank for Reconstruction and Development
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IHLEG	Independent High-Level Expert Group on Climate Finance
IIED	International Institute for Environment and Development
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IS-FSD	OECD-UNDP Impact Standards for Financing Sustainable Development
ITMO	Internationally Transferred Mitigation Outcomes
JETP	Just Energy Transition Partnership
JICA	Japan International Cooperation Agency
KPI	Key Performance Indicator
LDC	Least Developed Country
LDCF	Least Developed Countries Fund
LFI	Local Financial Institution
LMIC	Lower-Middle Income Country
MDB	Multilateral Development Bank
MSME	Micro, Small and Medium-sized Enterprise
MW	Megawatt
NAP	National Adaptation Plan
NDB	National Development Bank
NDC	Nationally Determined Contribution

NDF	Nordic Development Fund
NGO	Non-Governmental Organisation
NPC	Nature, People and Climate Program
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OOF	Other Official Flows
PBF	Policy-Based Finance
PBL	Policy-Based Loan
PPA	Purchasing Power Agreement
PPCR	Pilot Program for Climate Resilience
PRGT	Poverty and Growth Trust
ROI	Return on Investment
RST	IMF's Resilience and Sustainability Trust
SCCF	Special Climate Change Fund
SCF	Strategic Climate Fund
SDG	Sustainable Development Goal
SDR	Special Drawing Right
SIDS	Small Island Developing States
SLB	Sustainability-linked Bond
SME	Small or Medium-sized Enterprise
SOFF	Systematic Observations Finance Facility
SOP	Share of Proceeds
STAR	System of Transparent Allocation of Resources
UK	United Kingdom
UMIC	Upper Middle-Income Country
UN	United Nations
UNDP	United Nations Development Programme

UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USAID	United States Agency for International Development
USD	US Dollars
WMO	World Meteorological Organisation

Executive summary

Enhanced adaptation action is needed given the increasingly severe impacts of climate change. Particularly, developing countries, confronting challenges from economic disparities to developmental aspirations, are more vulnerable to the amplified threats of changing climate conditions. Achieving enhanced adaptation will require an increase in the overall volume of finance from all sources flowing to adaptation. In addition to this, enhanced efforts are also required to maximise the impact of financial flows and ensure that they reach those who are most vulnerable to climate change.

International public finance providers have a key role to play in scaling up and mobilising finance for adaptation in developing countries. The 2021 Glasgow Climate Pact urged developed countries to double the collective provision of adaptation finance from 2019 levels by 2025. Besides, members of the OECD Development Assistance Committee (DAC) committed, through the 2021 DAC Climate Declaration, to strengthening support for climate change adaptation and resilience in developing countries. These undertakings, and the USD 100 billion annual climate finance goal, provide opportunities for providers to also enhance the accessibility and effectiveness of international public finance for adaptation activities.

Over 2016-21, only 25%, or USD 19 billion per year on average, of climate finance provided and mobilised by developed countries for climate action in developing countries targeted adaptation. Most adaptation finance went to middle-income countries with large populations. Low-income and least developed countries benefitted from less in absolute terms. Improved and harmonised methodologies are needed to effectively track adaptation finance and ensure it reaches the countries and populations most in need.

A range of financial, technical, and institutional constraints hinder public and private finance for adaptation in developing countries. Barriers include lack of an appropriate policy and regulatory frameworks; data and knowledge gaps that make it difficult to identify, develop and prepare potential climate adaptation projects for public and private investors; and the fragmented adaptation finance architecture and complex eligibility requirements to access finance. More favourable enabling environments would allow developing countries to progressively tap into more sources of finance for adaptation, including from the private sector.

The strategic use of international public finance can contribute to scaling up finance for adaptation in developing countries and to unlocking private investment in this context. International providers can help overcome existing barriers by supporting the capacity of developing countries to tap into the wide array of finance sources and by strengthening development practices and systems to increase the mainstreaming of adaptation activities in developing countries' plans. This report draws on trends in adaptation finance, provider and other stakeholder interviews, and detailed case studies of existing initiatives that work with and through the private sector to scale the mobilisation of private finance into adaptation activities. The analysis suggests five action areas and multiple options for bilateral providers, multilateral development banks, climate funds and other international providers to enhance the volume, private finance mobilisation effect and accessibility of international public climate finance for adaptation:

1. **Assess the consistency of forward spending plans with the call to collectively double climate finance for adaptation by 2025**. Reflecting the DAC commitment to strengthen support for climate change adaptation and resilience, such plans should include further prioritising of adaptation projects and mainstreaming of adaptation within their portfolios.
2. **Support developing countries' efforts to strengthen their capacities, policies and enabling environment for finance for adaptation.** Options include enhancing the access to finance of micro, small- and medium-sized enterprises through local financial institutions; strengthening national and sectoral capacities for climate finance; improving access to finance to local governments; leveraging providers' unique expertise in project formulation; and granting flexibility in adaptation project definitions. Progress in this action area would enhance developing countries' ability to effectively access, absorb and utilise international adaptation finance.
3. **Strengthen development practices and systems to ensure efficient delivery of adaptation finance.** Options for international providers could include strengthening their organisational structures to incentivise the incorporation of adaptation considerations in business-as-usual development activities. For instance, international providers could set flexible internal targets for adaptation finance and adopt vulnerability-centred criteria to ensure dedicated funding for areas highly vulnerable to climate change. A shift towards programmatic approaches could enable greater alignment with national priorities and long-term integrated strategies while also promoting interoperable processes and streamlined access to resources. Ideally, international providers could strive to maximise synergies across biodiversity, climate, and other environmental dimensions.
4. **Deploy public and blended finance instruments strategically to mobilise private finance for adaptation.** There is a need for international providers to better understand and link private investors' preferences, notably for secure revenue streams, with specific characteristics of adaptation projects. Options include scaling up approaches such as risk sharing, using intermediaries to overcome address financiers' unfamiliarity with adaptation, and revising mitigation-related bankable projects to heighten their contribution to adaptation.
5. **Explore and tap into alternative financing sources and mobilisation instruments for adaptation.** Options include the potential use of innovative financial mechanisms such as special drawing rights by the International Monetary Fund, share of proceeds from international carbon markets, and considering the relevance of debt-for-adaptation swaps.

The options presented across these five action areas offer possible ways forward to develop a comprehensive strategy for international providers to meet financing needs for adaptation in developing countries, not only in the context of the USD 100 billion annual climate finance goal but also for the broader objective of supporting developing countries' ability to adapt to the adverse impacts of climate change. A complementary OECD report, "Scaling up the mobilisation of private finance for climate action in developing countries: Challenges and opportunities for international providers", addresses in greater detail the issue of mobilisation of private finance, with a focus on climate change mitigation.

1 Framing of adaptation finance

As the impacts of climate change grow more severe and frequent, greater adaptation action is increasingly urgent. International providers have a pivotal role in providing and mobilising finance flows to support adaptation in developing countries, which often lack resources and capacity to undertake adaptation measures. This chapter provides an overview of key international policy context and developments, methodological challenges in accounting for adaptation finance, various sources, mechanisms, and instruments of adaptation finance, as well as both adaptation-related financing needs and tracked finance flows. Such an overview intends to motivate the need to better identify challenges and opportunities for scaling up adaptation finance and improving its effectiveness.

The physical effects of climate change are already visible, resulting in significant human and economic losses and costs across the world. The Sixth Assessment Report of the Intergovernmental Panel on Climate Change makes clear that the impacts of climate change will intensify over the coming decades and that the speed and scale of progress in reducing emissions will determine their severity (Core Writing Team, Lee and Romero, 2023[1]). In the face of this threat, it is essential to accelerate efforts to adapt to acclimate change.

Scaling up adaptation action requires scaling up finance, especially for developing countries that are acutely vulnerable to climate change but often lack both financial resources and capacity to undertake adaptation measures. International providers have a pivotal role in providing and mobilising finance flows to support adaptation in developing countries. Their contribution was recognised in the 2021 Glasgow Climate Pact, wherein the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) "[u]rges developed country Parties to at least double their collective provision of climate finance for adaptation to developing country Parties from 2019 levels by 2025, in the context of achieving a balance between mitigation and adaptation in the provision of scaled-up financial resources". (UNFCCC, 2021[2])

OECD DAC members have also acknowledged the need to align development co-operation and finance with international climate goals. The 2021 OECD DAC Climate Declaration includes commitments from DAC members to strengthen their support for climate change adaptation and resilience in developing countries consistent with the aims of Article 2.1c of the Paris Agreement[1] (OECD, 2021[3]).

In this context, this report identifies challenges to and opportunities for scaling up finance for adaptation in developing countries, with a specific focus on the role of international public finance. The analysis is anchored in the context of the USD 100 billion climate finance goal. It also considers the broader and longer-term objective of supporting developing countries' ability to adapt to the adverse impacts of climate change.[2] The assessment of the current state- of play and the action areas and options are informed by quantitative and qualitative analyses of existing adaptation projects, case studies, and interviews with a broad range of stakeholders. The parallel and complementary OECD report "Scaling up the mobilisation of private finance for climate action in developing countries: Challenges and opportunities for international providers" addresses in greater detail the issue of mobilisation of private finance, with a focus on climate change mitigation (OECD, 2023[4]).

This overview chapter presents recent policy developments, available estimates of investment needs and finance flows for adaptation, and a review of the institutional architecture. The remainder of the report is structured as follows:

- Chapter 2 examines historical trends in finance provided and mobilised for adaptation in developing countries.
- Chapter 3 identifies existing challenges and barriers to scaling up of adaptation finance to date.
- Chapter 4 outlines concrete opportunities for international providers across five key action areas to scale up and help unlock finance for adaptation from the public and private sectors.
- Chapter 5 highlights ways forward for international providers to overcome barriers to scaling up adaptation finance across the five action areas, with a focus on the timescales of the various options and to what extent they can impact adaptation finance levels.
- Annex A presents detailed case studies of existing initiatives that work with and through the private sector to scale the mobilisation of private finance into adaptation activities.
- Annex B lists developing countries by various categories and groupings.

1.1. Understanding adaptation to climate change

1.1.1. Links between adaptation, resilience and development

Adaptation to climate change is the process of process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities[3]. The outputs of this process are context specific and may involve, for example, farmers diversifying their crop varieties to better handle the changes in temperature and rainfall patterns induced by climate change (Mehryar, 2022[5]). Adaptation may be one motivation among several for undertaking an activity. For instance, the construction of an all-weather road may facilitate local economic development. Adapting the road to expected impacts of climate change to reduce climate-related disruption is essential to the original purpose of the road.

Resilience refers to the capacity of human systems or societies to prepare for, respond to and recover from the impacts of external shocks while minimising damages. Resilient systems, having the capacity to withstand significant disturbances, are usually more adept at adapting to climate change. At the same time, a system that successfully adapts to climate change impacts may become more resilient against future changes. This synergy between adaptation and resilience is pivotal to sustainable development.

Economic development also can be conducive to resilience to climate change, for instance by improving income levels, strengthening government institutions and civil society, and improving health care (Figure 1.1). At a basic level, adaptive capacity is defined in terms of the ability to mobilise financial resources and capacities towards adaptation action, ability that is directly determined by the level of economic development. Higher levels of development are also directly associated with better resilience as better developed systems and wealthier societies have, in principle, more resources with which to cope with shocks. However, some development paths can sometimes inadvertently increase vulnerability. An example is urban growth in areas highly susceptible to climate change effects, such as coastal zones exposed to sea level rise. Such a situation is known as maladaptation. Hence, it is vital for countries to thoroughly assess climate-related risks and vulnerabilities and embed potential adaptation measures within their developmental policies, plans and projects (OECD, 2009[6]).

Figure 1.1. How adaptation, resilience and development are linked

Source: Authors.

Adaptation and resilience are related to the concepts of losses and damages, on one hand, and disaster risk reduction (DRR), on the other, and there are also close, substantive links between these two concepts (Box 1.1). Progress in adapting to climate change should help limit losses and damages from climate change. This report focusses on adaptation finance while recognising the importance of achieving synergies with these related policy agendas.

Box 1.1. Losses and damages from climate change and DRR

Losses and damages

Climate-related losses and damages, the harms caused by climate change, can be averted, minimised and addressed through adaptation and mitigation measures. However, some losses and damages are now inevitable (OECD, 2021[7]). COP27 brought an agreement to establish "new funding arrangements" for assisting developing countries in responding to "loss and damage", including a fund (UNFCCC, 2022[8]).

Finance relevant to reducing and managing the risk of losses and damages is currently channelled through adaptation and DRR activities. An exploratory study found that DAC members collectively committed between USD 876 million and USD 6.7 billion on average each year over 2018-19 in activities relevant to addressing climate-related losses and damages (OECD, 2021[7]). OECD work to track progress towards the USD 100 billion goal, however, does not identify a distinct category for finance that relates to losses and damages (OECD, 2022[9]). The OECD work has centred on building financial resilience to climate impacts, with a focus on supporting governments' financial management of climate-related risks and economy-wide losses and damages (OECD, 2022[10]).

Disaster risk reduction

As the UN defines it, "disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development" (United Nations Office for Disaster Risk Reduction, n.d.[11]). While DRR covers reducing risks of natural hazards such as earthquakes, tsunamis and volcanic eruptions, adaptation-related interventions include DRR activities that are also relevant to climate-related risks.

DRR and climate change adaptation are strongly related. For example, stronger post-disaster responses are needed in absence of adaptation (OECD, 2020[12]). The aim of the Sendai Framework for Disaster Risk Reduction, adopted in 2015, is to drive international efforts on DRR (United Nations, 2015[13]). The Sendai Framework and the Paris Agreement together make a strong case for increased coherence and co-ordination in how climate change adaptation and DRR are managed.

Source: OECD (2021[7]), *Managing Climate Risks, Facing up to Losses and Damages*, https://doi.org/10.1787/55ea1cc9-en; United Nations Climate Change (2022[8]), "COP27 Reaches Breakthrough Agreement on New 'Loss and Damage' Fund for Vulnerable Countries", https://unfccc.int/news/cop27-reaches-breakthrough-agreement-on-new-loss-and-damage-fund-for-vulnerable-countries; OECD (2022[9]), *Climate Finance Provided and Mobilised by Developed Countries in 2016 – 2020: Insights from Disaggregated Analysis*, https://doi.org/10.1787/5f1f4182-en; United Nations Office for Disaster Risk Reduction (n.d.[11]), *Sendai Framework Terminology on Disaster Risk Reduction*, https://www.undrr.org/terminology/disaster-risk-reduction; OECD (2020[12]), *Common Ground Between the Paris Agreement and the Sendai Framework*, https://doi.org/10.1787/3edc8d09-en; United Nations (2015[13]), *Sendai Framework for Disaster Risk Reduction 2015 – 2030*, https://www.undrr.org/publication/sendai-framework-disaster-risk-reduction-2015-2030.

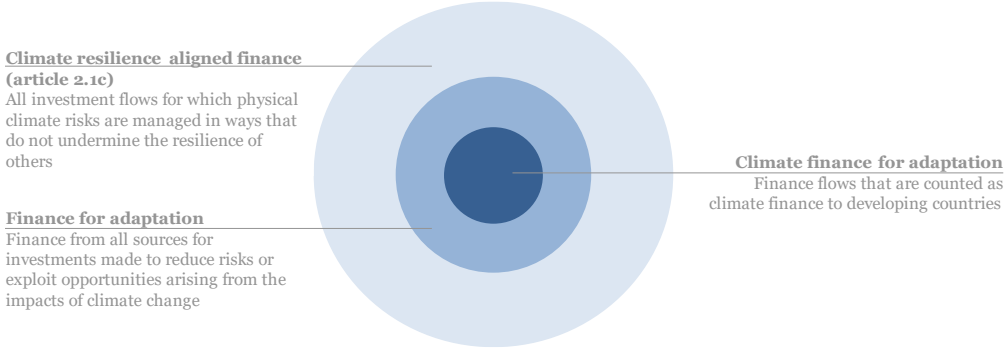
1.1.2. Range of adaptation finance sources

Finance for adaptation activities in developing countries can come from a variety of domestic, international, public and private sources (section 1.2). As illustrated in Figure 1.2, finance for adaptation and resilience encompasses a range of purposes, definitions and reporting categories. The broadest concept of climate resilience-aligned finance (outer circle in the figure) refers to all investment flows from all sources that are consistent with climate-resilient development (article 2.1c of the Paris Agreement). This concept includes finance for adaptation (intermediate circle), which is finance from all sources for investments that aim to contribute to adaptation. Climate finance for adaptation (inner circle) is the subset of finance for adaptation

that is provided and mobilised by international public sources. Depending on the source of the finance, this subset can be viewed as either finance for adaptation or climate finance for adaptation. The analysis in this report also covers climate-related development finance, which is bilateral official development assistance (ODA) for activities that have adaptation as a primary or significant objective. Development co-operation providers tend to report a fraction of these flows as climate finance for adaptation, and accounting for this finance remains a challenge (Box 1.2).

In broad terms, the concentric circles in Figure 1.2 represent orders of magnitude in terms of annual finance flows: Flows of climate finance provided and mobilised by developed countries for adaptation are in the tens of billions of US dollars per year, the estimated finance for adaptation needed in developing countries is in the hundreds of billions and the goal of alignment applies to trillions of dollars of all finance flows. This report focusses on the role of international providers in scaling up finance for adaptation in developing countries through increases in climate finance for adaptation and how the use of such climate finance can mobilise other sources of finance for adaptation.

Figure 1.2. Finance flows for adaptation in developing countries



Source: Based on Mullan and Ranger (2022[14])., "Climate-resilient finance and investment", https://doi.org/10.1787/223ad3b9-en.

1.1.3. Defining, identifying and tracking finance for adaptation

The same finance flows can yield multiple benefits. Adaptation objectives often align with broader growth and development objectives. For example, adapting agricultural practices to safeguard yields not only protects farmers' income and livelihoods but also bolsters food security at local, national and international levels. The inherent links between adaptation and broader developmental and policy objectives are advantageous because they amplify the benefits of a specific intervention. Even when adaptation is the main reason for an activity, the associated co-benefits can sometimes exceed the primary climate risk reduction benefits (Heubaum et al., 2022[15]). Such co-benefits reinforce the rationale for the required investments and for securing the necessary finance.

From an accounting viewpoint, it can be difficult to distinguish finance for adaptation from other climate finance (Hammill and McGray, 2018[16]). There are two primary challenges. First, due to the context-specific nature of adaptation, just examining the activity is not enough to determine if an investment aids adaptation. An action that is apt in one setting, such as enhancing crop irrigation, might be unsuitable in another. This context dependency makes it difficult to categorise an expense as adaptation finance since the same action might either aid or hinder adaptation depending on the situation. A second key challenge is that adaptation measures often seamlessly blend into activities designed for various other reasons. For example, improving access to education can also yield adaptation benefits. As such, it is not always possible to readily separate out the elements or share of an activity contributing to adaptation.

Considering these challenges, several frameworks have been developed to identify finance flows for adaptation, among them the OECD Rio markers, the adaptation definitions in the European Union (EU) Taxonomy and the joint multilateral development bank (MDB) methodology (Box 1.2). While these methodologies differ, a common feature is that they identify finance for adaptation based on processes rather than on the intrinsic characteristics of the activity or the sector that the activity belongs to. For example, classification under the OECD Rio markers is determined by the intention behind the activity and the ability to demonstrate that the proposed activity will contribute to climate adaptation. Similarly, the adaptation component of the EU Taxonomy requires that a process of climate risk assessment and management be undertaken to justify that an activity contributes to adaptation.

Box 1.2. Accounting for climate finance for adaptation: Insights from current approaches

Identifying and accounting for adaptation finance are inherently difficult due to several technical and methodological challenges such as how to determine which activities count as adaptation, attribute the proportion of a project's budget that serves adaptation and track private finance. However, providing quantified information on finance for adaptation directed towards developing countries is crucial to ensure transparency and identify gaps and unmet needs.

In the context of the OECD DAC, the Rio markers were developed to identify development finance that contributes to environmental objectives and include a marker for climate change adaptation. An activity can be classified as adaptation related if "it intends to reduce the vulnerability of human or natural systems to the current and expected impacts of climate change" (OECD, 2017[17]). An activity is further eligible for this marker if it has:

- climate change adaptation as a principal objective, and when the adaptation objective is explicitly stated as fundamental in the design or motivation of the activity.
- climate change adaptation as a significant objective but when the activity has other prime objectives, the activity has been formulated or adjusted to help meet the relevant climate concerns.

Projects can also be marked as contributing to several environmental objectives. For example, mangrove restoration could be marked as contributing to biodiversity, climate change adaptation and climate change mitigation. The data collected through the OECD Creditor Reporting System (CRS) database are also used to identify adaptation-related development finance. The use of a Rio marker, regardless of whether adaptation is a principal or significant objective, does not affect the total amount of finance being reported to the DAC CRS database. Therefore, most countries, when reporting adaptation-specific data to the UNFCCC through their Biennial Reports, use the Rio markers to identify their climate finance for adaptation and apply coefficients to estimate the portion of a contribution targeting adaptation or mitigation specifically (OECD, 2023[18]).

The methodology developed by MDBs to track climate finance for adaptation also aims to capture the incremental cost of adaptation activities and, in accounting for responses to climate vulnerabilities, is project and location specific (EIB, 2022[19]). The components range from the full investment amount to just a small fraction of a development project that relates specifically to climate change mitigation or adaptation objectives.

Harmonising methodologies to better understand finance for adaptation

The methodologies used to identify adaptation-related projects and to account for adaptation finance (e.g., using coefficients) can have a significant impact on the quantification of the levels of adaptation finance being provided and mobilised to developing countries. To ensure that reported adaptation finance accurately reflects the extent of international investment in adaptation for developing countries, it is crucial to continue working on improved and harmonised methodologies for identifying and accounting for adaptation finance. These will eventually contribute to ensuring that resources are effectively allocated and invested in adaptation projects. The OECD is already working with its members to improve the adaptation Rio marker methodology and is updating its guidance documents that provide examples and rationale for scoring the activities in various sectors of intervention.

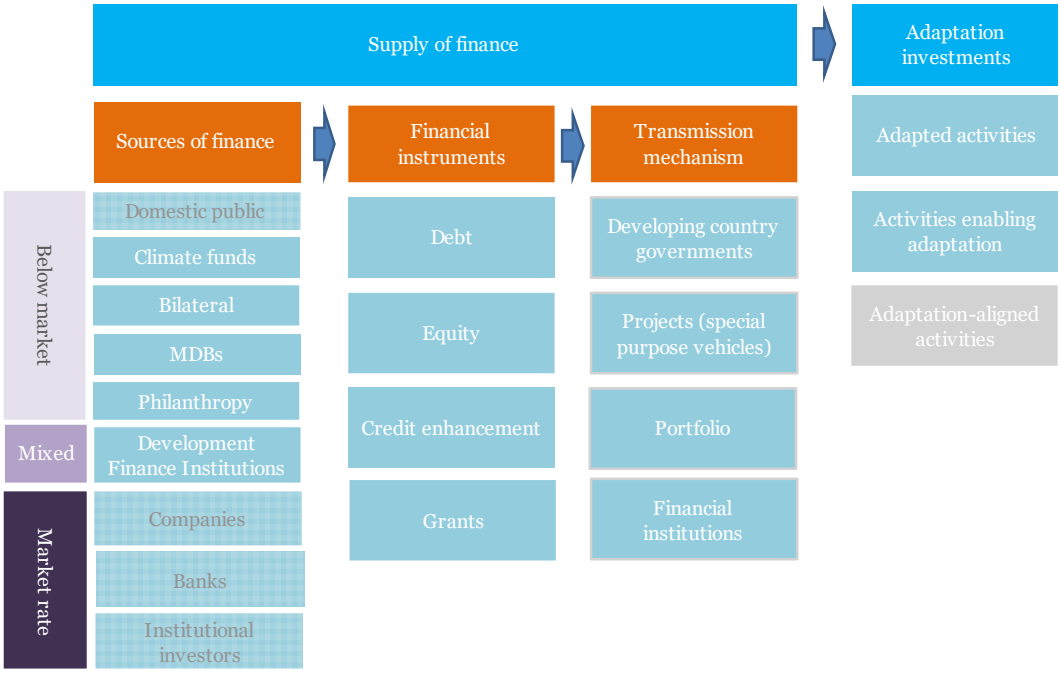
Source: OECD (2017[17]), *OECD DAC Rio Markers for Climate – Handbook*, https://www.oecd.org/dac/environment-development/Revised%20climate%20marker%20handbook_FINAL.pdf; OECD (2023[18]), *Results of the survey on the coefficients applied to 2019-20 Rio Market data when reporting to the UN Environmental Conventions*, DCD/DAC/STAT(2022)24/REV1; EIB (2022[19]), *Joint methodology for tracking climate change adaptation finance*, https://www.eib.org/attachments/lucalli/20220242_mdbs_joint_methodology_climate_finance_en.pdf.

1.2. Understanding the diverse array of sources of finance for adaptation

Finance will flow when the requirements of finance providers match the characteristics of the investments and when finance is channelled through suitable financial instruments and transmission mechanisms. This dynamic applies as well to finance for climate adaptation. Figure 1.3 provides a simplified model of the main actors, instruments and transmission mechanisms that link up the sources of adaptation finance with the demand for such finance in developing countries. This architecture determines both the quantity of finance flows and the extent to which these flows are consistent with the priorities of developing countries.

This section outlines the mandates of key finance sources and the characteristics of investments in adaptation. It also indicates which of these are covered in this report. Chapter 2 analyses the extent to which these sources and investment characteristics now match.

Figure 1.3. General architecture of finance flows for adaptation in developing countries



Note: This report covers international public finance sources (solid colour) and other finance sources that have been mobilised by international public finance (cross-hatched). This report focusses on investments in adapted activities and activities enabling adaptation, while recognising the importance of aligning all activities.
Source: Adapted from Tall et al. (2021[20]), *Enabling Private Investment in Climate Adaptation and Resilience: Current Status, Barriers to Investment and Blueprint for Action*, http://hdl.handle.net/10986/35203.

Policy-based finance sources are fundamentally different from finance sources that mainly chase commercial goals. Policy-based finance sources include public funds, climate funds, bilateral development banks and MDBs, and philanthropies. Within this bracket, there is an important further distinction between institutions that operate on a grant-based model, such as climate funds, and institutions that operate on a financial business model, such as development banks and development finance institutions (DFIs). The former depend entirely on the sustained provision of funds that are subsequently distributed; the latter typically cover their operational costs via their financing actions, ensuring their longevity as financial institutions. For instance, development banks offer loans to developing nations at more attractive terms than are available in private markets while DFIs, which are mandated to finance the private sector for

climate-related and other development aims, usually work on principles that prevent market distortion and the subsidising of private enterprises. Market-based finance sources, by contrast, are profit driven.

1.2.1. Sources of adaptation finance for projects with no or below market rate returns

The financial return expected from investments – below market, mixed (intermediary) and at market rate – also depends on the finance source's objectives. As shown in Figure 1.3, finance sources that provide capital without expecting a market rate financial return and operate primarily with a climate or development directive (e.g., climate funds, MDBs, philanthropy, etc.) get below market or mixed returns on their investments. As these are the only funders able to support activities without a financial return through the provision of grants, they are crucial for activities – e.g., capacity building – that generate substantial socio-economic advantages but offer limited financial return. These actors are also able to provide concessional lending for projects that have high risks, long duration and/or uncertain returns.

Finance sources that generate below market rate returns include:

- **Domestic public flows**. Governments in developing countries invest directly in adaptation using their own resources. According to the Climate Policy Initiative (CPI), domestic government finance globally for adaptation amounted to an annual average of USD 6.5 billion in 2019-20 (CPI, 2022[21]). As few governments currently track adaptation-related expenditure, the actual volume may well be greater. Given that many key areas for adaptation are linked to public sector responsibilities (e.g., provision of flood defences), domestic public climate finance is likely to represent one of the main financing sources for adaptation. The core analysis of this report does not cover this finance source.
- **Bilateral providers.** The 31 members of the OECD DAC and the group of 39 developed country parties (including the EU) that have committed to the USD 100 billion goal are important players in the context of development finance broadly and in the financing of adaptation more specifically. The OECD comprehensively tracks adaptation finance from these sources; in 2021, the OECD 100 billion report identified USD 9.6 billion of bilateral climate finance for adaptation (section 2.1).
- **MDBs** are increasingly aligning their lending operations with the goals of the Paris Agreement, with a focus on sovereign lending. According to OECD figures, climate finance for adaptation from MDBs attributable to developed countries amounted to USD 11.8 billion in 2021 (section 2.1).
- **Multilateral climate funds** include the Global Environment Facility, the Green Climate Fund and the Adaptation Fund, among others. In general terms, their mandates are to support the transition to a low GHG and climate-resilient future, and their financial resources are predominantly provided by developed countries. According to OECD figures, flows from multilateral climate funds accounted for USD 1.5 billion of recorded climate finance attributable to developed countries for adaptation in 2021 (section 2.1).
- **Philanthropy** is an increasingly important source of funding for low- and middle-income countries. Total recorded philanthropic flows for all development purposes averaged USD 10.6 billion between 2016-19 (OECD, 2021[22]). While modest compared with ODA, private philanthropy flows are an important source of development finance and for supporting blended finance. Philanthropies have been agile in changing conditions, have relatively low levels of risk aversion, and are often open to innovation in terms of both financial instruments and investments (OECD, 2021[22]; OECD, 2018[23]).

Though they are sources of adaptation finance in developing countries, philanthropy and domestic sources are not further covered or addressed in this report.

1.2.2. Sources of adaptation finance for projects with some expected return on investment

Some development finance actors can lend at close to market rates for projects that fit their dual development and financial profitability mandates. The underlying project needs to have a revenue stream, but these lenders can accept higher risk and/or provide capital on more favourable terms than would be available from the market. Such mixed sources include:

- **Bilateral and multilateral DFIs** ultimately source their capital from a single or multiple government budgets and capital markets. They can also benefit from government guarantees. These characteristics contribute to their creditworthiness, which in turn enables them to raise large amounts of money on capital markets and provide financing at competitive terms. Multilateral DFIs are often the private sector arms of international finance institutions. The scale of lending is constrained by the institution's capital and the level of risk exposure. The CPI identified an annual average USD 16.5 billion of adaptation finance from multilateral DFIs and a further USD 5.4 billion from bilateral DFIs in 2019-20 (CPI, 2022[21]).

1.2.3. Sources of adaptation finance for projects with an expected market rate of return

The market rate category of finance will only invest if the balance of risk and return is consistent with market expectations. Given that perceived risks are higher in developing countries, investors in this category would expect a higher financial return. Market rate investors will invest in projects with a solid and certain revenue stream, which is rarely the case for interventions that are solely aimed at adaptation. However, such investors may invest in activities with adaptation as a co-benefit. Strategic use of development and climate finance can help such unlock private investment by reducing risks and/or improving returns.

It is important to note that, unlike international public finance flows and the finance they may mobilise from other sources, not all investments relevant for adaptation will generate identifiable flows. Financial flows from market rate investors frequently go unrecognised as adaptation finance. For instance, private companies might invest in adaptation using retained earnings, proceeds from general purpose bonds or earnings from equity issuances rather through project finance. Similarly, households and micro enterprises are likely to use their savings to finance adaptation to climate change. It is currently not possible to track these investments, despite their continued importance to adaptation efforts. Box 1.2 discusses additional methodological challenges to tracking climate finance for adaptation.

Examples of sources of market rate adaptation finance include:

- **Institutional investors** such as pension funds, insurance companies, sovereign wealth funds and investment funds are a major potential source of capital for long-term investment. In principle, the longer-term returns from investments in adaptation match the liabilities of some types of institutional investors such as pension funds. However, regulations and depositors' expectations combine to limit the risk appetite of this type of investor. Given likely transaction costs, institutional investors are also looking for large investment opportunities of at least USD 10 million and frequently more than USD 100 million. Despite the scale of capital held by institutional investors, the CPI was able to identify only USD 0.5 billion of finance for adaptation from institutional investors (annual average in 2019-20) (CPI, 2022[21]).
- **Commercial banks** (both domestic and international) likely provide credit for adaptation investments by companies and households, though their contribution to finance for adaptation is currently unknown. Commercial banks, however, play a key role in originating the securities (debt, equity and derivative products) that would be needed to enable access to capital markets.
- **Private sector enterprises** – both domestic and international and ranging from small and medium enterprises to large corporates – invest in adaptation. They can invest with retained earnings and their existing equity without necessarily tapping into external finance from public or private finance

sources. The private sector may invest, for example, in drought-resistant crops or, in the case of large firms, in major infrastructure. There is very limited tracking of corporate finance for adaptation; the CPI identified USD 0.5 billion of finance flows from private sector enterprises in 2019-20 (CPI, 2022[21]).

1.3. Adaptation needs and finance flows in developing countries

1.3.1. Esimated investment needs for adaptation in developing countries

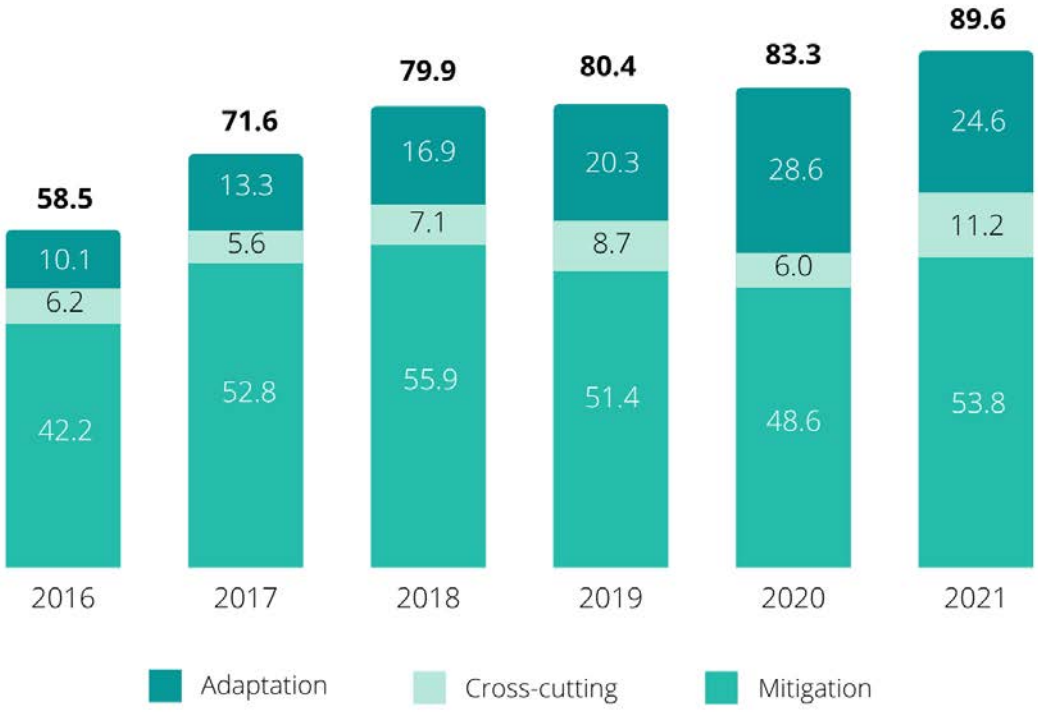
Despite methodological challenges, recent studies provide an indication of the possible scale, range and distribution of investments that will be needed for developing countries to adapt to climate change. The scope of these studies differs but they are broadly consistent with finance for adaptation, as defined in Figure 1.2. The UN Environment Programme, in its 2022 Adaptation Gap report, identified annual investment needs within developing countries of between USD 160 and USD 340 billion by 2030, rising to USD 315 billion to USD 565 billion by 2050. These estimates were generated using a top-down modelling approach that built on a 2010 World Bank study of the economics of adaptation to climate change (World Bank, 2010[24]). That World Bank analysis, which estimated adaptation costs by sector to identify the scale of investments needed to offset the impacts of climate change on economic welfare, found that the greatest needs relate to infrastructure, coastal zones, and water management and flood protection.

The Adaptation Committee of the UNFCCC used a different approach that aggregated the estimates of needs contained in developing countries' nationally determined contributions (NDCs) (UNFCCC, 2022[25]). However, countries use different a diversity of baselines, methodologies and objectives to generate the estimates in their NDCs, and thus the estimates are not directly comparable with each other or the 2010 World Bank study. Nonetheless, the UNFCCC found that adaptation needs for the 76 developing countries whose NDCs included estimates are of the same order of magnitude as the top-down estimates – i.e., USD 71 billion is needed annually until 2030. Sectoral analysis of these reported needs in the NDCs found financing needs are greatest in the water, infrastructure and agriculture sectors.

1.3.2. Measuring flows of climate finance for adaptation

The OECD regularly reports on progress towards the USD 100 billion goal.[4] Its analysis includes four components of climate finance provided and mobilised by developed countries[5] for developing countries: bilateral public climate finance, the share of multilateral public climate finance attributable to developed countries, climate-related officially supported export credits, and private finance mobilised by bilateral and multilateral public climate finance. According to results of this work, developed countries provided and mobilised USD 463.3 billion of climate finance, or an average of USD 77.2 billion a year, between 2016 and 2021. Of this total, adaptation finance (excluding cross-cutting finance) averaged USD 19 billion per year, or just 25% (Figure 1.4). Moreover, another USD 7.5 billion a year on average was destined to cross-cutting activities. While tracked finance for adaptation has increased consistently between 2016-20, it slightly dropped in 2021. In contrast, cross-cutting finance (which also targets adaptation objectives) increased in 2021 compared to 2020. Overall, most climate-related finance is still directed to mitigation. Among the factors that account for the high share of finance going to mitigation projects are their higher financial sustainability and returns, a historical emphasis on mitigation in climate policy, and the relative ease of measuring and quantifying mitigation outcomes.

Figure 1.4. Climate finance provided and mobilised by developed countries, 2016-21 (USD billions)



Source: Based on Biennial Reports to the UNFCCC, OECD DAC and Export Credit Group statistics, complementary reporting to the OECD

While the OECD analysis focusses on finance flows that count towards the USD 100 billion goal, the CPI analysis considers a broader spectrum of finance for adaptation from all sources. It estimated that finance for adaptation in developing countries reached USD 49 billion in 2020 and that a further USD 15 billion in finance went to projects that have both adaptation and mitigation benefits (CPI, 2022[21]). Only USD 1 billion of this recorded finance was from private sources. It should be noted that there are currently only isolated analyses of domestic and South-South public finance flows and very sparse coverage of private finance. The CPI figures, by consequence, likely understate trends in these flows (CPI, 2022[21]).

The available data on finance flows for adaptation also are not directly comparable with estimates of financing needs for adaptation. Only a subset of finance for adaptation is currently tracked, and only international public finance flows are systematically recorded. As noted, there are also considerable uncertainties and methodological challenges around estimates of adaptation costs. The level of underlying activity, recording accuracy and estimation methodologies also affect the scale of recorded adaptation finance flows. As there is little incentive for companies to collate or provide relevant data, there is a significant data gap around private sector activity. Therefore, it is difficult to gauge whether current financial flows are sufficient to meet adaptation needs in developing countries due to data coverage gaps and the considerable variance in scope and methodology. Nonetheless, available evidence suggests strongly that adaptation finance needs to be scaled up.

1.4. Enhancing the accessibility, efficiency, and effectiveness of international public finance for adaptation

Efforts to increase the quantity of finance for adaptation should not neglect the importance of ensuring the quality of the financed activities. Otherwise, funds might be used inefficiently and fail to benefit those

communities who most in need. There is even a risk of maladaptation wherein interventions that are intended to support adaptation ultimately undermine resilience over the longer term. From the perspective of international providers, financing adaptation fits squarely within the broader purpose of fostering developing countries' development or at least to maintaining their current level of development.

Lessons learned from the development co-operation effectiveness agenda have generated a broadly endorsed set of principles that are relevant to climate and adaptation finance. The principles of effective development in the Busan Partnership agreements offer practical guidance for increasing the effectiveness of development finance supporting adaptation in developing countries (MOIC, 2022[26]). The agreements, reflecting decades of experience of donors and developing countries working together, acknowledge that development finance alone does not ensure the success or effectiveness of an individual activity. The Busan Partnership effectiveness principles, endorsed by 161 countries and 56 organisations, spotlight:

- **Country ownership**. International providers should work to support developing countries' priorities, working through country systems where possible.
- **Focus on results**. Interventions should achieve measurable, sustainable results that are aligned with national priorities.
- **Inclusive development partnerships**, Strong collaboration and co-ordination between partners are needed to avoid fragmentation and duplication of efforts.
- **Transparency and accountability**. Partners share the responsibility for ensuring that relevant information is available to ensure mutual accountability.

Likewise, the OECD Blended Finance Principles incorporate good practices to maximise the effectiveness of international public finance in attracting private finance, including private finance for adaptation activities. The principles emphasise that development finance should be used strategically to achieve financial sustainability and scalability over time so that it does not crowd out private finance. They also underscore the need to ensure that blended finance interventions have a clear development rationale and are tailored to local needs, priorities and context.

The Busan Principles resonate with Article 7.5 of the Paris Agreement, which states that "that adaptation action should follow a country-driven, gender-responsive, participatory and fully transparent approach... with a view to integrating adaptation into relevant socio-economic and environmental policies and actions, where appropriate." (Paris Agreement, 2015[27]).

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Notes

[1] This article calls for making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

[2] At the 15th Conference of Parties (COP15) under the United Nations Framework Convention on Climate Change in Copenhagen in 2009, developed countries committed to a collective goal of mobilising USD 100 billion per year by 2020 for climate action in developing countries, in the context of meaningful mitigation action and transparency on implementation. At COP21 in Paris in 2015, the timeline to reach this goal was extended to 2025, and since then, at the request of contributor countries, the OECD has produced analyses of progress towards this goal.

[3] In its 2018 glossary of terms, the Intergovernmental Panel on Climate Change defines adaptation as follows (italics in the original): "In *human systems*, the process of adjustment to actual or expected *climate* and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects". See https://www.ipcc.ch/sr15/chapter/glossary/.

[4] At COP15 of the UNFCCC in Copenhagen in 2009, developed countries committed to a collective goal of mobilising USD 100 billion per year by 2020 for climate action in developing countries. At COP21 in 2015 in Paris, the target for th eannual USD 100 billion goal was extended to 2025. Since 2015, at the request of donor countries, the OECD has produced analyses of progress towards this goal.

[5] In this context, developed countries are Annex II Parties to the UNFCCC, EU members states, Liechtenstein and Monaco.

2 Trends of climate finance for adaptation in developing countries

This chapter reviews overall trends in adaptation finance flows between 2016 and 2021, including differences across country income groups in volume, delivery channels and instruments, setting the stage for discussions in Chapters 3 and 4 of challenges and opportunities to scale up adaptation finance. International public climate finance for adaptation from developed countries almost tripled over 2016-21, mainly driven by multilateral institutions' increased focus on adaptation. Low-income and least developed countries, however, received the least public adaptation finance overall in absolute terms. Despite the strong context-specific nature of adaptation, little of the finance provided is delivered through local organisations. The analysis in this chapter suggests there is room to scale up adaptation finance, improve its accessibility and effectiveness, including towards mobilising private finance.

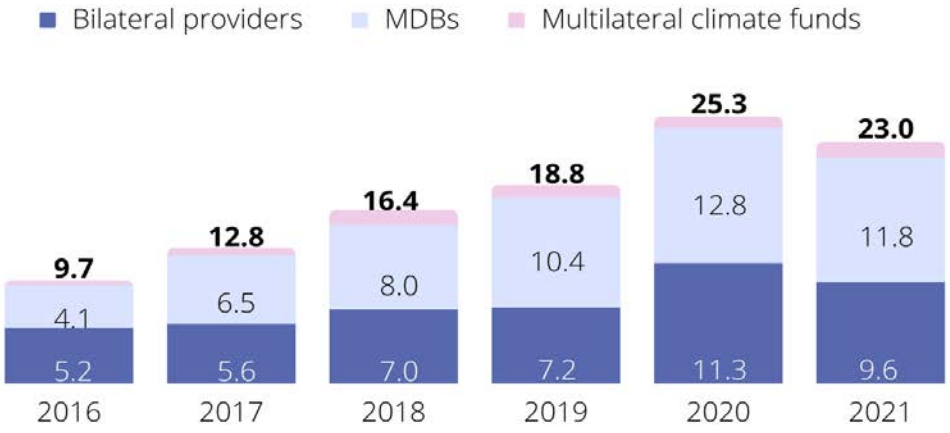
OECD data on climate finance provided and mobilised by developed countries in the context of the USD 100 billion goal allows for a disaggregated analysis of trends. The analysis in this chapter is based on the data and accounting methodology that underpin the OECD series that assesses progress towards that goal, Climate Finance and the USD 100 Billion Goal.[1] Where relevant, the analysis makes use of the OECD Development Assistance Committee (DAC) climate-related development finance database, i.e. development finance Rio-marked for adaptation (see Box 1.2 for further detail) (OECD, 2022[1]; OECD, 2023[2]).[2]

2.1. Overview of international public climate finance for adaptation provided over 2016-2021

Between 2016 and 2021, bilateral and multilateral providers, including both multilateral development banks (MDBs) and climate funds, together provided USD 106 billion of climate finance for adaptation in developing countries, i.e., an annual average of USD 17.7 billion (Figure 2.1). International public climate finance for adaptation from developed countries almost tripled between 2016 and 2020, from USD 9.7 billion to 25.4 billion; it slightly dropped in 2021 to USD 23 billion. The growth in adaptation finance over the years was mainly driven by an increase in multilateral public climate finance for adaptation. Among bilateral providers, Group of Seven countries and European Union (EU) institutions [3] collectively accounted for 89% of total bilateral climate finance for adaptation in 2016-21. MDBs provided 89% of multilateral climate finance for adaptation, with multilateral climate funds providing the remaining 11%.

In addition to climate finance flows for adaptation, a total of USD 40.2 billion (an annual average of USD 6.7 billion) was provided for cross-cutting activities between 2016 and 2021. Climate finance reported as cross-cutting relates to projects with both mitigation and adaptation benefits or to climate finance that had not been allocated to either mitigation and/or adaptation at the time it was reported. This includes, for example, capacity development grants that the recipient had not yet decided how to use. The share of cross-cutting finance from MDBs progressively decreased over the five years but was relatively high compared with the proportion of cross-cutting finance from bilateral providers and multilateral climate funds. This difference is likely due to their different methodological and reporting practices, which can have an impact on the volumes and thematic split of reported climate finance. Greater mainstreaming of adaptation considerations into mitigation activities contributes to high volumes of cross-cutting in climate finance. Though cross-cutting climate finance is relevant for adaptation activities, the rest of the disaggregated analysis presented in the remainder of this section focuses on what is reported as purely climate finance for adaptation.

Figure 2.1. Shares of total public climate finance for adaptation provided for developing countries by provider, 2016-21

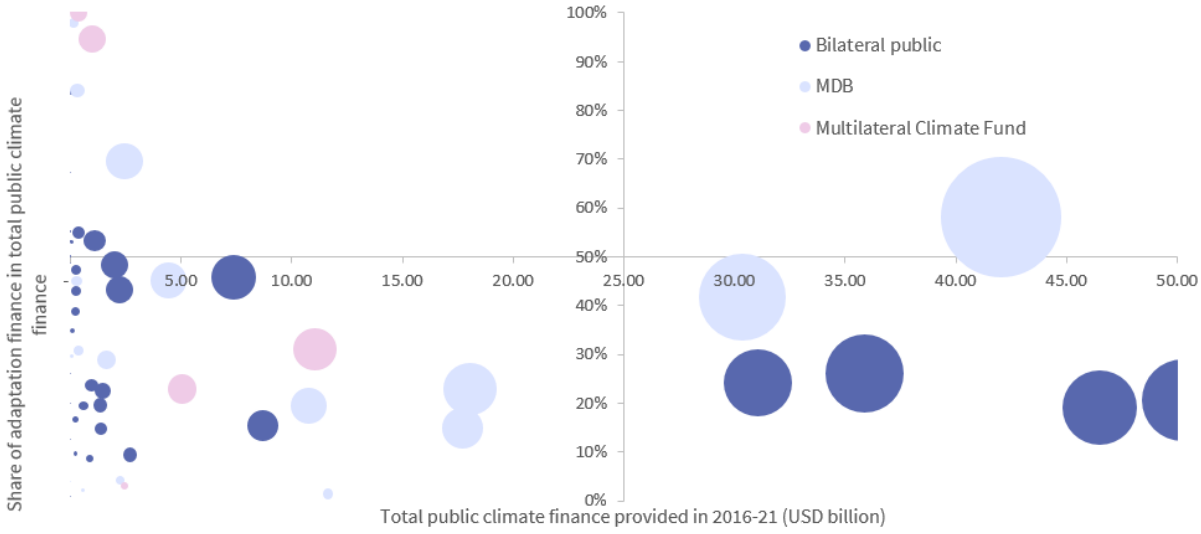


Source: Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD.

2.1.1. Most climate finance provided by most providers focused on mitigation rather than adaptation

Only 13 of 62 international providers of climate finance allocated 50% or more of their total public climate finance portfolio to adaptation between 2016 and 2021 (see Figure 2.2). Another 16 providers allocated between 30 and 49% of their climate finance to adaptation, and 20 providers allocated between 10 and 29%. The remaining 13 allocated less than 10% of their total public climate finance to adaptation. Moreover, 17 providers decreased the share of adaptation in their climate finance portfolios between 2016 and 2021. However, all in all, since most of the biggest providers increased their share, the total adaptation share across providers increased from 21% to 31%.

Figure 2.2. Share of adaptation finance over total public climate finance provided by individual bilateral and multilateral providers, 2016-21



Note: Each bubble represents a bilateral or multilateral provider of adaptation finance. The size of the bubble indicates the relative volume of total adaptation finance provided by the provider between 2016 and 2021.
Source: Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD.

The split in the climate theme of providers' portfolios largely reflects the finding that climate finance for mitigation historically accounted for most of public climate finance provided (OECD, 2022[1]). Even though the proportion of climate finance for adaptation grew over the five years, mitigation-related finance remained predominant, averaging 60% over the period.

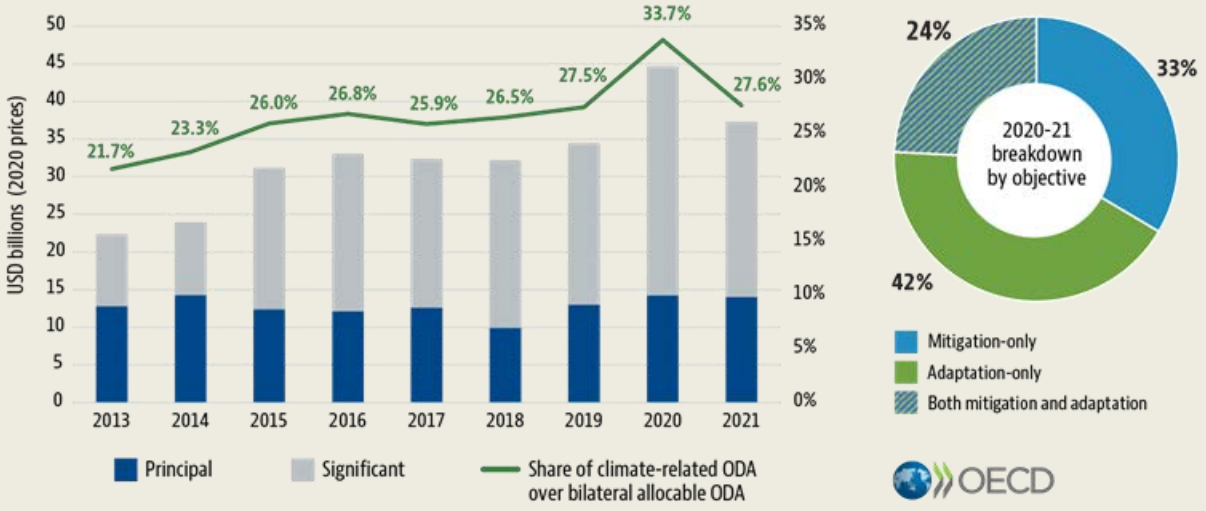
Climate-related development finance provided by bilateral sources, on the other hand, has shifted more definitively towards adaptation-related finance. In 2020, the volume of bilateral official development assistance (ODA) with adaptation objectives exceeded that of mitigation-related bilateral ODA (see Box 2.1). This shift speaks to an increasing trend in development finance to integrate adaptation considerations in projects with broader development goals. As noted in Chapter 1, adaptation finance in developing countries is often delivered as a component of development finance due to the strong links and complementarity between adaptation and development.

Box 2.1. Adaptation in development finance: Bilateral climate-related ODA increasingly focuses on adaptation

Bilateral adaptation-related ODA reached USD 27 billion in 2021, according to data provided by OECD DAC members. This marked a decrease from the USD 30 billion reported in 2020 but an increase over the 2019 volume of USD 20 billion. Of all climate-related finance in 2020-21, 42% addressed adaptation, 33% addressed mitigation and 24% addressed both objectives. Volumes of bilateral ODA with adaptation objectives surpassed mitigation-related bilateral ODA for the first time in 2020 (Figure 2.3).

Bilateral climate-related ODA figures differ from the bilateral climate finance published in the OECD reports tracking progress towards the USD 100 billion goal. Figures for climate-related ODA are higher than for climate finance because the former account for the full value of a contribution targeting adaptation and do not apply coefficients to weight the adaptation-specific value of the activity.

Figure 2.3. Trends in bilateral climate-related ODA from DAC members in 2013-21



Note: Box 1.2 provides context and further explanation of the accounting approach used.
Source: OECD (2023[2]), Creditor Reporting System: Aid activities targeting Global Environmental Objectives, https://doi.org/10.1787/9c778247-en

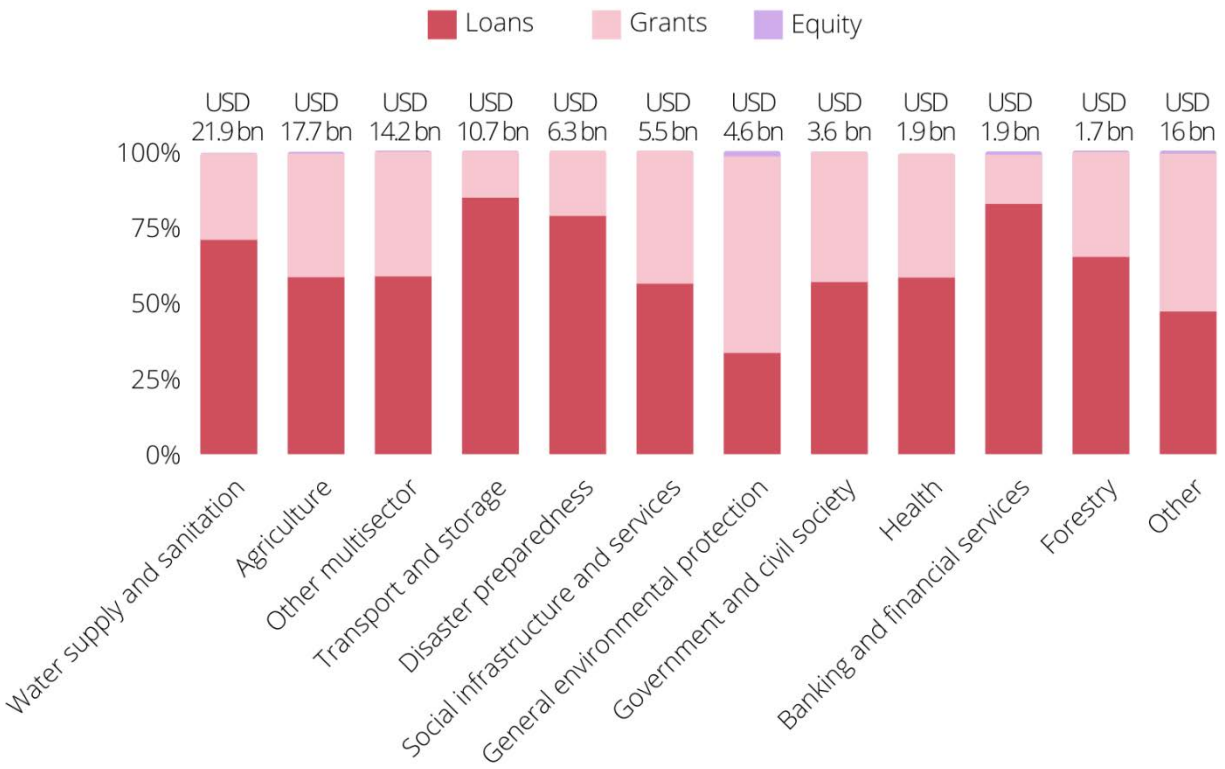
2.1.2. Climate finance for adaptation is concentrated in three sectors and mainly provided through loans

Between 2016 and 2021, half of public climate finance for adaptation was concentrated in three sectors: water supply and sanitation (21%), agriculture (19%), and transport and storage (10%). Another 6% went to a fourth sector, disaster preparedness. The remaining 44% was distributed across other sectors as shown in Figure 2.4. This sectoral distribution largely tracks the findings of World Bank and Climate Policy Initiatives analyses of largest identified needs presented in section 1.4.1. In some of the four main sectors, climate finance for adaptation is part of broader development finance projects, as further explored in Box 2.2.

Loans were the most frequently used instrument in all main sectors, accounting for 71% of climate finance for adaptation in water supply and sanitation, 59% in agriculture, 84% in transport and storage, and 78%

in disaster preparedness. Grants were the most frequently used instrument in smaller sectors, accounting for 95% of public climate finance in emergency response, 85% in development food assistance, 65% in and general environment protection (65%). The use of equity instruments was insignificant in all sectors over the period.

Figure 2.4. Public adaptation finance by financial instrument to top 10 sectors, 2016-21



Note: About 13% of total public adaptation finance targeted the "other multisector" category, due to the cross-cutting nature of adaptation support.
Source: Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD.

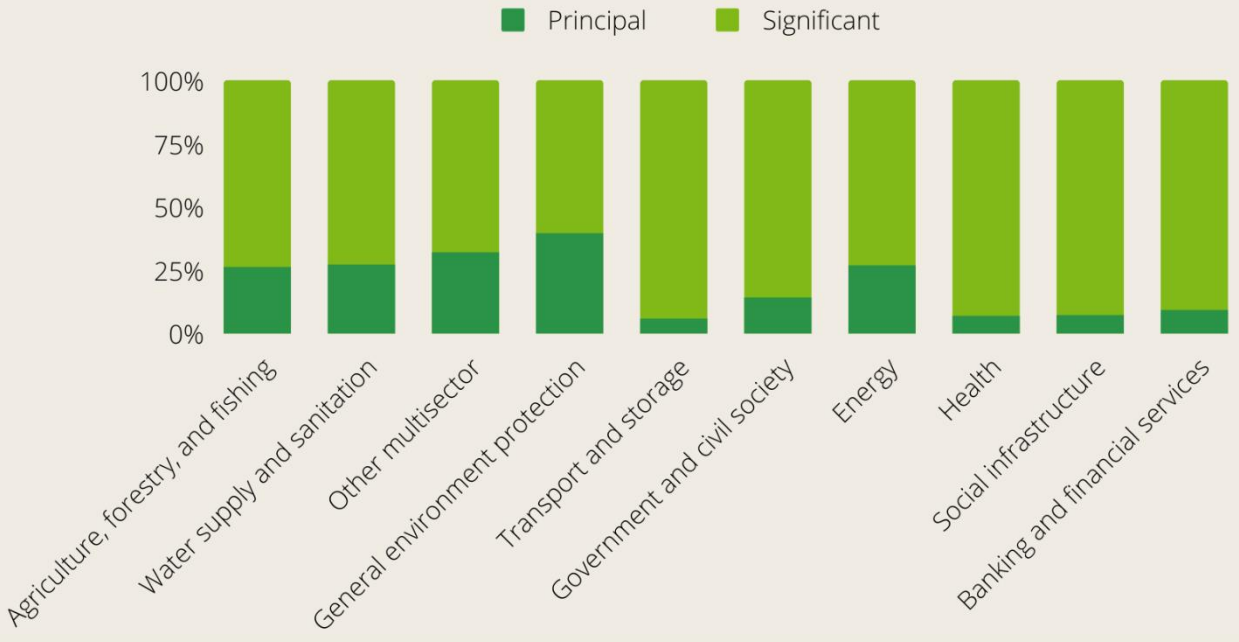
Box 2.2. Adaptation in climate-related development finance from DAC members: principal vs. significant adaptation objectives

Over 2016-20, 27% of bilateral adaptation climate-related development finance from DAC members was marked as having a "principal" (i.e., main) adaptation objective and 73% was marked as having adaptation as a "significant" objective. By comparison, 44% of mitigation-related development finance over this period was marked as having mitigation as a principal objective, showing that adaptation finance is often mainstreamed into development activities. (Box 1.2 provides additional context and explanations of Rio markers.)

The share of climate-related development finance with adaptation as a principal or significant objective varied greatly across sectors over the 2016-20 period (Figure 2.5). For example, an above-average share of finance was marked as principal in the sectors of disaster prevention and preparedness (52%), reconstruction relief and rehabilitation (48%) and general environment protection (48%). In all other sectors, however, most adaptation-related development finance is marked as significant, suggesting that adaptation finance focuses on aligning development with resilience rather than on stand-alone adaptation projects. In the two biggest sectors of adaptation-related development finance, the share of finance marked as principal was close to the average at 27% in agriculture, forestry and fishing and 28% in water supply and sanitation.

In some major sectors, adaptation is already widely mainstreamed into development finance. In agriculture, forestry, and fishing, 91% of official development finance went to projects with an adaptation marker; the share was 93% in water supply and sanitation, and 85% in general environmental protection. A much lower share went to such projects in other important sectors of adaptation-related development finance such as transport and storage (21%) and energy (15%), suggesting there is potential for further mainstreaming in these sectors.

Figure 2.5. Adaptation-related development finance from DAC members in top 10 sectors by adaptation Rio marker, 2016-21

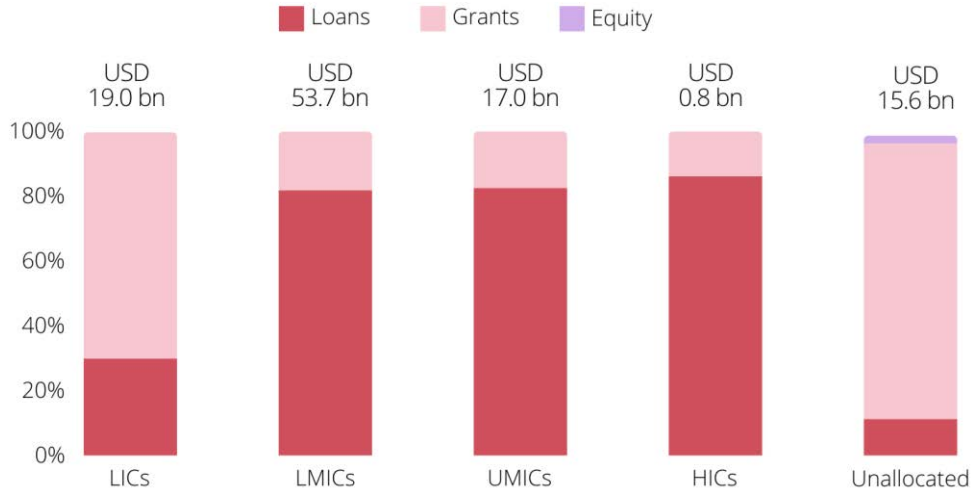


Source: OECD (2023[2]), Creditor Reporting System: Aid activities targeting Global Environmental Objectives, https://doi.org/10.1787/9c778247-en

2.1.3. Middle-income countries received the most international public climate finance for adaptation

Middle-income countries received 67% (USD 70.7 billion) of the USD 106 billion of public climate finance for adaptation provided between 2016 and 2021, with low-income countries receiving only 18% (USD 19 billion) (Figure 2.6). On a per capita basis, middle-income countries received a yearly average of USD 3.0 per capita, compared to USD 5.0 per capita in low-income countries. Small island developing states (SIDS) and the least developed countries (LDCs) received 5% (USD 5 billion) and 30% (USD 31.6 billion), respectively, of total public adaptation finance provided over the five years, and an annual per capita average of USD 13.0 and USD 5.0, respectively. For both SIDS and LDCs, public adaptation finance consistently increased in both absolute and relative terms. Fragile states[4] received 39% (USD 41.4 billion) of total public adaptation finance, which corresponds to a per capita average of USD 3.7. While public adaptation finance to fragile states increased in absolute terms, it remained stagnant in relative terms at around 40% of the total.

Figure 2.6. Public climate finance for adaptation by recipient country income group and financial instrument, 2016-21

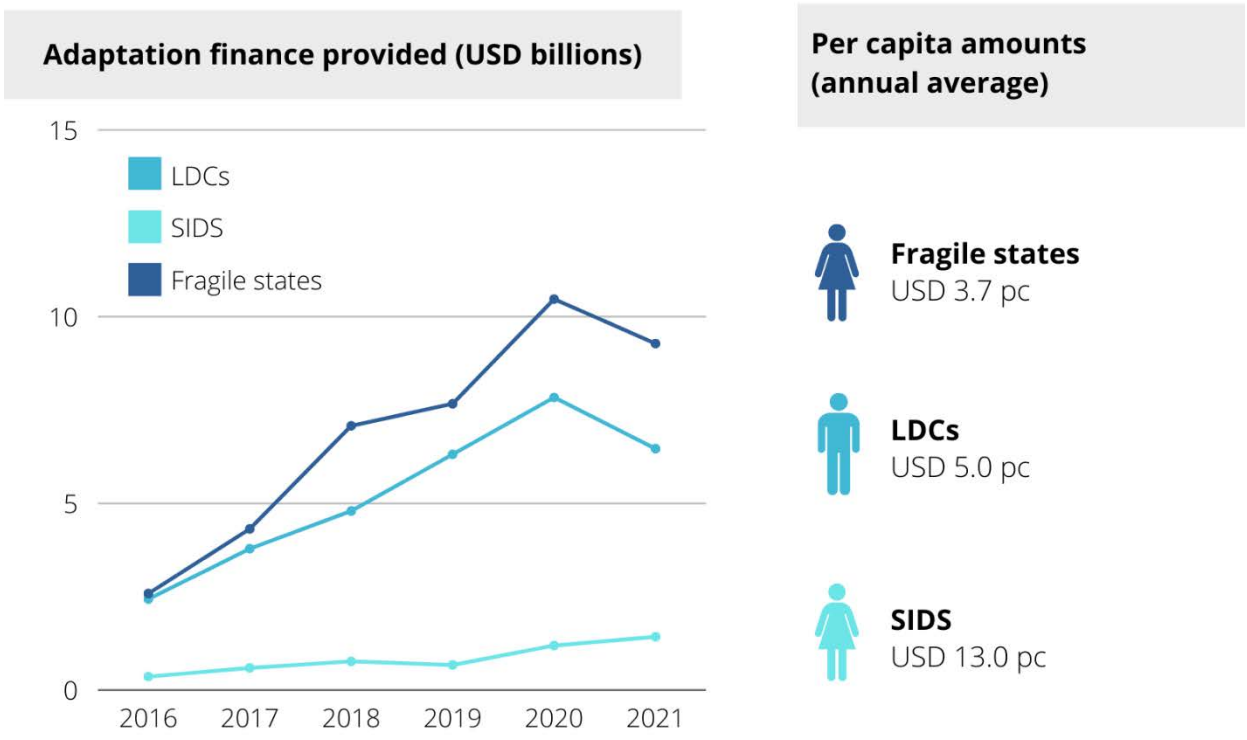


Note: The graph uses income groups according to World Bank definitions: Low-Income Countries (LIC), Lower-Middle Income Countries (LMIC), Upper-Middle Income Countries (UMIC) and High-Income Countries (HIC).
Source: Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD.

Climate finance for adaptation was also highly concentrated in a few countries with large populations. For example, between 2016 and 2021 the top 10 recipients, which together have 59% of the total population of recipient countries', received 32% of climate finance for adaptation. In contrast, the bottom 50 recipients, accounting for 8% of recipient countries' combined population, only received 1.5%. Among the 20 top recipient countries, 15 were lower-middle income countries, 3 were low-income countries and only 2 were upper-middle income countries.

In terms of financial instruments, almost 70% of public climate finance for adaptation in low-income countries was provided in the form of grants, and 30% was provided as loans. In lower-middle income countries the share of grants represented 18% of public climate finance for adaptation and 17% in upper-middle income countries. The breakdown of financial instruments remained stable over the years across the different income groups.

Figure 2.7. Public climate finance for adaptation for LDCs, SIDS and Fragile states 2016-21



Source: Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD.

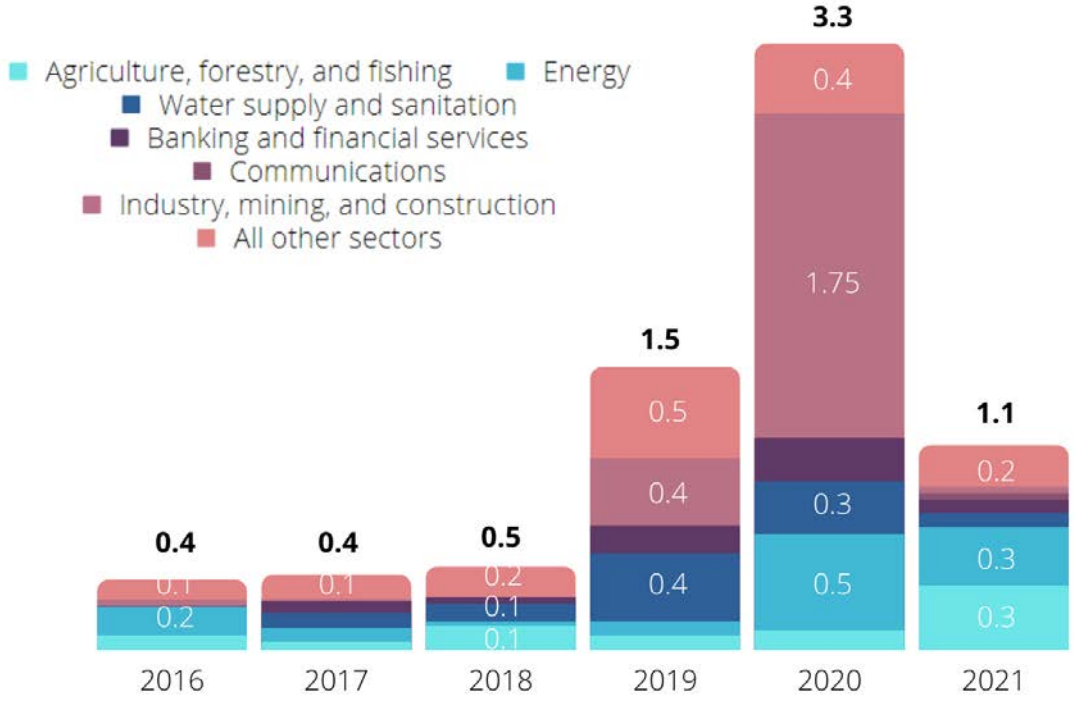
2.2. Private climate finance for adaptation mobilised by public finance interventions

The impact of bilateral and multilateral public climate finance on directly mobilising private finance for adaptation remains very low. Historically, public climate finance has mobilised significantly lower levels of private finance for adaptation than it has for mitigation objectives (OECD, 2022[1]). Between 2016 and 2021, developed countries' public finance interventions mobilised in total USD 7.1 billion of private finance for adaptation, i.e., USD 1.2 billion per year on average (Figure 2.8). By comparison, their public finance interventions mobilised USD 69.5 billion of private finance for mitigation over the period. It should be noted, however, that the sharp increase in private finance mobilised for adaptation in 2020 compared to other years was due mainly to a single large infrastructure project in the industry sector in Mozambique.

Many factors influence the ability of international providers to mobilise private finance. One is the composition of providers' portfolios – e.g., the balance between mitigation and adaptation, the instruments and mechanisms employed, and the sectors and geographies targeted. Also relevant are the broader policy and enabling environment in developing countries and macroeconomic conditions most broadly. A general lack of knowledge in the private sector about existing or future adaptation projects creates an additional obvious investment barrier (OECD, 2022[1]).

The mobilisation of private finance for adaptation by bilateral and multilateral public climate finance primarily took place in large infrastructure projects. Between 2016 and 2021, 30% of total private adaptation finance mobilised targeted the industry, mining, and construction sector; 16% targeted the energy sector; another 13% targeted the water supply and sanitation sector; 11% targeted agriculture, forestry, and fishing and 8% targeted banking and financial services. This sectoral split differs significantly from the sectoral distribution observed in international public climate finance for adaptation.

Figure 2.8. Private finance mobilised for adaptation by sector, 2016-21 (USD billion)



Source: Based on OECD DAC statistics and complementary reporting to the OECD.

Due to confidentiality constraints of several providers, detailed information on the nature and scope of the underlying projects, notably private sector projects, is often unavailable. Regarding those projects for which a description is publicly available, however, the mobilisation of private finance for adaptation seems to concern mainly climate mitigation projects that include a smaller adaptation component. More than 60% of private adaptation finance mobilised by DAC members had a "significant" adaptation Rio marker compared with 37% that had a "principal" adaptation Rio marker. An example is the financing of a 500-megawatt solar photovoltaic power plant in an Asian developing country: A share of the support was counted as adaptation finance for the purposes of developing and implementing design modifications to make the solar photovoltaic infrastructure more resilient to extreme weather events, rising temperatures and other impacts of climate change.

MDBs mobilised the biggest share (55%) of private adaptation finance; bilateral provider countries mobilised 30%, and multilateral climate funds mobilised the remaining 15%. Direct investments in companies were by far the most widely used leveraging mechanism, accounting for 44% of total private adaptation finance mobilised. These were followed by guarantees (17%), syndicated loans (15%), simple co-financing (13%), shares in collective investment vehicles (CIVs) (8%) and credit lines (3%). The breakdown of different actors and leveraging mechanisms in mobilising private finance for adaptation largely corresponds to that observed in the mobilisation of private finance for mitigation (OECD, 2023[3]).

The private finance mobilised for adaptation in 2016-21 was distributed between income groups more evenly than was the case for international public adaptation finance. Low-income countries benefitted from 25% of total private adaptation finance mobilised, lower-middle income countries from 24%, upper-middle income countries from 20%, and high-income countries from 13%. LDCs and fragile states received each a 33% of private finance mobilised for adaptation. At the same time, SIDS received only 0.6% of private finance mobilised for adaptation, amounting to just USD 45 million or USD 0.1 cents per capita per year. The figures should be interpreted with caution as there were large variations year to year due to the small number of projects.

Importantly, data on private finance mobilised directly by international public climate finance only provide a partial picture of private finance. For example, stand-alone private finance that does not involve international public climate finance providers is not included. Therefore, the discussion in this section is not a comprehensive overview of all private sector participation in financing adaptation in developing countries. Further, the data do not reflect the effect that public interventions such as international capacity building or domestic policies may have in catalysing private sector finance and participation over time.

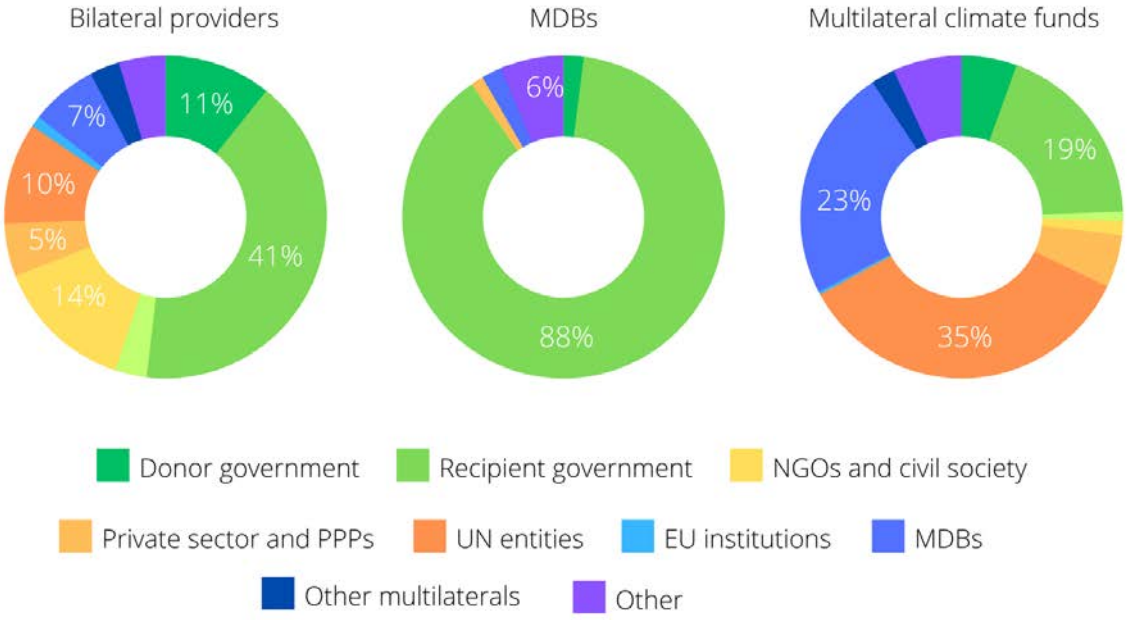
2.3. Delivery and implementation of adaptation-related public development finance

The flow of finance from providers can cascade through multiple intermediaries and end beneficiaries. For instance, adaptation finance might flow from a provider country's extending agency to an MDB as earmarked funding, be forwarded to a recipient country's national government, and then flow from the national government to local authorities and end beneficiaries. Analysis of channels of delivery can provide useful information on the end-users of adaptation finance and, in turn, help providers better tailor the options for scaling up adaptation finance. The data analysis presented in this section is based on the OECD DAC Creditor Reporting System (CRS) data on climate-related development finance[5] and provider interviews conducted for this study, as information on delivery channels is not available in the context of OECD work on tracking progress towards the USD 100 billion goal.

The majority (56%) of adaptation-related public development finance provided between 2016 and 2021 was delivered through recipient country governments (see Figure 2.9.). Multilateral organisations were the second most important channel of delivery, accounting for 17% of this finance; non-governmental organisations (NGOs), civil society delivered 8%, provider governments delivered 6%, and private sector

institutions 3%. Among multilateral institutions, UN entities were the top implementers with 7% of the overall total, followed by regional development banks and the World Bank Group that each delivered 3% of public development finance for adaptation. Among NGOs, donor country-based NGOs dominated, delivering 5% of all such finance. Developing country-based NGOs delivered only 1% of the total.

Figure 2.9. Delivery channels of adaptation-related development finance, 2016-21



Source: Data based on OECD (2023[2]), Creditor Reporting System: Aid activities targeting Global Environmental Objectives, https://doi.org/10.1787/9c778247-en

The channel of delivery for adaptation finance has a significant impact on how funds are used, the efficiency of resource allocation and the overall effectiveness of adaptation projects. Each channel of delivery has its own strengths and weaknesses that can influence the impacts of adaptation finance; different channels are active in different sectors and implement different types of projects. Based on 2016-21 OECD DAC CRS data on adaptation-related development finance the following findings are highlighted:

- **Multilateral institutions** primarily delivered 35% of adaptation-related development finance targeting the environmental policy and administrative management sub-sector. Among all multilateral institutions, UN entities, given their prominence in humanitarian and emergency interventions, delivered 37% of all adaptation-related development finance for food assistance and 56% of all adaptation-related development finance for emergency response. EU institutions and MDBs delivered 59% of total adaptation-related development for energy generation. Most of the finance delivered by multilateral institutions (82%) was in the form of grants; the average project size ranged from USD 5.1 million for UN entities to USD 26 million for EU institutions.
- **Governments of bilateral providers**[6] tend more often to be involved in smaller-scale projects related to general environmental protection. Bilateral providers delivered 13% of general environment protection finance. Bilateral providers also delivered 17% of the total adaptation-related development finance for the government and civil society sector. The overwhelming majority (88%) of adaptation-related development finance delivered by bilateral providers is in the form of grants, and the average project size is USD 3.4 million.

- **Recipient country national governments** are the primary channel of delivery for adaptation finance in subsectors related to domestic infrastructure investments, having delivered 88% of finance for road transport, 92% for large water supply systems and 85% for agricultural water resources. Delivery by recipient country national governments can help ensure that adaptation finance is used in ways that align with national priorities and local contexts. However, the effectiveness of this channel depends on the capacity of the government to manage and allocate resources. Most of this finance delivered by recipient governments (79%) was in the form of loans, and projects were relatively large with an average project value of USD 21.4 million.
- **NGOs and civil society organisations** (CSOs) often have strong local networks and a deep understanding of community needs that can enable them to implement targeted and locally tailored adaptation projects. However, NGOs and CSOs may face challenges in accessing large-scale funding and may have limited capacity for project management and monitoring. NGOs and civil society were most active in fields relating to social policies, humanitarian action and civil society. They delivered 85% of all adaptation-related development finance for democracy and civil society, 24% of development food assistance, and 17% of agricultural development. NGOs and civil society implemented almost exclusively grants (99.7%), focusing on small projects with an average size of USD 1.2 million.
- **Private sector implementation channels** for adaptation finance can provide innovative solutions, increase efficiency, and leverage additional resources. However, profit-driven private sector investment can result in a focus on projects with clear financial returns, potentially neglecting the needs of the most vulnerable communities. Private sector institutions mainly delivered adaptation finance in subsectors linked to financial returns such as banking and financial services (17%) and energy generation (11%). Projects implemented by the private sector with international public finance are also relatively small, with an average size of USD 2.8 million.

The channels of delivery vary across recipient country income groups. The use of multilateral organisations and NGOs is slightly more prevalent in LDCs than in other recipient countries. Recipient country national governments, however, deliver 59% of adaptation finance in LDCs, 74% in UMICs and 59% in SIDS and are the primary channel of delivery in fragile states. In SIDS, multilateral organisations deliver 20% of adaptation projects. Private sector institutions and public-private partnerships are less common in SIDS than in other countries.

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OECD (2022), *Climate Finance Provided and Mobilised by Developed Countries in 2016-2020: Insights from Disaggregated Analysis*, Climate Finance and the USD 100 Billion Goal, OECD Publishing, Paris, https://doi.org/10.1787/286dae5d-en. [1]

Notes

[1] Data used by the OECD to track progress towards the USD 100 billion goal is based on Based on Biennial Reports to the UNFCCC, OECD DAC statistics, complementary reporting to the OECD. Importantly, for both multilateral public and mobilised private climate finance, the OECD work on Climate Finance and the USD 100 Billion Goal only considers the share of finance that is attributable to developed countries, recognising developing countries shareholders contribute to the financing and operations of multilateral development banks and development finance institutions. The approach of considering only the "attributed" share of these two components is taken in the context of focusing on developed countries' contributions and their progress towards the UNFCCC USD 100 billion goal.

[2] Further information about the methodologies used by the OECD to gather these data is presented in Annex A of a 2022 report in the Climate Finance and the USD 100 Billion Goal series titled Climate Finance Provided and Mobilised by Developed Countries in 2016-2020: Insights from Disaggregated Analysis.

[3] Financing provided bilaterally by the EU Commission from the EU budget and European Development Fund.

[4] Fragile states are generally defined as presenting weak capacities to carry out basic governance functions and lacking the ability to develop mutually constructive relations with society (OECD, 2022[1]).

[5] Within the OECD CRS database, the channel of delivery is defined as the first implementing partner. It is the entity that has implementing responsibility over the funds and is normally linked to the extending agency by a contract or other binding agreement and is directly accountable to it. By focusing on the first implementing partner, the OECD CRS database does not capture co-implementing agencies that may be involved in the realisation of development projects. Nonetheless, the channel of delivery combined with qualitative information from interviews with providers can serve as an indication for some key trends in adaptation finance delivery.

[6] This refers to the channels of delivery called "donor government" and "third country government (delegated co-operation)" in the CRS. In practice, these flows will often be transferred to other channels of

delivery. For example, EU institutions may fund a project planned by KfW, in which case the EU would report the project as delivered through “third country government (delegated co-operation)”, but KfW may transfer the funding to a local organisation for actual implementation.

3 Challenges in financing adaptation in developing countries

This chapter explores barriers to scaling up and mobilising further adaptation finance. These relate to economic and financial conditions, knowledge and capacity gaps, and institutional and governance arrangements. Developing countries' financial, technical, and institutional constraints hinder both their access to international public finance and their ability to attract complementary private investment for adaptation activities. Challenges include data and knowledge gaps that hinder the ability to identify, develop and prepare potential climate adaptation projects, as well as the fragmented adaptation finance architecture and difficulties to access relevant sources of finance.

As discussed in Chapters 1 and 2, adaptation action in the face of climate change requires the scaling up of climate finance for adaptation purposes. To date, data indicate that there exists a notable shortfall in climate finance provided or mobilised for adaptation purposes within the context of the USD 100 billion goal. Adding to the challenges are capacity and resource gaps in developing countries and other institutional and financial barriers. Based on trends in finance flows, recent research, and interviews with key stakeholders from developed and developing countries multilateral institutions, this chapter discusses three categories of challenges to increasing both public and private finance for adaptation: economic and financial, technical and knowledge-based, and institutional and governance barriers. Options to address and overcome these challenges are presented in Chapter 4.

3.1. Economic and financial barriers

Adaptation action, primarily aimed at safeguarding societies and economies from the adverse impacts of climate change, is traditionally seen as a government responsibility. Public investments in adaptation often target transport, energy infrastructure, information technology systems, education and health infrastructures, intangible assets, and disaster risk reduction. The primary objective of public investment is to enhance productivity, boost economic growth and promote societal well-being. Though public investment might not offer a direct financial return and is financed through public budgets, it operates on the principle of both economic and social returns. Governments may issue debt for public investment based on the rationale that public investment bolsters the economic environment, fostering growth and consequently higher government revenue that can be put towards repaying and servicing debt.

The conventional approach to mobilising private finance for public investments in climate change adaptation is to issue government debt in capital markets and channel the proceeds towards adaptation projects. However, in reality, many developing countries and especially lower-income countries have limited tax bases and borrowing capacity. The dual challenges of the COVID-19 pandemic and the economic fallout from Russia's aggression against Ukraine worsened many developing countries' fiscal stance, and rising debt levels further restrict their capacity for domestic public investment in adaptation. In 2022, 60% of countries eligible for the G20 Debt Service Suspension Initiative were in debt distress or at high risk of debt distress – double the proportion in 2015 (Chabert, Cerisola and Hakura, 2022[1]). This restricts their capacity for domestic public investment in adaptation.

Climate change also influences public investment decisions. Public adaptation investments could become a necessity to reduce and avert economic losses. Research suggests that a USD 50 billion investment in flood defences for coastal cities could reduce projected losses in 2050 from USD 1 trillion to just USD 60 billion, for instance (Klusak et al., 2023[2]). Yet, vulnerable countries may lack the financial resources and capacity to invest in activities to avert climate-induced losses in the future without putting their debt sustainability at risk in the present. The impacts of climate change also could negatively affect a country's credit ratings, limiting its ability to source finance for adaptation (Klusak et al., 2023[2]).

Given these public finance constraints, private sector investments can play a key, complementary role in supporting adaptation through solutions that can range from forecasting data services to climate-resilient crops and advanced irrigation systems. Private businesses make adaptation investment choices for their own best interests, for instance fortifying their operations. Growing demand for adaptation products also means there are potentially lucrative business opportunities in adaptation, and the aggregate result of firms capitalising on these opportunities and making informed adaptation decisions greatly benefits the overall adaptation landscape. As is the case with public finance, there are a number of barriers to increased private adaptation investment in developing countries. Effective adaptation action by private investors requires policies and regulatory frameworks that foster an efficient and effective enabling environment. Individual firms also need access to the right financial products and service to optimise adaptation investments.

In this context, specific factors that can hinder investment in adaptation, particularly from the private sector, include:

- **Difficulty of pricing climate risk**. Understanding the positive impact of investments on business profitability is key to making a business case for private finance for adaptation. This entails valuing and pricing the potential impacts of climate events on revenue streams, business interruption or discontinuation of operations. Coastal real estate development offers an example: without a clear understanding of potential sea level rises and increased storm frequency, developers might underinvest in precautions, thereby risking significant future damage. However, localised variations make climate-related impacts unique to specific areas, complicating the risk-return evaluation of adaptation investments. Data gaps compound the difficulty. Without an accurate pricing of climate risks, the private sector could choose to simply avoid adaptation investments. More broadly, it is also difficult to price inaction. This relates to the additional challenge of establishing a counterfactual – for example, how would the population have adapted or coped with a climate-related crisis without the intervention? – and the fact that the effectiveness of the adaptation intervention may only be seen when a climate risk actually materialises (OECD, 2023[3]). Section 4.4. discusses options that international providers could consider to address these challenges.
- **Challenges of quantifying non-financial benefits**. The benefits and co-benefits of adaptation may not readily translate into financial returns. Societal benefits and externalities are seldom documented, recorded, or quantified, which means the true value of an investment may not be adequately reflected when only its financial returns are considered (Stoll et al., 2021[4]). Moreover, such benefits may not be captured due to a variety of market failures and equity reasons (Tall et al., 2021[5]). Sections 4.4 and 4.5 present options to overcome this challenge.
- **Lack of policies and regulation to internalise adaptation benefits.** Dedicated policies and regulatory frameworks can overcome the challenges to valuing adaptation benefits and pricing inaction. A supportive policy environment that includes regulations, incentives, and frameworks specific to adaptation can help establish a clear mandate for businesses to incorporate climate risks and adaptation strategies into their operations and investment decisions (OECD, 2022[6]). For instance, businesses can be required to implement disaster risk management strategies, incentivising them to take measures to address climate-related risks (Hallmeyer and Tonkonogy, 2018[7]). However, in many developing countries, such policy environments to support sector-specific investment in adaptation are lacking. Information regarding the impact of climate change and benefits of adaptation is also crucial to convince businesses to act to adapt to the reality of climate change. Sections 4.2. and 4.4 set out options for addressing these challenges.

As shown Table 3.1 in some sectors, including agriculture or climate-resilient infrastructure, already offer significant potential for financial returns and for a progressively increasing role from the private sector. This is because these sectors have a direct link to profit-making activities and can provide both tangible and quantifiable benefits, often leading to a quicker return on investment. In addition, market-driven innovations and advancements in technology have further increased the attractiveness of these sectors for private investment. In contrast, sectors such as enabling environments, coastal zones, and, to some extent, water, which offer public services, will still likely require continued support from public actors and sources.

Table 3.1. Overview of adaptation activities and respective expected financial returns

Adaptation activity	Examples of activities	Usually publicly funded	Mixed (below-market)	Commercially viable
Enabling environments	Development of national adaptation plans and strategies			
	Provision of climate-related data and risk maps			
	Implementing Early Warning Systems covering climate-related events			
	Development of new technologies and services for adaptation			
	Development of financial services to support adaptation (e.g. credit and insurance)			
	Consultancy services for adaptation			
Agriculture	Afforestation and reforestation			
	Changing production towards better-adapted crops and varieties			
	Installing water-efficient irrigation			
Coastal zones	Restoration of coastal wetlands			
	Relocation of properties from high-risk areas			
	Beach nourishment			
	Flood defences			
Infrastructure	Integrating climate resilience into the design of new infrastructure			
	Increase backup systems in infrastructure networks			
	Making existing infrastructure resilient			
Water	Expanding water storage capacity			
	Desalination			
	Reducing leaks in existing infrastructure			
	Protecting watersheds			
	Improving water efficiency of major water users			

Note: The shading expresses the extent to which they relate to the respective financial returns, with white cells having no financial return and dark grey having the highest potential for returns.
Source: Authors.

3.2. Technical and knowledge-based barriers

Demand from developing countries should guide the provision by international providers of adaptation finance (Section 2.1). However, many developing countries lack clear project pipelines and national strategies for adaptation that they need to apply for and access sources of climate finance. Providers can support developing countries in identifying and preparing project proposals for adaptation activities and systematically integrating adaptation considerations into broader development projects. While planning project proposals and development strategies is a challenge in all development finance, several factors make it particularly challenging in the context of adaptation:

- **Gaps in data availability, granularity, and quality**: Developing countries may have difficulty accessing accurate and up-to-date climate data for their regions such as historical climate records, climate projections, and localised data on temperature, rainfall patterns, sea level rise and extreme weather events. Reliable climate data are important for assessing specific climate risks and vulnerabilities that need to be addressed through adaptation projects. Moreover, adaptation project proposals can require capacities in detailed climate modelling, monitoring and evaluation of

adaptation impacts as well as in linking climate impacts to policy action (Richmond, Saghir and Tapia, 2021[8]). Conducting thorough vulnerability assessments is essential to identify the sectors, communities, and ecosystems most at risk from climate change impacts. But developing countries often encounter data gaps that limit their understanding of social, economic, and environmental vulnerabilities including limited data on demographics, poverty rates, infrastructure conditions, ecosystem services and the adaptive capacity of local communities (OECD, 2023[9]). Collecting and processing accurate and timely data is costly and requires specific skills, and in least developed countries (LDCs) and small island developing states (SIDS) in particular, data on weather and climate are lacking (Casado Asensio, Blanquier and Sedemund, 2022[10]). Section 4.2 presents options for providers to address the data challenge.

- **Difficulty demonstrating the adaptation-specific objective of project proposals**. Adaptation finance is often embedded in broader development projects (Section 1.2. and Box 2.2.). This results in challenges with respect to distinguishing adaptation and development activities. For instance, a project to improve agricultural yields may incorporate improved irrigation systems, resistant crop varieties and farmer training as part of a broader development plan. Such activities are also adaptive measures as they enhance resilience to changing climatic conditions such as fluctuating rainfall patterns and rising temperatures. It can be difficult to delineate and separate out the incremental costs of adaptation as is often required as part of the application process for adaptation funding from international providers (IMF, 2021[11]). Sections 4.2., 4.3. and 4.4. present options for international providers to address this difficulty.
- **Lack of capacity and expertise to develop adaptation strategies and project pipelines**. All providers consulted for this report cited the lack of project pipelines and/or tangible national strategies as a key challenge to scaling up adaptation financing. Both multilateral development banks (MDBs) and climate funds, two of the primary providers of international climate finance, require developing countries to submit project proposals with their applications. Some bilateral providers reported that for their climate and adaptation financing to be approved and disbursed, there must be a demonstrable and clear link between the project to be funded and an existing national strategy or plan. However, developing countries often lack the necessary expertise to conduct comprehensive climate vulnerability assessments, identify suitable adaptation activities and subsequently integrate these into broader development plans. High-level strategies such as their national adaptation plans (NAPs) often do not contain sufficiently detailed or concrete projects (Box 3.1). Section 4.2 presents options for addressing this challenge.

Box 3.1. How national adaptation plans can help access and attract adaptation finance

Global update of the NAP process

To support developing countries in preparing adaptation project proposals, the 16th Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change, or COP16, established the NAP process for countries to analyse the impact of climate change, identify adaptation needs, and develop strategies and programmes to address these needs (UN, n.d.[12]). This process helps structure and plan adaptation in developing countries and is crucial to accessing adaptation finance. A well-formulated NAP can be instrumental in applying for adaptation finance with well-defined, impactful projects embedded in broader national strategies.

As of June 2023, 139 of 154 developing countries have started the NAP process, but only 45 have submitted NAPs (UN, n.d.[12]). Submitted NAPs vary widely in their level of detail and their content, with many focusing on strategy and falling short in terms of identifying concrete actions and financing needs. Only 23 of the 45 submitted NAPs include lists of concrete projects accompanied by a time frame, cost estimates, sub-actions, output indicators and/or or stakeholders to be involved. Another 13 identify adaptation actions but are missing details on implementation, responsibility, or financing needs; 9 NAPs only identify broad areas of action. Additionally, 13 of the submitted NAPs provide cost estimates by project, 14 estimate costs by sector or as a total, and 18 do not include any cost estimates. Not all the NAPs have financing strategies and where these do exist, they often simply list possible sources of adaptation finance. Many of the NAPs mention that the process is at an early stage and reference more detailed planning underway at sectoral and regional levels that could eventually lead to a pipeline of investable projects. NAP processes in developing counties typically benefit from technical and financial international support including from the NAP Global Network (NAP Global Network, n.d.[13]) and Green Climate Fund (GCF) Readiness and Preparatory Support Programme.34 out of 45 submitted NAPs acknowledge that external support was involved their formulation.

Madagascar's NAP

The Madagascan NAP clearly identifies actions that need to be taken and why, their benefits and cost, and how they can be financed (Ministère de l'Environnement et du Développement Durable, 2021[14]). It includes detailed project proposals in 12 national programmes, with a one-page summary for each programme setting out the project location, context, objectives, costs, indicators, potential financing sources and a time frame. These summaries contain a sufficient level of detail to provide a solid basis for the development of a project proposals and to initiate funding discussions with interested providers. The NAP takes stock of current funding sources and defines strategic actions to enhance the financing process for adaptation actions. On a domestic level, these actions include mobilising internal resources and budgeting planned actions. The Madagascar government also outlines actions to mobilise external finance, including through accrediting a national entity at the GCF, mobilising private investment through incentive schemes (such as co-financing, subsidies, and credit guarantees); strengthening government capacities to prepare project proposals; and creating a national climate fund as a focal point. Madagascar also sets out actions to integrate adaptation financing in the national budget, mainly relating to capacity building.

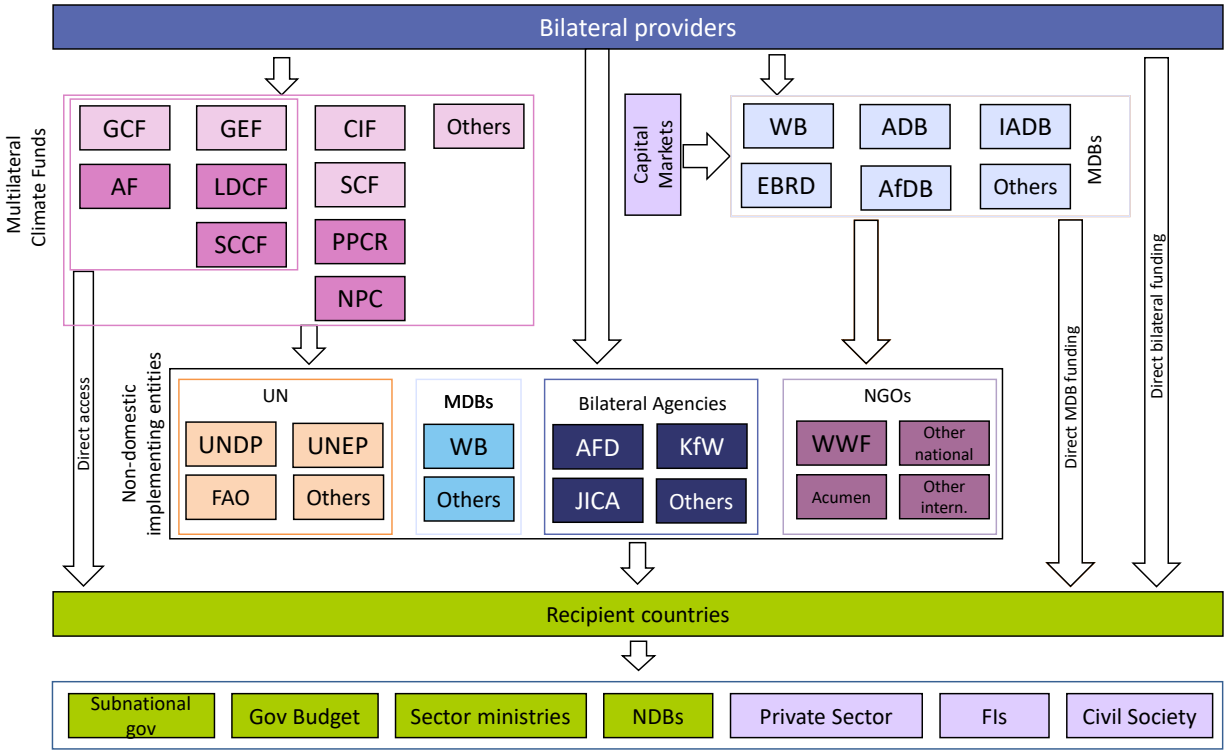
Source: Authors' own analysis of available NAPs on (UN, n.d.[12]).Source: NAP Central (n.d.[12]), Frequently Asked Questions, https://napcentral.org/faq, NAP Global Network (n.d.[13]), NAP Global Network, https://napglobalnetwork.org/about/ ; Government of Madagascar (2021[14]), https://unfccc.int/sites/default/files/resource/PNA-Madagascar.pdf ; Republique du Cameroun (2015[15]), https://www4.unfccc.int/sites/NAPC/Documents/Parties/PNACC_Cameroun_VF_Valid%C3%A9e_24062015%20-%20FINAL.pdf ; OECD (OECD, 2022[6]), Climate Finance Provided and Mobilised by Developed Countries in 2016-2020: Insights from Disaggregated Analysis, https://doi.org/10.1787/286dae5d-en

3.3. Institutional and governance barriers

Obtaining adaptation finance can be a complex and challenging endeavour for developing countries due to the diverse landscape of providers, varied eligibility criteria and intricate application requirements. The fragmentation of the adaptation finance architecture intensifies these challenges (Figure 3.1). As is the case for technical and knowledge-based challenges to increase adaptation finance, institutional and governance challenges apply to development finance more broadly but are more acute in the context of adaptation finance. There are many reasons for this, but chief among them is the small scale and context-specific nature of adaptation projects that makes the preparation of funding applications more daunting. Different categories of adaptation finance providers have different approaches to support developing countries to access public development financing:

- **Climate funds** mainly consider project or funding proposals submitted by developing countries, though an accredited entity often facilitates applications.[1]
- **Bilateral providers** with field presence mainly develop their programmes by engaging in dialogue with developing countries to jointly identify areas where support is needed. Access to bilateral funding can be more flexible and less burdensome than for climate funds and MDBs but may also focus more on smaller-scale projects.
- **MDBs** employ mixed approaches. Some operate based on project applications submitted by developing countries while others engage in bilateral discussions with partner countries to identify opportunities for investment.

Figure 3.1. Overview of international public climate finance architecture



Note: FIs = Financial Institutions; NDBs = National Development Banks; NPC = Nature, People and Climate Program; SCF = Strategic Climate Fund.
Source: Inspired and re-adapted by authors based on Fouad et al (2021[11]), Unlocking Access to Climate Finance for Pacific Island Countries, https://doi.org/10.5089/9781513594224.087.

The complex international adaptation finance architecture poses additional challenges to accessing and increasing adaptation finance for developing countries:

- **Fragmentation of the climate funds architecture**. Multilateral climate funds have proven to be effective in mobilising and scaling funds for specific purposes in the short term (OECD, 2022[16]). However, the creation of such funds both reflects and contributes to the fragmentation of the broader aid landscape. Not all funds can have implementing capacity on the ground, as this would be costly and unrealistic, and therefore rely on the implementing capacity of existing multilateral organisations. Such funds also add to the complexity of the system and may also add transaction costs related to delegation (OECD, 2022[16]). At the end of 2022, there were between 81 and 99 climate funds, according to different studies[2] (OECD, n.d.[17]; Houérou, 2023[18]). Their proliferation raises concern about their complementarity and additionality towards increasing climate finance flows – questions that link most broadly to calls for multilateral reform in order to increase the system's overall financing capacity (OECD, 2022[16]; OECD, 2023[19]). Different funds have different standards regarding public reporting, limiting transparency and comparability. Consequently, it is challenging to measure their actual true impact (Houérou, 2023[18]). Importantly, it is also difficult for countries seeking to access the climate funds to understand what each might offer and to navigate their different criteria. In interviews for this report, developing country officials said they find it hard to determine which fund is most appropriate for a particular project and to tailor proposals to fit the funds' diverse mandates and funding criteria, especially given the interlinkages of adaptation, development and environmental protection. Section 4.3 presents options for addressing this challenge.
- **Accreditation barriers to access climate funds directly**.[3] These barriers prevent many developing countries from accrediting national entities to manage funds from multilateral climate sources such as the GCF and the Adaptation Fund. The accreditation process usually requires robust financial management, environmental and social safeguards, and transparency and accountability systems (United Nations and Climate Finance Access Network, 2022[20]). Often, an entity must demonstrate the ability to undertake specific types of due diligence; produce audit reports on institutional management programme effectiveness; and/or properly report on the progress, delivery, and implementation of projects. To access the GCF, for example, an entity seeking accreditation must demonstrate it is able to satisfy as many as 479 public financial management requirements (IMF, 2021[11]). While these safeguards are important to ensure effective financial management, streamlining some of these requirements may help increase developing countries' access to adaptation finance. In many developing countries, capacity to meet these criteria is lacking, which constitutes a significant barrier to accreditation. Developing countries with limited capacity often rely on large international accredited entities (such as UN agencies or the MDBs themselves) to access adaptation finance from multilateral climate funds. Only 89 national implementing agencies in total are registered at the GCF and the Adaptation Fund.[4] Sections 4.3 and Box 4.4 outline options for addressing this challenge.
- **Challenges in complying with a wide range of diverse eligibility criteria and application requirements for project proposals**. Adaptation providers' eligibility criteria for adaptation typically cover applicant type, regional focus or thematic areas among other characteristics. As providers have not harmonised requirements regarding adaptation definitions, eligibility standards, project appraisals and due diligence, recipient countries often struggle to stay abreast of each fund's criteria for obtaining funding (OECD, 2023[9]). In the absence of unified standards and metrics to measure benefits from adaptation, a particular challenge is to demonstrate the climate rationale of adaptation projects (as opposed to the rationale for mitigation). Smaller countries are particularly affected since they frequently rely on just a few international providers and may miss out on additional funding opportunities (Klöck and Fagotto, 2020[21]). Still other developing countries receive funding from more than 20 international providers at the same time, which

requires a considerable co-ordination effort (Klöck and Fagotto, 2020[21]). Sections 4.2 and 4.3 set out options to overcome these challenges.

- **Lengthy review processes by providers of adaptation finance**. Review processes of project proposals can take years, delaying disbursement of funds. In the context of adaptation finance, wherein detailed project justifications are required to establish an adaptation rationale and there are few common standards or metrics, the bottlenecks are especially severe. Interviewees from developing countries noted that the drawn-out review process can mean that project become obsolete due to shifting national priorities. However, any attempt to revise or expand the proposal to reflect such once the process is underway can potentially extend the approval timeline further, adding to the complexity of these processes. Staff of developing countries and international providers may change during the process as well, with the risk that feedback loops may also lead to conflicting comments and make making the review process even more difficult to manage. Protracted reviews of funding proposals can stem from capacity gaps on the side of both the provider and recipient as the complexity of funding criteria. Section 4.3 outlines options to continue to enhance these processes to address this barrier.
- **Limited reach to local organisations.** Empowering local actors and communities to access adaptation finance has the potential to not only foster higher absorption and demand but also increase the effectiveness of adaptation finance through more targeted responses. Such a shift in approach would simultaneously build capacity, facilitate adaptation to local needs and amplify the impact of these crucial funds. However, local actors have few options to access funding from international sources directly, and many current intermediary structures are insufficiently tailored to reach the local level (Soanes et al., 2017[22]). Challenges relating to compliance with providers' requirements, for instance drafting project proposals demonstrating a climate rationale, as well as challenges related to climate data affect local actors more than national governments (Soanes et al., 2017[22]). Language can often also barrier as many providers only accept funding proposals written in a few internationally used languages that might not be spoken in local communities. Section 4.3 presents options for tailoring adaptation finance to reach the local level.
- **Finance architecture is not tailored to the needs of SIDS, LDCs and fragile states**. Thanks to their higher capacity, middle-income countries with strong institutions and experience in development co-operation tend to attract proportionally more adaptation finance than countries more vulnerable to climate change impacts such as LDCs and SIDS, which usually have less-developed institutional capacities and significant staffing constraints for preparing project proposal (OECD, 2023[9]; LDC Expert Group, 2020[23]; United Nations and Climate Finance Access Network, 2022[20]). Some providers, notably multilateral institutions, have adopted approaches for a more balanced allocation of adaptation finance across developing countries (Box 3.2), while some funds specifically focus on lower-income countries such as the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). Section 4.2 discusses options to better direct adaptation finance to the most vulnerable countries.

Box 3.2. How multilateral institutions allocate finance for adaptation across developing countries

Multilateral institutions complement a bottom-up and demand-based approach with recipient country target shares for adaptation finance or with country programmes to ensure geographical balance in their portfolio, address vulnerabilities of recipient countries and reduce risks. The African Development Bank (AfDB), for example, allocates its resources across recipients based on criteria of country performance,[5] with special facilities reserved for fragile contexts and regional operations. Country governments propose projects to use these allocations with some co-ordination via dedicated country programmes with the AfDB.

To ensure that climate finance is not overly concentrated in certain recipient countries, multilateral climate funds operate with country caps (Section 4.3.). In this system, all eligible countries have access to a defined sum of grants, for example USD 20 million per country in the case of the Adaptation Fund (Adaptation Fund, 2021[24]). To access these resources, countries still must propose eligible projects for approval by funding boards. Uniform country caps, while beneficial for including neglected recipient countries, have been criticised for not addressing varying country needs and capacities and inadvertently creating an uneven distribution of adaptation finance (Mori, Rahman and Uddin, 2019[25]). In the existing system, countries with large populations, for instance India, are eligible for the same maximum amount of finance as smaller countries such as Saint Lucia. The result is higher per capita funding for smaller countries, though this is justified in some cases where the cost of adaptation projects remains constant regardless of population size (IMF, 2021[11]). As funding resources grow, these caps may hinder the rapid scale-up of adaptation finance. Therefore, funds such as the LDCF, the Adaptation Fund and others have modified their policies, allowing financing beyond the initial cap and creating alternative financing windows to ensure more flexibility and larger absorption potential for bigger countries (GEF, 2022[26]).

Table 3.2. Overview of approaches for the allocation of adaptation finance across selected multilateral climate funds

Multilateral Climate Fund	Method of allocation	Focus on vulnerable countries?	Country cap?
Adaptation Fund	Project- and programme-based allocation	Equitable access ensured through country cap	USD 20 million
Climate Investment Funds (CFI, including Pilot Program for Climate Resilience [PPCR])	Project-based application through MDBs on the basis of indicative funding envelopes for programmatic investment plans	Choice of participating countries based on vulnerability to climate risks	Indicative funding envelopes for each country based on programmes
Global Environment Facility (GEF)	System of Transparent Allocation of Resources (STAR): Performance-based framework building on global benefits, country performance and Gross Domestic Product (GDP) per capita.	Indirectly through global benefits and GDP per capita criteria	10% of total focal area resources for each focal area
Least Developed Countries Fund (LDCF, part of the GEF)	Project-based allocation	Exclusively targeted at LDCs	USD 20 million for the 8th replenishment period
Special Climate Change Fund (SCCF, part of the GEF)	Project-based allocation	Window A reserved for SIDS	Between USD 3 and USD 6 million depending on resources
Green Climate Fund (GCF)	Project-based allocation, board approves project applications based on quality of proposals and quota	Goal of allocating at least 50% to vulnerable countries (SIDS, LDCs and African countries)	None

Table source: GCF (n.d.[27]), About GCF | Green Climate Fund, https://www.greenclimate.fund/about ; GEF (2022[28]), Summary of the Negotiations of the Eighth Replenishment of the GEF Trust Fund, https://www.thegef.org/sites/default/files/documents/2022-06/EN_GEF_C.62_03_Summary%20of%20Negotiations%20of%20the%208th%20Replenishment%20of%20the%20GEF%20Trust%20Fund_.pdf ; GEF (2022[26]), GEF Programming Strategy on Adaptation to Climate Change for the LDCF and the SCCF for the GEF-8 Period of 1 July 2022

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Source: Adaptation Fund (2021[24]), Adaptation Fund Doubles the Amount of Funding Countries Can Access, Enhancing Access to Climate Finance Among Most Vulnerable https://www.adaptation-fund.org/adaptation-fund-doubles-the-amount-of-funding-countries-can-access-enhancing-access-to-climate-finance-among-most-vulnerable/ ; Mori, Rahman and Uddin (2019[25]), Climate Financing Through the Adaptation Fund: What Determines Fund Allocation? https://doi.org/10.1177/1070496519877483 ; Fouad et al. (2021[11]), Unlocking Access to Climate Finance for Pacific Island Countries, https://doi.org/10.5089/9781513594224.087 ; GEF (2022[26]), GEF Programming Strategy on Adaptation to Climate Change for the IDCF and the SCCF for the GEF-8 Period of 1 July 2022 to 30 June 2026 and Operational Improvements, https://www.thegef.org/council-meeting-documents/gef-ldcf-sccf-32-04-rev-01

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Notes

[1] These organisations that are granted the authority to receive and manage climate finance funds on behalf of the international mechanisms and include national and regional agencies, non-governmental organisations, and financial institutions.

[2] This includes multilateral, regional and national climate funds.

[3] Accreditation challenges are analysed in depth in (IMF, 2021[11]).

[4] This figure is the result of analysis by the authors based on websites of the GCF and Adaptation Fund.

[5] Country performance assessment is based on criteria such as macroeconomic management, governance, infrastructure, and performance of the bank's country portfolio. Further details are available at https://www.afdb.org/en/about-us/corporate-information/african-development-fund-adf/adf-country-resources-allocation.

4 Action areas for scaling up current finance sources and unlocking additional finance for adaptation

Building on the data analysis presented in Chapter 2, case studies and interviews, as well as the challenges in financing adaptation analysed in Chapter 3, this chapter identifies possible action areas through which international climate finance providers can increase the volume, accessibility, and effectiveness of finance for adaptation in developing countries. The five recommended action areas are: i) assessing the consistency of forward spending plans with the call to collectively double climate finance for adaptation by 2025; ii) supporting developing countries' efforts to strengthen their capacities, policies and enabling environment for finance for adaptation; iii) strengthening development practices and systems to ensure efficient delivery of adaptation finance; iv) deploying public and blended finance instruments strategically to mobilise private finance for adaptation; and v) exploring and tapping into alternative financing sources and mobilisation instruments for adaptation.

Public finance is a crucial resource for investments in adaptation. This chapter elaborates five key action areas where international providers and other relevant actors can focus their efforts to substantially increase the adaptation finance that they provide, more strategically use it to mobilise additional finance from the private sector, and also facilitate and increase developing countries' access to adaptation finance. Options offered for each of these action areas can contribute to overcoming the barriers identified in Chapter 3. These action areas, which complement and overlap one another, are addressed to international providers of climate finance.

4.1. Action area 1: Assess the consistency of forward spending plans with the call to collectively double climate finance for adaptation by 2025, including in co-ordination with other international providers

Article 9 of the Paris Agreement states that the "provision of scaled-up financial resources should aim to achieve a balance between adaptation and mitigation" (UNFCCC, 2015[1]). The 2021 Glasgow Climate Pact urges developed countries to at least double the provision of climate finance for adaptation by 2025 relative to flows provided in 2019 (UNFCCC, 2021[2]). Consistent with the aims of Article 2.1c of the Paris Agreement, bilateral development finance providers that are members of the OECD DAC committed in 2021 to strengthen the support for climate change adaptation and resilience in developing countries through the DAC Climate Declaration (OECD, 2021[3]).

International providers have acknowledged the importance of funding climate adaptation in their 2016 Roadmap, 2021 Delivery Plan and 2022 update towards this plan (Group of Donor Countries, 2016[4]; Group of Donor Countries, 2021[5]; Group of Donor Countries, 2022[6]). Also in 2021, as part of its Strategy on Adaptation to Climate Change, in 2021 the European Union (EU) pledged EUR 100 million to the Adaptation Fund (European Commission, 2021[7]). The following year during COP27, Denmark, Finland, Germany, Ireland, Slovenia, Sweden, Switzerland, and the Walloon Region of Belgium announced a total of USD 105.6 million in new funding for the Global Environment Facility (GEF) Least Developed Countries Fund and its Special Climate Change Fund. In doing so, the providers stressed the need for even more support targeting immediate adaptation needs of low-lying and low-income states (GEF, 2022[8]). In addition, Italy, Sweden and the Climate Investment Funds have launched the Nature, People and Climate Investment Program to finance initiatives promoting natural resource conservation and climate resilience, and Italy has pledged USD 160 million towards this initiative (Group of Donor Countries, 2022[6]). The United States has launched the President's Emergency Plan for Adaptation and Resilience (PREPARE), which is a whole-of-government effort to help more than half a billion people in developing countries adapt to and manage the impacts of climate change, including by scaling-up adaptation finance six-fold to over USD 3 billion per year by 2024. Some providers are targeting adaptation through climate and nature finance synergies, for example by recognising the importance of nature-based solutions for adaptation.[1] In addition, multilateral institutions have made adaptation-related finance commitments in recent years. Notably, the World Bank Group has committed to increase its direct adaptation climate finance to reach USD 50 billion over 2021-25 (World Bank, 2019[9]), and the AfDB has taken steps to significantly increase the share of its climate finance targeting adaptation (AfDB, 2023[10]).

As these targeted investments suggest, international public finance is a key instrument to enable broader finance flows. Accelerating the deployment of public climate finance for adaptation, notably concessional finance, would have a direct, short-term, and almost immediate impact on levels of adaptation finance provided. Concessional finance for adaptation is also necessary to tap into other potential sources of finance for adaptation. Recognising that each donor has different circumstances and starting points, it is timely for providers to consider their spending plans and investments in adaptation in light of the Glasgow Climate Pact's call to double finance for adaptation.

This action area is foundational to scaling up adaptation finance and mobilising additional adaptation-related climate finance. The four additional action areas discussed in this chapter are complementary in that they can make the deployment of public finance for these purposes easier and more effectively The action areas outlined in following sections include options for providers to expand finance by supporting a strengthened policy and enabling environment in developing countries; capitalising on the overall permanent lending capacity of multilateral and bilateral actors; replenishing soft capital windows to allow the expansion of their operations to lower-income countries and less-profitable sectors; and using resources strategically to unlock private finance for sustainable development at the transaction level.

4.2. Action area 2: Support developing countries' efforts to strengthen their capacities, policies, and enabling environment for finance for adaptation

Improving the enabling environment in developing countries will be critical to expanding and unlocking additional adaptation-specific finance and other finance sources. The Addis Ababa Action Agenda is especially salient in this action area as it establishes that each country has primary responsibility for charting its economic and social development pathway (UN DESA, 2015[11]). While providers thus can support developing countries in improving their enabling environment, developing countries themselves also need to take action in this space.

4.2.1. Support the development of institutional capacity, policies and markets

Developing countries often face a significant capacity challenge that affects their ability to access, attract and absorb climate finance (Nightingale et al., 2019[12]). In their 2020 nationally determined contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC), 113 of 169 developing countries stated that they required capacity development for their national adaptation plans (NAPs) (Pauw et al., 2020[13]). The indicated needs for capacity development exceed the needs for finance and technology in many developing countries' national reports to the UNFCCC (UNFCCC SCF, 2021[14]). In addition to technical assistance and training, capacity development addresses fundamental capacity constraints resulting from limited resources. As noted by (Casado Asensio, Blanquier and Sedemund, 2022[15]), specific capacity needs identified by developing countries include:

- strengthening sectoral, national, and subnational capacities
- integrating adaptation into sectoral planning processes
- mainstreaming climate change and raising awareness among local actors, communities, and the private sector
- developing finance proposals
- supporting NAPs and decision making with regard to the actions to be undertaken, impact assessment, risk and disaster forecasting
- developing co-ordination mechanisms, legislation, policies and action plans
- strengthening national ownership of capacity building to ensure sustainability, including improving the research capacity in climate change
- developing information systems, understanding and managing climate science, information and associated impacts
- contributing to climate negotiations.

Historically, international providers have played a crucial role in supporting developing countries to address these challenges, as illustrated by the initiatives in Table 4.1 (UNFCCC SCF, 2021[14]). From 2018-19, 44% of total climate-related development finance targeted climate-related capacity development activities, an indication of its critical importance to international providers and developing countries (Casado Asensio,

Blanquier and Sedemund, 2022[15]). The international community, including the OECD DAC, increasingly prioritises capacity development in climate change and beyond (Casado Asensio, Blanquier and Sedemund, 2022[15]). Relatedly, strengthening the overall investment environment in developing countries will also have beneficial effects for adaptation. Macroeconomic stability, social cohesion, and the rule of law are considered pre-conditions for sustainable development, lower investors' perceived investment risks and increase their capacity and willingness to invest (in both mitigation and adaptation activities). For adaptation specifically, international providers can support developing country governments in several different areas (OECD, 2015[16])):

- **Increase the availability of climate-related data and services**. Such information can drive capital where it is most needed and ensure impactful investments in adaptation. The World Meteorological Organization, the UN Development Programme (UNDP) and the UN Environment Programme (UNEP) created the Systematic Observations Finance Facility (SOFF) to support least developed countries (LDCs) and small island developing states (SIDS) in collecting, processing and exchanging climate data for effective adaptation efforts and investments (WMO, 2021[17])) (for further details on the case study please refer to case study 1 in Annex A). SOFF further aims to leverage the private sector as both a producer and user of observational data. More broadly, via this greater data access, SOFF can catalyse local private sector investment related to data and help financial institutions better understand seasonal and climate change trends and their impacts on local markets (Tsan et al., 2019[18])). Further capacity in developing countries on climate-related data and services requires a holistic view on statistical ecosystems rather than producing isolated data for individual project applications or monitoring systems (OECD, 2023[19]). Options in this regard include supporting knowledge systems, relying on existing data for project proposals (including local knowledge and unofficial sources), and regional approaches (OECD, 2023[19]).
- **Support the development of policies that can unlock adaptation finance**. By creating economic opportunities and incentives to stimulate adaptation investments, governments can address both supply and demand. On the supply side, these can include creating and implementing robust policy frameworks in key sectors such as agriculture, land use and infrastructure, for instance by requiring that adaptation be considered in critical infrastructure or land use projects (OECD, 2015[20]). Policies can take the form of fiscal incentives to adapt, public utility pricing or subsidies, and tax relief for companies investing in adaptation. Providers can support such reforms through policy-based loans (PBLs) combined with technical assistance. For example, a PBL from the Asian Development Bank (ADB) supports policies for institutionalising climate-resilient agriculture in the Philippines, including the adjustment of rice cultivation calendars and new guidelines for implementing plant breeding innovations (ADB, 2022[21]).
- **Facilitate market creation and expansion by boosting demand and supply for adaptation projects**. This support can include public procurement of climate-resilient solutions, which creates demand and private sector awareness of the potential of such solutions, thus driving markets and competition (OECD, 2021[22])). International providers, in addition to direct financing of climate-resilient solutions, can also conduct eligibility assessments and provide technical assistance and technology demonstration workshops to structure the most appropriate technical solutions for local markets. In Tajikistan, the European Bank for Reconstruction and Development (EBRD), in partnership with the Climate Investment Funds' Pilot Program for Climate Resilience (PPCR) and the United Kingdom government, launched the USD 10 million Climate Resilience Financing Facility to increase access to climate technologies. The facility aims to support local partner banks to provide loans to households and businesses that are investing in climate resilience and also provide these local banks with the technical capacity development to finance climate technologies (EBRD and CIF, 2014[23])). On the supply side, grants or concessional loans for solutions that contribute to adaptation actions and/or support adaptation-related research and development are also important (OECD, 2015[20]) (OECD, 2021[24])). As funding for research tends to be limited in developing countries, international providers can play an especially critical role. The renewable

energy programme of the African Enterprise Challenge Fund, for instance, provides capital and technical support to projects aimed at expanding energy access in sub-Saharan Africa. The programme has received funding from the EU, the Swedish International Development Cooperation Agency, and other international providers (AECF, n.d.[25])).

- **Scale up effective capacity development approaches and assist in establishing effective institutional set-ups to support developing countries' efforts to access and absorb adaptation finance.** Institutional capacities play a vital role in the mobilisation, administration, and efficient use of adaptation finance. Strengthening these capacities in developing countries could help them attract and manage these financial resources more effectively. Such support could involve assistance in establishing national climate funds (see Box 4.1), improving budgetary and fiscal systems to channel climate finance, establishing central focal points for climate finance, or establishing a robust monitoring, reporting, and verification system to track and account for the use of adaptation finance. International providers can play a crucial role in this regard by providing capacity development, e.g., through technical assistance or support for institutional strengthening. An example is the Green Climate Fund (GCF) Readiness and Preparatory Support Programme, which assists countries in developing their institutional capacities to access and manage GCF resources (Green Climate Fund, n.d.[26]). As many existing initiatives support capacity development ad climate finance readiness in developing countries (Table 4.1), providers could focus on streamlining and scaling these programmes rather than creating new ones (OECD, 2023[19]).

Table 4.1. Selected initiatives on capacity development for climate change

Initiative	Main features
UN Institute for Training and Research Climate Change Programme	Offers a range of services such as capacity development for education and training institutions, support for national learning strategies, learning methodology development, and knowledge sharing. It designs and provides innovative e-learning services for individuals, organisations and institutions; It manages the UN Climate Change Learning Partnership and implements projects such as CommonSensing to build climate resilience in SIDS as well as trainings for national stakeholders in the Asia-Pacific region and the Horn of Africa
UN Climate Change Learning Partnership	Online platform that supports countries in achieving climate action by providing learning resources offered by over 30 UN institutions through climate change learning
UN for NAPs	Aims to scale up technical support to LDCs and SIDS; to formulate and implement NAPs; and enable UN and other intergovernmental organisations to respond to technical requests identified by any country that is in the process of formulating or implementing its NAP
UNEP-DTU's Capacity Development for the Clean Development Mechanism Project	Aimed at creating an enabling business and regulatory environment that is conducive for identification, preparation, approval, financing and implementation of clean development mechanism projects in target countries
UNDP's NDC Support Programme	Works with countries to achieve transformational development progress by scaling up action on climate change; supports countries to eliminate barriers to this ambitious transition; currently serves 41 countries directly and works with partners at global and regional level
Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) Capacity Building and Finance for Local Action on Climate and Biodiversity	Provides funding for small organisations to raise levels of awareness and engagement in relation to climate and biodiversity issues and to promote wider social involvement in the corresponding change processes in recipient countries
Japan International Cooperation Agency (JICA) Project for Capacity Building on Climate Resilience in the Pacific	Aims to provide a base in the region for strengthening countermeasures against climate change and disaster risk and train human resources; provided technical co-operation over 2019-22 to enhance training capacities of the Pacific Climate Change Centre
NDC Partnership	Provides technical support to 50 developing countries to achieve ambitious climate goals in the context of sustainable development
UNDP's Global Climate Promise Initiative	Aims to support over 110 countries in enhancing, designing and submitting their NDCs with raised ambitions, including five service lines of Climate Promise supporting activities to enhance the NDCs
OECD's Green Action Task Force	Has worked for 25 years on environmental issues (including climate change and sustainable energy) in Eastern Europe, Caucasus and Central Asian countries, providing capacity development efforts for climate action.

Source: Casado Asensio, Blaquier and Sedemund (2022[27]), "Strengthening capacity for climate action in developing countries: Overview and recommendations", https://doi.org/10.1787/0481c16a-en.

Box 4.1. The role of National Climate Funds in accessing adaptation finance: The Rwanda Green Fund (FONERWA)

National Climate Funds

National climate funds are country-specific financing mechanisms for climate change mitigation and adaptation efforts. They mobilise resources through domestic and international sources, public-private partnerships, and private sector investments and channel funds from multilateral organisations and other institutions. By tailoring financial support to a country's needs, national climate funds promote country ownership and alignment with national strategies and, enhance climate finance coherence. Best practices to maximise benefits include strong governance, alignment with national strategies, stakeholder engagement, partnerships with international providers, and innovative financing instruments (Flynn, 2011[28]).

The Rwanda Green Fund's approach

The Rwanda Green Fund is a national climate fund that has managed to facilitate the country's direct access to international climate finance. The fund was established in 2010 as the first national climate fund in Africa and has been fully operational since 2017. Its objective is to streamline and rationalise external aid and domestic finance. Rwandan government ministries and agencies, districts, and civil society organisations (CSOs) including academic institutions and the private sector can access financing from the Rwanda Green Fund, whose investment products include grants, innovation investments and credit lines.

In the public sector, institutions identify climate finance products and submit full project proposals to the fund, which then uses its specific expertise to submit project proposals – to multilateral climate funds, multilateral development banks (MDBs) and bilateral providers – and to secure funding. In the private sector, the Fund works through a joint facility with the Development Bank of Rwanda whereby the Development Bank hosts a credit line, and the fund hosts an incubator and project preparation facility. The fund is the focal institution for climate finance in Rwanda, but ministries and other institutions may also submit projects to providers themselves. The fund adds value mainly through its specific expertise in planning climate finance projects and writing funding proposals, enabling smaller institutions to access climate finance and channelling climate finance to the local level.

The Rwanda Green Fund historically worked on the base of individual projects but is currently moving into country-led programmatic approaches. While the government leads the programming process with regard to setting priorities and identifying necessary actions, the fund structures the programme, breaks it down into sub-projects and engages with providers to secure funding for these projects.

Source: Flynn (Flynn, 2011[28]), Blending Climate Finance Through National Climate Funds: A Guidebook for the Design and Establishment of National Funds to Achieve Climate Change Priorities, https://www.undp.org/laopdr/publications/blending-climate-finance-through-national-climate-funds.

4.2.2. Enhance the role of local governments and communities in delivering and implementing adaptation action

Enabling more direct access to financing for local actors could increase the absorptive capacity for adaptation financing in recipient countries, especially given that many adaptation needs are specific to local contexts. Local actors are well placed to implement effective adaptation measures due to their more nuanced understanding of specific climate hazards, causes of vulnerabilities and local responses to past climate-related events (OECD, 2021[22]). Not all adaptation projects can or should be locally led, especially

those addressing framework conditions, policies, or larger infrastructure investments. At the same time, for specific areas, locally-led adaptation has the potential to make better use of local knowledge and coping mechanisms (Westoby et al., 2021[29]; IIED, 2021[30]). In the long term, local ownership and embedment in local institutions have the potential to ensure sustainability of interventions after the funding ends (McNamara et al., 2020[31]). Local climate action can also better deal with issues of gender inequality and social exclusion (OECD, 2021[22]). However, the data on delivery channels (Chapter 2) and interviews conducted for this report suggest that national governments of recipient countries are the primary and often only point of contact for bilateral and multilateral providers. Direct contact with local actors is rare. Communities, local actors, small CSOs and small businesses have no direct access to many sources of adaptation finance or access is limited by local actors' financial, technical, or human resource constraints (OECD, 2021[22]).

Providers could consider the following actions to enhance the role of local governments and communities in delivering and implementing adaptation action:

- **Support multi-level co-ordination for climate resilience.** Multi-level co-ordination within developing countries is important both to align local adaptation with national strategies and to ensure that local realities feed into national adaptation policies (OECD, 2021[22]). Providers can support multi-level co-ordination by supporting existing government initiatives in decentralisation, design technical assistance programmes specifically for already well-established local institutional arrangements or provide support for knowledge management systems based on both local knowledge and scientific data (OECD, 2021[22]). For example, the European Union and the United Kingdom supported the process of drafting local adaptation plans for action in Nepal, linked to the National Adaptation Programme for Action to help bridge the gap between central planning and local priorities (Regmi, Star and Leal Filho, 2016[32]).
- **Support the climate finance readiness of local actors.** Providers could provide dedicated capacity development and climate finance readiness support to local actors to enhance their ability to access climate finance. The ADB Community Resilience Partnership Program, for example, aims to scale up adaptation finance to communities and is operationalised through a multi-donor trust fund that finances capacity development, project preparation and small proof-of-concept investment projects (ADB, 2021[33]). The program seeks to enable communities to receive large-scale public finance for community-led projects at the nexus of climate, gender, and poverty, for example in adaptative social protection or training for climate-resilient skill development. Providers of readiness support and capacity development for adaptation could join forces to address gaps in reaching local actors and scale up existing programmes targeted at local actors (OECD, 2023[19]).
- **Establish small grant facilities that are directly accessible to local actors.** The German International Climate Initiative has established the IKI Small Grants facility, which issues calls for proposals from local and regional organisations for project sizes ranging from about EUR 60 000 to EUR 200 000 (GIZ, n.d.[34]). The facility selects organisations in a one-step process and supports them through dedicated capacity development. The Adaptation Fund (2021[35]) has launched a similar initiative. Such small grant facilities have the potential to reduce the number of intermediaries in project implementation, strengthen project ownership in local communities and fund projects that would otherwise not fit the funding criteria of large providers. One drawback of the small grants and open call model is that the review process could be more demanding for providers than the review for larger project sizes. Another is that providing local organisations direct access to finance could favour local organisations with high existing institutional capacity, with the risk that some of the most vulnerable communities could be sidelined.
- **Support national climate funds to channel finance to the local level and support subnational adaptation funds**. National climate funds can serve as intermediaries between communities and funders. The Rwanda Green Fund, for example, provides the expertise to draft applications to multilateral climate funds based on project ideas received from local actors (Box 4.1). Similarly,

subnational adaptation funds serve to channel adaptation finance to subnational governments and are typically managed by elected local authorities with a high level of accountability to local communities (OECD, 2021[36]). Kenya, Mali, Senegal, and Tanzania have already introduced subnational climate adaptation funds under the devolved climate finance approach (LIFE-AR, 2019[37]). Bilateral and multilateral providers may provide finance to these subnational funds directly or fund intermediary mechanisms such as national climate funds with the purpose of channelling finance to subnational funds.

- **Fund adaptation action by civil society actors in developing countries**. Providers can act to increase the funding provided directly to CSOs in developing countries, thus localising adaptation finance. A recently published OECD toolkit for enabling civil society recommends that providers set funding targets for civil society, dedicate staff capacity to funding civil society and use multi-year funding to enable predictability (OECD, 2023[38]). Given the need for localised adaptation action, these recommendations could be relevant to adaptation finance as well. Civil society actors could directly implement local projects, for example in rural development, but might be most useful as intermediaries channelling adaptation finance from providers to local communities, thus reducing the number of counterparties for international providers (IIED, 2021[39]). For example, the Mesoamerican Territorial Fund (Fondo Territorial Mesoamericano), managed by the Indigenous Mesoamerican Alliance of Peoples and Forests (Alianza Mesoamericana Pueblos y Bosques) extends small grants directly to local communities and Indigenous peoples for projects in nature protection and social inclusion (AMPB, 2020[40]).
- **Work with microfinance institutions to help small businesses adapt.** To reach small businesses and smallholder farmers, providers can work with microfinance institutions, for example by providing guarantees and thematic credit lines or insuring their portfolios against climate risk (case study 2 in Annex A). Microfinance institutions are suitable vehicles to scale up adaptation finance to local actors as they often have experience working with development finance providers and have pre-existing networks with small businesses, smallholder farmers and the poor (Agrawala and Carraro, 2010[41]). For example, the PPCR and the Inter-American Development Bank (IDB) supported a private sector cooperative mutual bank in Jamaica to extend small loans to micro, small- and medium-sized enterprises (MSMEs) in the agriculture and tourism sectors for projects aimed at helping these businesses adapt to climate change (Climate Investment Funds, 2018[42]). The partner bank was chosen for its network in rural communities and helped reach small businesses in sectors highly vulnerable to climate change.
- **Shift from community-based to locally led adaptation**. Momentum is building to shift from community-based to locally led adaptation, evidenced by the broad endorsement of the International Institute for Environment and Development (IIED) Principles for Locally Led Adaptation.[2] Community-based adaptation projects, focused on the communities most vulnerable to climate change and using principles of bottom-up and participatory adaptation, became popular among providers and implementers in the 2010s (Westoby et al., 2020[43]; Kirkby, Williams and Huq, 2017[44]). But evaluations found that while such projects led to greater consideration of communities' needs and capacities, they may have failed to result in a shift of decision-making power from implementers to local actors (McNamara et al., 2020[45]; Westoby et al., 2020[43]). Funding managers do not sufficiently consider local knowledge, strengths, assets and contexts and often spend only limited time with the targeted communities, leading to unsustainable projects or low uptake of proposed technical solutions (Westoby et al., 2020[43]). The IIED principles call for greater local ownership and a shift in the management of adaptation projects to the local level (IIED, 2021[39]). Providers that endorse the principles could identify projects or sectors where the principles can be implemented and where they could gain operational experience in shifting decision-making power to local actors while also working to improve the climate finance readiness of local actors.

4.2.3. Support developing countries to prepare adaptation project pipelines.

There is a significant need to support developing countries to identify and develop adaptation projects that meet the requirements of international providers and can attract private sector investors. A noticeable gap exists in developing countries concerning project pipelines, resulting in a deficiency of funding proposals. This leads to a lack of demand in the form of funding proposals. A top priority identified by developing countries in their NAPs is building capacity for adaptation finance readiness, in particular regarding climate finance management structures, writing project proposals, and monitoring and evaluation. Many specifically point to the GCF Readiness and Preparatory Support Programme as a model.

While providers already offer considerable support to developing countries in terms of general capacity development, adaptation planning and feasibility studies, among others, they could consider using capacity development more strategically to help countries identify adaptation projects that align with national development priorities. Options to better support development of adaptation projects include:

- **Leverage providers' unique competitive strengths and expertise to deliver targeted capacity development**. JICA exemplifies this approach in its disaster risk reduction (DRR) projects, drawing on Japan's extensive technical know-how. JICA begins its engagement in vulnerable developing countries by offering specialised training with local engineers, dubbed knowledge co-creation programmes, to address specific adaptation goals such as flood prevention. Once participants complete the training, they are encouraged to work with their government to craft project proposals that JICA will ultimately support financially. Typically, these projects first receive small grant financing before evolving into more comprehensive infrastructure projects. As they progress, the projects may be scaled up with the help of external funds, for example from the GCF, that further expand their scope and impact.
- **Target support for adaptation planning towards identification of projects**. Common adaptation planning tools such as NAPs and NDCs vary significantly in terms of the level of detail, and many fall short of identifying investable project pipelines (Chapter 3). Providers could specifically focus their support for NAP processes on helping the stakeholders identify potential projects and financing strategies. The GCF is particularly active in this area, having approved 69 requests for NAP support totally USD 162 million. Together with its implementing partners, the GCF could leverage this support to also help developing countries prepare project pipelines. Recipient countries have noted they have difficulty complying with complex and fast-changing NAP guidelines and have called for NAP processes to allow more flexibility. In some cases, delays in the NAP process meant that originally identified pilot programmes became outdated but could not be changed retrospectively. Based on these experiences, there is a case for providers of NAP support to streamline technical requirements and allow countries greater flexibility in setting priorities for planning while encouraging countries in the NAP process to become as concrete and detailed as possible in terms of projects. International providers also could facilitate peer-to-peer learning and exchange among developing country governments on climate change and adaptation. An example is the One UN Climate Change Learning Partnership, a joint initiative of over 30 multilateral organisations that support countries to achieve climate change actions via online learning resources (UN CC:e-Learn, n.d.[46]).

To facilitate the preparation of project proposals in developing countries, providers also could consider harmonising funding requirements, as previously discussed, and exploring different modalities for the delivery of adaptation finance, especially policy-based finance (PBF) and programmatic approaches (further explored in sections 4.3.2 and 4.3.3). Additional options that providers could take to help develop adaptation project pipelines in developing countries include:

- **Allow for more flexibility in defining adaptation projects**. There is currently no shared understanding of what constitutes an adaptation project. In interviews for this report, representatives of several developing countries mentioned disagreements with providers on the

nature of adaptation projects, for example regarding large infrastructure investments. At the same time, while some current development projects contribute broadly to adaptation, they are not identified as adaptation projects. Allowing for greater flexibility in the definition of adaptation projects and enabling developing countries to more freely determine which investments they consider as contributing to their resilience could facilitate planning processes and lead to more project proposals for adaptation finance.

- **Work with developing countries upstream to identify development projects with a potential for adaptation**. Providers could help recipient countries identify more adaptation projects by engaging them in a dialogue – upstream in the planning process of development projects – about adding an adaptation component to projects planned with other objectives. Especially in contexts where adaptation is not high on the political agenda, providers can add value by identifying resilience aspects of projects. The IDB has used such an approach to scale up its climate finance. Where countries propose construction of specific infrastructure, for example, the IDB not only provides expertise in terms of climate-resilient planning but also discusses with the country the possibility of adding a vulnerability assessment. Alongside, the IDB also offers capacity development and support for more holistic adaptation planning with the aim to replicate such efforts within countries' own resources.

4.2.4. Facilitate private sector capacity to seek and access finance for adaptation-relevant investments

Beyond its role as a potential additional source of finance for adaptation, the private sector can play a central role in scaling climate change adaptation efforts.[3] Private sector enterprises will engage in adapting their operations (even if they do not view it as adaptation) to sustain profitable operations. Such strategic modifications could aim to bolster resilience, for instance changes in agricultural practice such as crop variety transitions or protective measures for production lines against climate volatility. Enterprises also could prioritise enabling adaptation activities such as investing in the development of early warning systems or weather forecasting technologies to lessen the impacts of climatic events (European Commission, 2021[47]; Mullan and Ranger, 2022[48]).

Businesses capacity to plan for and respond to climate impacts hinges on their access to pertinent information, awareness of potential impacts, ability to adapt, and financial capability to adjust their investments into adaptation. To align their operations and processes with climate change (e.g. via a new adapted product line, purchase of additional material, etc.), enterprises may use their internal allocation of resources before tapping into additional, external financial resources. For instance, a private enterprise could use already existing revolving credit lines or use retrained earnings/equity resources to support adaptation. With sufficient internal resources, the enterprise is unlikely to issue a new bond, apply for a new loan, or raise additional equity for adapting its own operations.[4] At the same time, if external finance is necessary but unavailable, businesses may forgo adaptation due to financial constraints.[5]

A vast body of evidence across different regions and sectors establishes that lack of access to finance as a key constraint to MSME growth and a key service input for private sector productivity (Arnold, Mattoo and Narciso, 2006[49]; Beck and Demirguc-Kunt, 2006[50]) and hence more specifically also to adaptation activities enabling further growth in a changing enabling environment (see also (OECD, 2021[22]). At the same time, it remains a challenge for informal MSMEs to access finance, whether for climate-related purposes or not (Casado Asensio, 2021[51]).

Considering these barriers, governments and development co-operation and development finance providers can play a key role in fostering adaptation action in the private sector by ensuring that enterprises can access climate finance. Some options are as follows:

- **Support financial institutions and facilities make debt finance more available to businesses that lack sufficient internally available funds to invest in and adapt to climate change.**

Equipping local financial institutions (LFIs) with the means, technical capacity and/or risk backing to take up lending operations is a well-established way to increase access to finance for small- and medium-sized enterprises (SMEs) that are unable to access debt finance because of their (small) size, (new or innovative) business models, or (unfamiliar) sectors. International providers, development finance institutions (DFIs) and other development co-operation actors offer liquidity facilities that increase the funds available to LFIs for on-lending for (adaptation) activities (OECD, 2021[24]), (OECD, 2021[52]); risk-sharing facilities that decrease the burden of risk for LFIs of new and unknown operations (OECD, 2021[53]); and technical assistance that helps LFIs establish operational and risk-related credit processes (Figure 4.1). For example, Proparco is providing finance to Banco Aliado of Panama, which engages in lending operations with SMEs focused on energy efficiency and renewable energy – enterprises that previously had no access to finance (Proparco - Groupe Agence Française de Développement, n.d.[54]). Similarly, the Agence Française de Développement (AFD) is supporting Credit Agricole of Morocco to increase access to finance for sustainable agriculture that is adapted to climate change (Le Matin, 2020[55]).

Figure 4.1. How liquidity facilities can boost access to finance for end borrowers

Source: OECD (2020[56]) DAC methodologies for measuring the amounts mobilised from the private sector by official development finance interventions, https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/DAC-Methodologies-on-Mobilisation.pdf

- **Support capacity of LFIs in climate-related risk management,** which can ultimately increase their exposure to borrowers that have adapted to climate change. The Asia-Pacific Climate Finance Fund, set up by the ADB and backed several international providers, is one example. It offers capacity development in the form of grants to both sovereign and non-sovereign financial intermediaries such as guarantee providers, financial institutions and reinsurers, thus enabling them to adjust their financial risk management approaches to accommodate the adoption and financing of climate technologies (case study 2 in Annex A). This support helps financial intermediaries adapt to the impacts of climate change, for instance by increasing insurance for microfinance institutions, and support adaptation of their clients by providing access to finance for investments for climate adaptation and resilience.
- **Support development of tailored financial instruments for adaptation.** By favouring and scaling well-adapted activities over activities that are not well adapted and therefore are less sustainable (and profitable), providers could potentially reward and hence financially incentivise adaptation efforts with lower cost of capital. The Development Bank of Japan's business continuity management (BCM) loan programme, for example assesses and rates corporations on their disaster prevention, business continuity and crisis management measures as part of the due diligence process for lending (case study 6 in Annex A). Borrowers with good ratings can access finance at preferential interest rates. Designed largely to encourage DRR given the risk of seismic activity in Japan, this approach also addresses climate change adaptation efforts, for example in

the form of flood risk reduction. A similar programme is in place for SMEs whereby the Japanese Ministry of Economy, Trade and Industry conducts the adaptation assessment and facilitates accredited (i.e., adapted) SMEs to access finance from local public development banks. From a provider of finance perspective loans to adapted activities carry less potential for default due to climate change-related disasters and thus can be distributed at a lower risk-return profile.

- **Support the development of business models for adaptation goods and services and for developing products and services that enable adaptation**. For example, the IDB, GEF and other providers provide grants to support the Adaptation SME Accelerator Project, which is run by the private sector firm Lightsmith Group (case study 3 in Annex A). The project aims to support selected SMEs in their effort to scale their adaptation services in developing countries, for example with respect to water management products, provision of weather data and food waste management.

4.3. Strengthen development practices and systems to ensure efficient delivery of adaptation finance

There are opportunities to improve the delivery of finance for adaptation and support the mainstreaming of adaptation into development assistance. International development and climate finance providers have a range of concrete actions and options available to enhance delivery and support.

4.3.1. Set internal quantitative targets for adaptation finance

Establishing internal targets for the allocation of development and climate finance towards adaptation activities can help guide and incentivise providers' boards and governments in their decision-making processes. Setting targets allows providers to more effectively allocate resources to achieve a balanced distribution of climate finance for both short-term resource allocation and long-term strategic planning while also taking into account the needs of developing countries. By encouraging providers to incorporate and mainstream adaptation considerations into development projects that may not initially have a primary climate-related objective, internal targets additionally enhance the overall impact of climate finance.

When setting internal targets for adaptation finance, providers should carefully consider implementation strategies to ensure that (a) the targets have a degree of flexibility so that providers can continue to meet funding requests from developing countries and (b) the targets are combined with robust mechanisms to ensure the quality of adaptation projects. At the same time, quantitative targets for adaptation finance are particularly relevant for providers with extensive portfolios of development and climate-related projects. But such targets may be less relevant for institutions with a clear competitive advantage in a specific climate objective such as the International Fund for Agricultural Development, which primarily focuses on adaptation in the agricultural sector.

The implementation of quantitative adaptation targets can vary across providers depending on their institutional and governance structures. Options that providers can consider include:

- **Set organisation-wide targets expressed in relative terms.** For centralised institutions such as multilateral climate funds, organisation-wide targets (e.g., a 50:50 balance between mitigation and adaptation) offer a unified strategy for allocating adaptation finance, simplify decision-making processes and foster consistent funding approval decisions. However, such targets may not suit decentralised organisations or bilateral providers without national development banks and could result in a top-down approach that does not fully consider individual departments' unique advantages and expertise.
- **Set department-specific absolute targets for decentralised institutions.** Department-specific targets enable a tailored approach to allocating adaptation finance, allowing departments with

unique competitive advantages to operate within specific climate objectives. This approach prevents biased behaviour in favour of adaptation-related projects but requires careful co-ordination and communication between departments to ensure overall organisational objectives are met. It could also lead to inconsistent decision-making processes and funding approval across the organisation.

- **Strengthen specific funding windows or dedicated funds for adaptation.** Specific funding windows and dedicated funds for adaptation ensure focused resource allocation while maintaining a balance with mitigation and other development objectives. Dedicated funding windows enhance transparency, accountability, and visibility of adaptation efforts. To avoid additional administrative effort and further complicating adaptation finance architecture, providers could consider providing existing structures with additional funding rather than establishing new initiatives. While working with specific funding windows and dedicated funds, providers could also try to maintain some flexibility to respond to changing priorities or emerging needs in the climate finance landscape.
- **Integrate adaptation into results frameworks.** As a step towards mainstreaming adaptation considerations in all development activities, providers could include climate-sensitive outputs and climate-related indicators and baselines throughout the results framework of projects (OECD, 2023[57]) Due to the context-specific nature of adaptation, such results frameworks need to be based on context analysis and stakeholder consultations. They should also maintain flexibility to adapt to changing scenarios and consider longer-term climate impacts. In addition, providers could consider aligning adaptation-related results frameworks with national results frameworks and UNFCCC processes. In practice, this could mean using indicators that can account for climate adaptation. The OECD (2023[58]) toolkit, Effective Results Frameworks for Sustainable Development, provides detailed guidance and best practices.

4.1.1. Consider windows or minimum levels of funding for the most vulnerable countries

Targets for geographical allocation of adaptation finance can ensure that the poorest and most vulnerable countries are reached. The following concrete options can be considered to ensure a more balanced allocation of adaptation finance across different countries:

- **Apply graduated country caps.** Graduated country caps allow the specific needs and absorptive capacities of recipient nations to be considered in allocating adaptation finance. This approach recognises that the scale and urgency of adaptation needs vary across countries. A potential drawback to this option is that determining appropriate cap levels for each country adds to the complexity and may lead to delays in funding allocation and disbursement.
- **Set levels of funding for vulnerable countries:** Establishing minimum floors or dedicated funding windows for the most vulnerable countries, such as LDCs and SIDS, guarantees a certain level of finance allocation to address their adaptation needs. This approach ensures these countries receive predictable and stable funding, enhancing their ability to plan and implement adaptation measures. However, it may also create challenges in balancing the allocation of resources among other recipient countries and could inadvertently divert funds from other critical areas.
- **Establish vulnerability-based allocation or access criteria.** Such criteria ensure that resources are directed towards countries with the most pressing adaptation needs. Another option could be to tailor access criteria to the needs and specific circumstances of vulnerable groups such as SIDS or LDCs. The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, for example, suggests that relevant stakeholders create a dedicated envelope for SIDS under the GCF's Enhanced Access framework with flexible funding criteria (United Nations and Climate Finance Access Network, 2022[59]). However, determining which countries are most vulnerable can be contentious and may

lead to disagreements among providers and recipients. Given the diverse nature of climate impacts, universally accepted criteria for vulnerability may be hard to establish. Of relevance in this context is the ongoing UN work to develop and implement a Multidimensional Vulnerability Index, which could help provide guidance on the direction of adaptation finance towards the most vulnerable countries (UN, 2023[60]).

- **Promote co-ordination to foster balanced allocation of adaptation finance**. A key enabler of more equitable access to adaptation finance is tailored capacity development to address disparities in individual, institutional and systemic capacity and improve the overall quality of project proposals. To ensure a balanced allocation of adaptation finance, it is advisable to promote co-ordination across countries. As shareholders of MDBs and climate funds, providers could work together to strengthen existing funds and funding windows with explicit minimum floors designated for countries that currently receive limited financial support. Doing so would particularly benefit vulnerable countries such as SIDS, LDCs, and remote countries that lack strong historical or trade ties with providers and that may otherwise be overlooked.

4.3.2. Move from project-based adaptation to programmatic approaches

To foster the development of impactful adaptation project pipelines, providers could engage with developing countries to increase the use of programmatic approaches. Unlike one-off project interventions, programmatic approaches embed a set of smaller and often interlinked projects within multi-year programmes at regional, country, or sectoral level that are aligned with national strategies and priorities. The result is that programmes then include several aligned projects with common objectives and interlinkages. Financing is provided over longer periods and is more predictable. As adaptation is a continuous process that should ideally be planned in long-term strategies, as they are in NAPs, it requires consistent and reliable funding over several years (Anderson, Huq and Mitchell, 2008[61]). By providing reliable funding, encouraging long-term planning and building longer-term partnerships between providers and recipients, programmatic approaches can lead to better buy-in by national governments and develop local capacities for planning impactful projects under multi-year programmes (United Nations and Climate Finance Access Network, 2022[59]). Programmatic approaches can also increase the effectiveness of adaptation finance as they help providers approach adaptation in a more integrated, holistic and cross-sectoral manner (United Nations and Climate Finance Access Network, 2022[59]).

An evaluation of the PPCR's programmatic approach, for instance, found that it contributed to improved institutional readiness and policy change (CIF, 2018[62]). Specifically, in the planning phase of projects, the programmatic approach together with the reliability of funding led to coordinated, first-mover projects, which proved particularly helpful in countries where adaptation planning was just starting (CIF, 2018[63]). The evaluation also noted that many countries that had a programmatic approach to planning reverted to a project-based approach in the implementation of sub-projects of the programme, but that countries that continued programmatic approaches achieved better outcomes than the former (CIF, 2018[63]). Where it was sustained, the programmatic approach led to more flexibility in the implementation of projects, as it allowed countries to re-allocate resources to other projects, when priorities or contexts changed (CIF, 2018[62])).

As the PPCR example demonstrates, programmatic approaches can contribute both to scale-up, especially in countries where adaptation finance is at low levels, and to enhanced effectiveness. Providers of adaptation finance could take the following actions to encourage programmatic approaches:

- **Support the adaptation planning process**. Extensive stocktaking, planning, and consultation of stakeholders are needed to establish the right programmatic approach to adaptation, determine priority sectors and define sub-actions under the programme. The NAP process presents an opportunity to undertake some of these steps but should be more directly linked to programmes for adaptation. The UNFCCC Adaptation Committee calls for additional guidance and support for

developing countries to develop adaptation programmes (UNFCCC, Adaptation Committee, 2022[64]). These can be integrated in existing instruments, especially the GCF readiness support, that then could be used more strategically to support the planning of adaptation in the form of programmatic approaches instead of isolated projects.

- **Ensure country ownership in programming.** Providers could initiate the use of programmatic approaches through their funding practices, which would be particularly useful in cross-country programmes. However, domestic actors should ultimately own programmatic approaches on a country level with providers coming in to provide targeted technical support and fund sub-projects under the programme (United Nations and Climate Finance Access Network, 2022[59]). To enable developing countries to lead the programming, providers could support the establishment and use of national climate funds or other focal points. For example, the Rwanda Green Fund, as outlined in Box 4.1, takes the lead in co-ordinating and structuring programmatic approaches in Rwanda and then engages in dialogues with providers on where they can contribute to sub-projects. The United Kingdom provided technical assistance to support operationalisation of the fund (CIDT, n.d.[65]).
- **Commit reliable funding to programmatic approaches**. Providers should consider committing reliable finance to programmatic approaches at early stages. This would allow recipient countries to move ahead with programmatic planning with some clarity about whether sub-projects are likely to receive funding. Once a programme is in an implementation phase, providers should allow for flexibility in the use of funding for sub-projects to enable countries to reprogram if necessary. Programmatic approaches could also entail mixing project finance with budgetary support, for example in the form of PBF, to also give countries more flexibility in implementing the programme. The PPCR's programmatic approach combines a country-level investment plan with a predictable funding envelope, allowing for some flexibility in terms of particular projects to be implemented.
- **Explore the use of country platforms for adaptation** Country platforms could be established to bundle programming support from providers and recipients and co-finance projects. Country platforms in climate finance have so far exclusively focused on mitigation (Box 4.2) but have advantages that can apply to adaptation finance as well, especially for some of the countries with the greatest adaptation needs. Key elements of mitigation country platforms that could be used for adaptation platforms include building on existing planning tools, working towards concrete goals, ensuring high-level political commitment, bringing together different types of international providers and modalities of adaptation finance, and using public money strategically to mobilise private finance (Hadley et al., 2022[66]) Country platforms for adaptation will therefore be most suitable for countries with comprehensive existing planning tools, identified adaptation objectives and high political attention on adaptation. These conditions may be present in some of the most physically vulnerable countries such as SIDS. While the developing country government should lead any process to establish a climate platform by, providers can promote the concept by providing advice to governments, committing funding to nascent platforms and strengthening existing co-ordination mechanisms.

Box 4.2. How country platforms work in mitigation finance: The Just Energy Transition Partnerships

Country platforms are understood as government-led partnerships to align international finance with national and international goals in developing countries (ODI, 2022[67]), serving as a single focal point to channel and co-ordinate technical assistance and international finance (public and private) towards a common goal (Carney, 2021[68]). In the context of scaling up climate finance through programmatic approaches, they have gained popularity in recent years as a means of overcoming the persistent challenge of co-ordination between international providers and recipients. Inclusive, meaningful multi-stakeholder dialogues are important in the establishment of country platforms, which typically combine a high-level political agreement between a developing country and a group of providers, a significant package of concessional resources, and a co-ordination structure (Hadley et al., 2022[66]). By co-ordinating all actors involved in climate finance in a country, these platforms help overcome the fragmentation of climate finance into one-off project interventions (Hadley et al., 2022[66]). Country platforms also aim to mobilise large-scale private finance by improving the co-ordination between the private sector and local governments, addressing barriers to private investment, and packaging projects for private investors (Hadley et al., 2022[66]).

Country platforms in climate finance are focused on mitigation, though providers could consider adapting the concept to adaptation finance. A prominent example of a country platform for mitigation finance is the Just Energy Transition Partnership (JETP) between South Africa and the International Partners Group (IPG), comprised of EU, France, Germany, the United Kingdom and the United States. The partnership was launched at COP21 to help achieve South Africa's NDC by reducing annual greenhouse gas (GHG) emissions to between 420 and 350 megatons of CO_2 equivalent until 2030 while enabling a just transition. The JETP benefits from high political attention from all partners, as demonstrated in the initial IPG commitment of USD 8.5 billion for 2023-27 and the establishment of a Presidential Climate Finance Task Team and related inter-ministerial committee in South Africa. The investment plan for the initial 2023-27, published in 2022, builds on existing country-led planning tools, particularly the NDC and a Just Transition Framework adopted by the South Africa cabinet. This plan focuses on three investment sectors as well as cross-cutting investments in skills development and municipal capacity development aimed at the local level. Similarly, the initial IPG pledges focus on capacity development, investment projects and policy-based budget support. As investment needs for the just transition far exceed the initial IPG pledges, there is an emphasis on using these pledges strategically to catalyse additional public and private money at scale. Public money is used primarily to invest in state-owned infrastructure such as transition grids to enable private investments in renewable energy generation. In addition, grant funding is used to support capacity development and just transition investments in communities affected by coal phase-out.

Following the example of the JETP with South Africa, the Group of Seven (G7) has worked to establish JETPs with other countries that have urgently need renewable energy expansion and phase-out of fossil fuels, and in 2022 and 2023, JETPs have been established with Indonesia, Senegal and Viet Nam.

Source: Hadley (2022[67]), "Country platforms" for bold climate action?, Source: (The Presidency, Republic of South Africa, 2022[69])Source: Hadley (2022[67]), "Country platforms" for bold climate action?, https://odi.org/en/insights/country-platforms-for-bold-climate-action/ ; Hadley et al. (2022[66]), Country platforms for climate action: Something borrowed, something new?, https://cdn.odi.org/media/documents/ODI_Emerging_analysis_Country_platforms_for_climate_action.pdf ; The Presidency, Republic of South Africa (2022[69]), South Africa's Just Energy Transition Investment Plan (JET IP), https://www.thepresidency.gov.za/content/south-africa%27s-just-energy-transition-investment-plan-jet-ip-2023-2027

4.3.3. Increase the use of policy-based climate finance for adaptation

The concept of programmatic approaches and country platforms entails combining technical assistance, investment projects and policy reforms. Budget support to support broad programmes and policy reforms can be an important element in such approaches and could increase donor co-ordination (Hadley et al., 2022[70]). However, there are only a few examples of PBF in adaptation finance, and sectoral budget support represented only 6.9% of adaptation-related development finance from 2016-20.[6] While this is more than the 3.5% of overall development finance channelled through budget support over the same period, there remains untapped potential to use PBF and budget support to build enabling environments for climate resilience (Fardoust et al., 2023[71]).

PBF is development finance channelled as unearmarked budget support that is disbursed once the recipient undertakes an agreed-upon set of policy reforms (IDB, 2018[72]). In adaptation specifically, PBF could address the need for sectoral planning and for establishing better enabling environments and framework conditions for adaptation. As such, PBF can be used strategically to complement project-type interventions and increase their effectiveness, for example within programmatic approaches. Adaptation PBF can be sectoral – for example, addressing reforms in the water sector – or take holistic approaches with policy reforms towards adaptation in all sectors. Adaptation can also be mainstreamed into PBF with other principal objectives or implemented as part of cross-cutting climate PBF (Neunuebel et al., 2023[73]). Importantly, PBF can help developing countries establish the right enabling conditions to unlock additional adaptation finance, for example by supporting the establishment of dedicated planning institutions, the adoption of sector strategies or the mainstreaming of adaptation in budgeting processes. By providing recipient governments more flexibility in the use of finance, PBF can increase ownership and recipient control over the use of funds and reduce transaction costs (Horstmann, Leiderer and Scholz, 2009[74]; Grittner, 2013[75]). These advantages come into play especially when PBF is based on systematic, locally owned planning and embedded in a programmatic approach.

PBF may not be suitable for all recipient countries, however. PBF in other development finance is mainly used in middle-income countries with strong public financial management systems as the provision of unearmarked budget support requires a certain level of trust in the country systems from a providers' perspective (Fardoust et al., 2023[71]). PBF is also typically delivered as policy-based loans (PBLs), which makes it also an unsuitable instrument for highly indebted countries. Policy-based grants can be an alternative but are currently offered by very few providers.

Furthermore, as PBF is delivered as general budgetary support line, ministries relevant to adaptation (e.g., rural development, health, environment) may not have an incentive to request PBF instead of earmarked project finance. PBF has therefore primarily been implemented with ministries of finance, which has led to a certain bias in their content for public financial management reforms. To scale up adaptation-related PBF, it is important for providers to consider such dynamics in recipient country governments and create incentives for line ministries to engage. Providers could consider the following models for the use of PBF for adaptation:

- **Link adaptation PBF to support of sectoral planning and strategic policy actions for adaptation**. Many providers provide support to recipient country governments in the form of technical assistance for planning processes, development of adaptation strategies and capacity development, which often implies contributing to legislative reform agendas. PBF can support the implementation of these reforms, for example policy set-ups outlined in NAPs. Reforms in a PBF should be ambitious but realistic, and the provider should engage in strategic policy dialogue with the recipient beyond individual projects (AFD, 2019[76]). PBF is often delivered in multiple phases starting with support for less contentious change and gradually increasing to support more ambitious reforms.
- **Mainstream adaptation in PBF with wider development objectives and explore cross-cutting climate PBF.** Adaptation considerations can be included as a component in PBF with wider

development objectives. In a World Bank PBL to Panama, for instance, the reform pillar on fiscal management included a policy for integrating disaster risk analysis into public investment planning (World Bank Group Archives, 2016[77]). Adaptation policies could also be supported together with reforms for mitigation action in cross-cutting climate PBF instruments. An example is the cross-cutting climate PBL in the Philippines, co-financed by the AFD and ADB and with a component targeting adaptation in agriculture and natural resources, including reforms such as establishing a Climate-Resilient Agriculture Office and new legislation on resilient agriculture (ADB, 2022[78]). By gradually introducing policy reforms related to adaptation in PBF that has other development objectives, providers can foster a dialogue with recipient countries and contribute to raising awareness for adaptation in legislation processes.

- **Use PBF when countries are in urgent need of support.** PBF can be a useful tool in post-disaster and crisis contexts, as described in Box 4.3 as such finance allows allow for flexible use of funds, which significantly shortens the time needed for planning and project preparation.
- **Explore the use of PBF as policy-based grants in contexts where loans are not feasible.** Loans represented 78% of adaptation-related budget support in 2016-20. But PBLs are not appropriate for all countries, including some of the most vulnerable such as LDCs and SIDS, due to their debt limits. To overcome this challenge, providers could instead provide policy-based grants or policy-based loans with a considerable grant component to countries with high debt levels. MDBs, currently the main providers of PBLs, could deliver some of their grant finance in the form of PBF for adaptation. In addition, major providers of grant finance, especially bilateral providers, can engage more actively in policy dialogue with grant recipients and move towards policy-based instruments.
- **Embed PBF in multi-donor initiatives and programmatic approaches**. PBF is often an element of multi-donor initiatives and programmatic development planning, including as an accompaniment to investment projects. PBF is also often paired with technical assistance to develop the capacities needed to plan and implement reforms. While more of the large multi-donor programmes focus on mitigation than on adaptation, the Resilient Kerala Program (Box 4.3) demonstrates how providers can support adaptation on a bigger scale. Programmatic approaches could also include PBF components to support planning as well as an enabling environment.

Box 4.3. Policy-Based Finance: The Resilient Kerala Program

The state of Kerala in southern India, highly vulnerable to natural disasters due to its geography, experienced devastating floods in 2018. Insufficient preparation and a lack of co-ordination of the emergency response exacerbated the impacts of the flood, creating momentum to enhance disaster preparedness. The government of Kerala first established the Rebuild Kerala Initiative and, together with international development partners, the Rebuild Kerala Development Programme, a comprehensive programme to improve preparedness for natural disasters encompassing policy reforms, strategic planning, capacity development and investment projects. PBLs from the World Bank and KfW supported implementation, with additional support for investment and technical assistance and the Asian Infrastructure Investment Bank, ADB, the EU, JICA and the UN provided additional support for investment and technical assistance.

The first World Bank Development Policy Operation under this programme was a USD 250 million concessional loan and contained conditions for disbursement: issuing guidelines for project selection and preparation; and budgeting for the programme; updating the State Disaster Management Plan; submitting a Draft River Basin Conservation and Management Act to the Legislative Assembly; adopting a state sanitation and waste management strategy; and or creating a single land record and integrated map for Kerala. KfW provided co-financing in the form of a concessional loan of EUR 100 million. These reforms were drawn from previous strategy documents elaborated with the support of international providers. Technical assistance under the programme targeted, for example, the provision of open data for improved risk assessment, flood monitoring and forecasting; capacity development of the Directorate of Environment and Climate Change; and public financial management at the state and local levels. Investment projects linked to the programme included an additional EUR 170 million loan from KfW for the climate-resilient construction of damaged roads.

The Resilient Kerala Program shows the advantages of PBLs and programmatic approaches for adaptation in certain situations. It created a local strategy with strong ownership around which donors can organise their broader programmatic approach and investment projects, establishing a basis for effective support and partnership. The strong political momentum after the 2018 floods led to high government attention to adaptation and to ambitious policy reforms systemically addressing disaster preparedness. Providers of climate finance also contributed to detailed planning efforts far beyond the level of detail of NAPs or NDCs, which proved useful in identifying necessary policy reforms as well as investment projects.

Embedded in this programmatic approach, PBF played an important role. Funding needs were estimated at USD 4.4 billion in a post-disaster needs assessment. The rapid disbursement and flexibility of PBLs proved vital in responding to immediate needs. Combined with technical assistance and capacity development, the PBLs also incentivised quick implementation of necessary reforms.

Source: Interview with KfW ; KfW (2019[79]), KfW supports climate-resilient infrastructure in India, https://www.kfw-entwicklungsbank.de/International-financing/KfW-Development-Bank/About-us/News/News-Details_550528.html ; World Bank Group (2019[80]), India – First Resilient Kerala Program Development Policy Operation (English), https://documents.worldbank.org/en/publication/documents-reports/documentdetail/476681561946430308/india-first-resilient-kerala-program-development-policy-operation

4.3.4. Seek to streamline and improve the interoperability of processes for accessing climate finance for adaptation

Navigating the international adaptation finance architecture can be daunting to many developing countries, especially as different providers often have different access modalities, eligibility criteria and administrative requirements for developing countries' project proposals. Capacity development at the individual and organisational levels in recipient countries can enhance access to adaptation finance, and it is crucial that providers of climate finance support this activity. At the same time, some interventions can be undertaken upstream to support countries in their efforts to access and utilise funds effectively. Providers could consider the following options:

- **Improving the interoperability of project applications and reduce transaction costs for applicants** by streamlining and standardising application procedures across different climate finance providers. This would save countries time and resources when applying for funding. In this regard, the GCF and GEF jointly issued a Long-Term Vision on Complementarity and Coherence that proposes, among other things, that the two funds collaborate and co-ordinate on programming and develop common guidance for project design and measuring project impact (GEF and GCF, 2021[81]). Another example is the joint MDB Working Group on Climate Finance Tracking's updated methodology for tracking climate change adaptation finance (EIB, 2022[82]), which clarifies the activities that MDBs consider to be adaptation finance, thus lowering transaction costs of recipient countries that are working with several MDBs. Though not limited to adaptation finance, the Mutual Reliance Initiative of the AFD, the European Investment Bank and KfW also aims to facilitate co-operation among different providers, which also would have the effect of reducing recipients' transaction costs (EIB, 2023[83]). Even with these initiatives, there is room to further improve the interoperability and reduce costs for accessing climate finance. For example, encouraging mutual recognition of accreditation between multilateral climate funds could reduce duplication of efforts and further streamline access to resources. Beyond the joint MDB methodology, there is also untapped potential for further improvement in the interoperability of standards and guidelines across different types of providers, including bilateral providers and multilateral climate funds.
- **Encourage climate funds to provide direct access to resources.** Direct access can reduce costs for developing countries and enable smaller, locally led adaptation projects with high country ownership (Box 4.4). However, accreditation can be a complex and arduous process, complicated by factors such as stringent criteria, intricate application processes and applicants' capacity constraints. Therefore, most projects are still implemented by multilateral implementing entities (as discussed in section 2.3). Several initiatives to facilitate direct access have potential to be scaled up. One is the GCF's project-specific assessment approach pilot that allows for one-step project appraisals without requiring a full accreditation of the implementing entity. It will be important to monitor and evaluate the success of this approach. Also promising are enhanced direct access initiatives that facilitate and streamline accreditation procedures, making it easier for developing countries to access funding.
- **Streamline the architecture of climate funds to address fragmentation** by avoiding the creation of new funds while encouraging existing funds to enhance collaboration and ensure complementarity. Funds also could work towards improvements in terms of transparency, efficiency, and impact. The joint GCF and GEF Long-Term Vision on Complementarity and Coherence, as noted, is a step in that direction (GEF and GCF, 2021[81]). Including explicit statements on collaboration and complementarity in strategic documents could also help foster accountability as would drafting additional shared complementarity strategies. Calls for broader multilateral reform beyond complementarity could also address fragmentation of climate finds, including by reducing the number of funds and funding windows (section 3.3).
- **Provide capacity development for the preparation of funding applications** by focusing on long-term comprehensive strategies that encourage sustainable learning cultures in developing

countries. These could include moving away from the fly-in fly-out consulting model and short-term, project-based initiatives and instead investing in multi-year partnerships that value and develop local knowledge. As noted in a study by the OECD (2023[19]) on climate-related development finance for SIDS, international providers can support developing countries in accessing adaptation finance by placing experts, preferably hired locally or regionally, directly in government institutions to offer training and ensure talent retention. This approach would include long-term embedding of additional personnel, pooling advisory services where needed, absorbing trained staff from previous capacity interventions, developing tailored capacity activities for domestic stakeholders, providing continuous on-the-job training, and utilising or creating regional support networks to facilitate peer-to-peer learning. Such initiatives have resulted in significant financing for various projects in SIDS, demonstrating their efficacy (OECD, 2023[19]).

Box 4.4. Direct Access to Multilateral Climate Funds

Direct access is a funding channel of multilateral climate funds in which a domestic entity of the recipient country is responsible for planning and implementation of a project and no intermediaries such as multilateral, international or bilateral entities are involved (Caldwell and Larsen, 2021[84]). Direct access was piloted by the Adaptation Fund and has since been adopted as a financial mechanism by most climate funds, including the GCF. Direct access requires accreditation of a national entity at the climate fund, which can be a long and arduous process depending on the readiness and capacity of the applicant entity. Many funds limit direct access to smaller projects based on the entity's capacity constraints, leaving bigger infrastructure investments still largely implement by non-domestic actors. For fragile states and very small SIDS, the institutional requirements for direct access are especially difficult to fulfil (LDC Expert Group, 2020[85]). In an effort to ensure equitable access between national and multilateral implementing entities, the Adaptation Fund has set a cap of 50% for direct access entities. However, direct access through recipient governments made up only 6% of climate funds' adaptation finance over 2016-20 while multilateral organisations implemented 79% of such funding.[7] Climate finance through direct access was least prevalent in LDC and fragile states and accounted for only 14% of disbursements in upper middle-income countries over that period. In light of capacity constraints in national administrations, access through multilateral organisations might have enabled quicker project approvals and disbursements, because experienced international entities with high fiduciary standards were more easily accredited with the new funds. Indirect access also allows bilateral DFIs and MDBs to implement project pipelines that exceed their financial resources or risk appetites, as several providers noted in interviews for this report.

Increasing direct access to climate finance offers several benefits to developing countries. Direct access can reduce implementation costs for developing countries as they otherwise pay considerable mark-ups to implementing agencies. Direct access may also increase alignment with national priorities and ownership (Garschagen and Doshi, 2022[86]; IMF, 2021[87]; United Nations and Climate Finance Access Network, 2022[59]). The process of accreditation is also valuable in developing capacity and reliable national systems, which in turn can attract investment from other sources and improve the sustainability of projects since as direct access entities are well placed to continue initiatives after international finance ends. Finally, research has found projects implemented through direct access are closer to local needs and more likely to involve local authorities (Manuamorn and Biesbroek, 2020[88]).

Source: Caldwell and Larsen (2021[84]), Improving Access to the Green Climate Fund: How the Fund Can Better Support Developing Country Institutions, https://doi.org/10.46830/wriwp.19.00132 ; Garschagen and Doshi (2022[86]), Does fund-based adaptation finance reach the most vulnerable countries?, https://doi.org/10.1016/j.gloenvcha.2021.102450 ; LDC Expert Group (2020[85]), Gaps and needs related to the process to formulate and implement national adaptation plans, and ongoing activities of the Least Developed Countries Expert Group, the Adaptation Committee and relevant organizations related to addressing those gaps and needs, https://unfccc.int/sites/default/files/resource/Gaps-and-needs-Naps-March-2020.pdf ; Fouad et al. (2021[87]), Unlocking Access to Climate Finance for Pacific Island Countries, https://doi.org/10.5089/9781513594224.087 ; United Nations and Climate Finance Access Network (2022[59]), Accessing Climate Finance: Challenges and opportunities for Small Island Developing States, https://www.un.org/ohrlls/sites/www.un.org.ohrlls/files/accessing_climate_finance_challenges_sids_report.pdf ; Manuamorn and Biesbroek (Manuamorn and Biesbroek, 2020[88]), Do direct-access and indirect-access adaptation projects differ in their focus on local communities? A systematic analysis of 63 Adaptation Fund projects, https://doi.org/10.1007/s10113-020-01716-4

4.4. Deploy public and blended finance instruments strategically to mobilise private finance for adaptation

Beyond the efforts to strengthen the enabling environment highlighted above, significant untapped potential exists for development actors to engage directly – at a transaction, project or programme level – to unlock private finance for adaptation. This is primarily relevant to adaptation interventions that can have a revenue stream but are not yet commercially viable (see Section 3.1.). Here, blended finance plays a crucial role – complementing other action areas presented in this report by helping overcome initial barriers that adaptation projects may face.

As elaborated in Box 4.5, blended finance is the strategic use of development finance to unlock commercial finance for sustainable development in developing countries (OECD, 2018[89]). The focus on supporting projects complements improvements to the enabling environment highlighted above (OECD, 2018[89]). Blended finance can enhance returns and/or reduce the risks faced by private investors, with the aim of making projects commercially viable. This can be achieved using concessional finance, such as from aid agencies, or non-concessional or market-rate development finance, such as DFIs' own resources. In the case of market-rate development finance, the benefits arise from additional characteristics that the mobilised private investor can leverage – such as development actors' due diligence capacity, know-how, local presence and longer-term commitment to market-building (OECD, 2018[89]). As such, development finance can serve a demonstration effect by highlighting to other private actors the viability of adaptation-themed investments (Tall et al., 2021[90]).

While current levels of private finance mobilised by official development finance for adaptation are low, existing efforts demonstrate the potential of private finance for adaptation and identify pathways for development actors to unlock this potential. Six of these efforts are presented in greater detail in Annex A. These case studies inform the options discussed in this section to work with and through the private sector to scale the mobilisation of private finance or private investments into adaptation activities.

Box 4.5. The OECD DAC Blended Finance Principles and associated guidance

The OECD defines blended finance as "the strategic use of development finance for the mobilisation of additional finance towards sustainable development in developing countries" (OECD, 2018[91]). It is one of many tools in the development finance ecosystem – and particularly key to the mobilisation of commercial capital.

The OECD DAC Blended Finance Principles, endorsed by the DAC in 2017, aim to help bilateral and multilateral providers, development co-operation agencies, philanthropies and other stakeholders design and implement effective, efficient, and transparent blended finance programmes. Since then, they have been embedded into the international development architecture – for example by being referenced under a number of G20 and G7 Presidencies, and shaping discussions on blended finance best practices within the UN, the European Union and the World Economic Forum (OECD, 2020[92]).

There are five OECD DAC Blended Finance Principles:

- Principle 1. Anchor blended finance use to a development rationale.
- Principle 2. Design blended finance to increase the mobilisation of commercial finance.
- Principle 3. Tailor blended finance to local context.
- Principle 4. Focus on effective partnering for blended finance.
- Principle 5. Monitor blended finance for transparency and results.

The OECD Blended Finance Guidance advises how to put these principles into policy practice (OECD, 2021[93]). For now, this guidance is sector-agnostic but will be strengthened throughout 2023/24 with the addition of financial instruments including green, social and sustainability (GSS) bonds and risk sharing mechanisms, as well as through thematic updates in the form of dedicated Guidance on blended finance for adaptation and biodiversity.

Source: OECD (2018[91]), OECD DAC Blended Finance Principles for Unlocking Commercial Finance for the Sustainable Development Goals, https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/OECD-Blended-Finance-Principles.pdf; OECD (2020[92]), Blended finance guidance & principles (webpage), https://www.oecd.org/dac/financing-sustainable-development/blended-finance-principles/guidance-and-principles/; OECD (2021[93]), The OECD DAC Blended Finance Guidance, https://doi.org/10.1787/d571f17c-en

4.4.1. Integrate private finance mobilisation objectives into relevant adaptation transactions, projects and programmes

The call to mobilise further private finance extends beyond adaptation. It initially emerged in the context of the Addis Ababa Action Agenda and subsequent blended finance efforts (OECD, 2018[89]). Currently, the international financial architecture faces increasing pressure to enhance its role in climate financing, including by unlocking additional private finance to augment total funding for climate action. Several proposals demand reform of MDBs, including calls for greater risk exposure through the use of blended finance instruments.

Although these reform processes are still ongoing, international providers play an important role already now. They could start acting on mobilisation by integrating the objective of private finance mobilisation through a bottom-up approach that formulates mobilisation ambitions on adaptation within given transactions, projects, and programmes. Public finance will remain crucial in financing adaptation outcomes in many circumstances – but making mobilisation objectives explicit could help international providers select the most effective and appropriate financial tools. International providers could also consider disbursing concessional funding with a clearly expressed expectation or even conditionality to

mobilise private finance and then chose the channel accordingly. This must all be done in the context of clear adaptation objectives.

Public international finance interventions for adaptation unlock private finance through a variety of financial instruments including debt, equity, credit enhancement and grants (Annex A). Private finance can also be mobilised at different levels or transmission mechanisms (Figure 1.3). This can be done, for example, via a developing country government which issues adaptation-specific bonds. Mobilisation can also take place at the project level (e.g. via direct investment in special purpose vehicles or public-private partnerships that serve an adaptation purpose such as flood protection); at the portfolio level (e.g. via buying shares of investment funds that on-lend or provide equity to adaptation-related SMEs or projects); and at the financial institution or enterprise level (e.g. via direct investment in companies that provide adaptation services such as weather forecast data).

Private finance can also be catalysed via an improved enabling environment that is conducive to private investments in adaptation. International providers can leverage upon the variety of entry points to progressively build markets of private finance for adaptation. For example, the EBRD issued its first climate resilience bond also to help familiarise the private sector with investing in adaptation[8] (see case study 5 in Annex A). Efforts to improve data access – via grants and technical assistance – may in turn also support the catalysation of private sector investments in local data processing and forecasting (case study 1 in Annex A).

Even when using private sector-related instruments, spelling out mobilisation ambitions upfront and pursuing them throughout implementation are important to the effective mobilisation of private finance. Engaging private sector actors early can clarify if and how they can participate in specific deals and transactions. Doing so is particularly relevant to financing adaptation, where private actors generally lack expertise and a track record.

4.4.2. Tailor the use of public and blended finance instruments to unlock private finance that corresponds to the needs and characteristics of adaptation activities

Efforts to mobilise private finance for adaptation are at an early stage. International public finance providers and development finance actors should thus invest in exploring, piloting and eventually scaling tailored approaches to support adaptation and increase adaptation finance. Recognising the unique aspects of adaptation finance and private investor preferences should yield dividends in the long run. International providers should exploit the full range of development finance instruments – from grants to market-rate development finance interventions – to effectively unlock further private finance for adaptation that responds to the specific characteristics and needs of adaptation activities. Examples include:

- **Use grants to create an enabling environment conducive to private investments in adaptation**. Grants play an established role in creating an environment conducive to private investments in adaptation. The Asia-Pacific Climate Finance Fund (case study 2 in Annex A) exemplifies how grants can drive the development and uptake of risk management tools in financial intermediaries. The Systematic Observations Financing Facility (SOFF) (case study 1 in Annex A) shows how grants can contribute to data as a means to adapt. Grants can also establish conducive enabling environments for SMEs that provide services and products enabling adaptation, as demonstrated by the Lightsmith group's Adaptation SME Accelerator Project (ASAP) (case study 3 in Annex A). The initiatives highlighted in the case studies also demonstrate the role of grants in overcoming the technical barriers which prevent countries from systematically integrating adaptation considerations into broader development projects. Development grants and public domestic finance will continue to play a leading role in building the ecosystem and the enabling environment. That being said, it is important to note that while grants can be used for blending, on their own they are not blended finance instruments as such.

- **Use grants strategically to unlock private finance by tailoring risk-return options to the adaptation project lifecycle stage.** Early in the project lifecycle stage, grants can be used to provide early-stage capital to cover feasibility studies. While fundamental in driving investments into adaptation, these are not directly associated with any returns generated by the underlying activities. It is important to develop rigorous processes for grant allocation, in line with the options for consideration outlined in section 4.3.1. This could involve, for example, setting targets for geographical allocation, and developing shared key performance indicators (KPIs) to assess the expected impact on adaptation of different projects. Grants can also be used to support early-stage innovative adaptation projects through the development stage: the uncertain cash-flows and the uncertainty around the adaptation effects on these cash flows underscore the significant role of development finance. The ASAP, for example, supports SMEs to overcome barriers to scale and commercialisation (case study 3 in Annex A). The Climate Investor Two (CI2) fund includes a development fund focusing on the planning and development of water and sanitation infrastructure projects with adaptation spill-over effects (case study 4 in Annex A); a second and complementary fund focuses on providing equity for construction, a generally high-risk phase when operations have yet to generate cash flow. While the CI2 development fund is providing grant-based instruments and hence no financial return, the construction fund is mobilising further private finance by introducing a layered structure that provides tailored risk-return options for different investor types. The senior tranche, when private investors come in, is protected by a junior tranche of concessional development finance providers and a mezzanine tranche of market-rate development financiers.
- **Use portfolio approaches to link capital markets and institutional investors with adaptation projects**. These approaches can unlock private finance upstream at the portfolio level, through project aggregation. Examples include collective investment vehicles like the CI2 Construction Equity Fund, which brings in institutional investors (case study 4 in Annex A). The EBRD's climate resilience bond issuance (case study 5 in Annex A) targeted private investors to familiarise them with adaptation more broadly while also setting an example for potential issuers. In both cases, adaptation projects are identified, evaluated, and initiated by an intermediary – climate fund managers and the EBRD – and financed by a mix of development finance and commercial investment. Standardised capital market instruments such as green, social and sustainability (GSS) bonds are used to (re)-finance sustainable projects (Box 4.6). Such portfolio approaches typically target larger projects rather than SMEs. For example, the proceeds of the EBRD's climate resilience bond are used to finance projects within the EBRD's Climate Resilience Portfolio made of up EUR 1.4 billion in operating assets (case study 5 in Annex A). The EBRD uses the proceeds of a USD 700 million climate resilience bond for its operations in infrastructure, financing for business and commercial operations, and agricultural systems such as water-efficient irrigation systems. Other portfolio approaches include risk-sharing mechanisms such as portfolio guarantees and credit lines, as well as securitisation[9] (OECD, 2021[94]; ImpactAlpha, 2023[95]). Private financiers with large volumes to invest, and who seek liquid and profitable ventures, are often unfamiliar with adaptation and are unlikely to engage in the origination of adaptation deals – also due to a lack of local presence and knowledge. Intermediaries can connect adaptation-specific demands as well as institutional investor preferences, and more broadly familiarise investors with the area of adaptation. In these contexts, the intermediation function plays a crucial role. This role can be fulfilled both by development actors that have a track record and existing portfolio in developing countries (including on adaptation), such as DFIs, as well as private actors such as fund managers, who are established players in the management of blended finance funds (Dembele et al., 2022[96]). Via such approaches, a clear link is made between investor profitability and the positive impacts of investment of adaptation, thus addressing economic and financial barriers identified in Chapter 3.

Box 4.6. Green, Social and Sustainability (GSS) bonds for adaptation

GSS bonds are use-of-proceeds instruments. Issuers commit to using the proceeds to (re-)finance projects considered to have a positive environmental and/or social impact. For investors, they provide greater transparency over what the earnings of the bond are used for and help meet growing expectations over sustainable mandates. For issuers, they are a source of long-term, diversified and low-cost funding for projects with a clear development focus. The GSS bond market has experienced very significant growth in recent years. Yet it remains largely concentrated in developed countries: in 2021, only 7% of the overall GSS bond market was issued in ODA-eligible countries. Significant support from international providers is therefore needed in this area (OECD, 2023[97]).

Climate adaptation is already being financed with GSS bonds – but to a very limited extent. According to the Global Center on Adaptation, 16.4% of global green bonds (as of September 2020) also targeted activities related to adaptation – yet only 6% of these were from emerging markets (Amundi and IFC, 2022[98]). A few sovereigns – such as Fiji, Indonesia, the European Union, and New Zealand – have issued GSS bonds earmarking climate change adaptation as one of the eligible use-of-proceeds categories (Climate Bonds Initiative, 2022[99]; Amundi and IFC, 2022[98]). Fiji's issuance is particularly noteworthy as it was one of the few sovereign bonds of which the majority of proceeds are allocated to climate change resilience. The EBRD's climate resilience bond also stands out as the world's first with this label and to earmark all proceeds to resilience (case study 5 in Annex A).

Significant potential therefore exists to use GSS bonds to finance adaptation, especially given the urgency of increasing adaptation finance and the growing interest from issuers and investors in these instruments. Challenges remain – both in ensuring that GSS bonds contribute positively to adaptation, and in scaling their use, especially in developing countries. There is also a lack of bankable projects large enough for GSS bond financing, and this may be especially the case for adaptation specifically. GSS bonds are often used to refinance existing assets, therefore making it difficult to prove their additionality and impact. Studies have also found limited issuer commitments regarding the use-of-proceeds of bonds (Curtis, Weidemaier and Gulati, 2023[100]), and the enforceability of any commitments also remains limited (Zettelmeyer et al., 2022[101]). International providers therefore have an important role in helping overcome these challenges to advance issuances of GSS bonds in developing countries, and realise the potential of these instruments for sustainable development and climate adaptation.

Source: OECD (2023[97]), Green, Social and Sustainability bonds in developing countries: The case for increased donor co-ordination, https://www.oecd.org/dac/green-social-sustainability-bonds-developing-countries-donor-co-ordination.pdf ; Amundi and IFC (2022[98]), Emerging Market Green Bonds Report 2021, https://research-center.amundi.com/article/emerging-market-green-bonds-report-2021; Climate Bonds Initiative (2022[99]), Sustainable Debt: Global State of the Market 2022, https://www.climatebonds.net/resources/reports/sustainable-debt-global-state-market-2021; Curtis, Weidemaier and Gulati (2023[100]), Green Bonds, Empty Promises, http://dx.doi.org/10.2139/ssrn.4350209 ; Zettelmeyer et al. (2022[101]), Geneva 25: Climate and Debt, https://cepr.org/publications/books-and-reports/geneva-25-climate-and-debt

4.4.3. Undertake regular assessments of needs for concessional finance

The need for blended finance will evolve over time. Successful transactions help reduce the costs of future interventions by demonstrating feasibility and enabling "learning by doing". Over time, this can reduce the need for concessional finance to support adaptation actions that can potentially generate market-level or close-to-market-level returns. The result is a dynamic evolution of the use of blended finance, where the use of concessional finance is continuously assessed throughout different stages of a project and also of a market's development more broadly (OECD, 2022[102]).

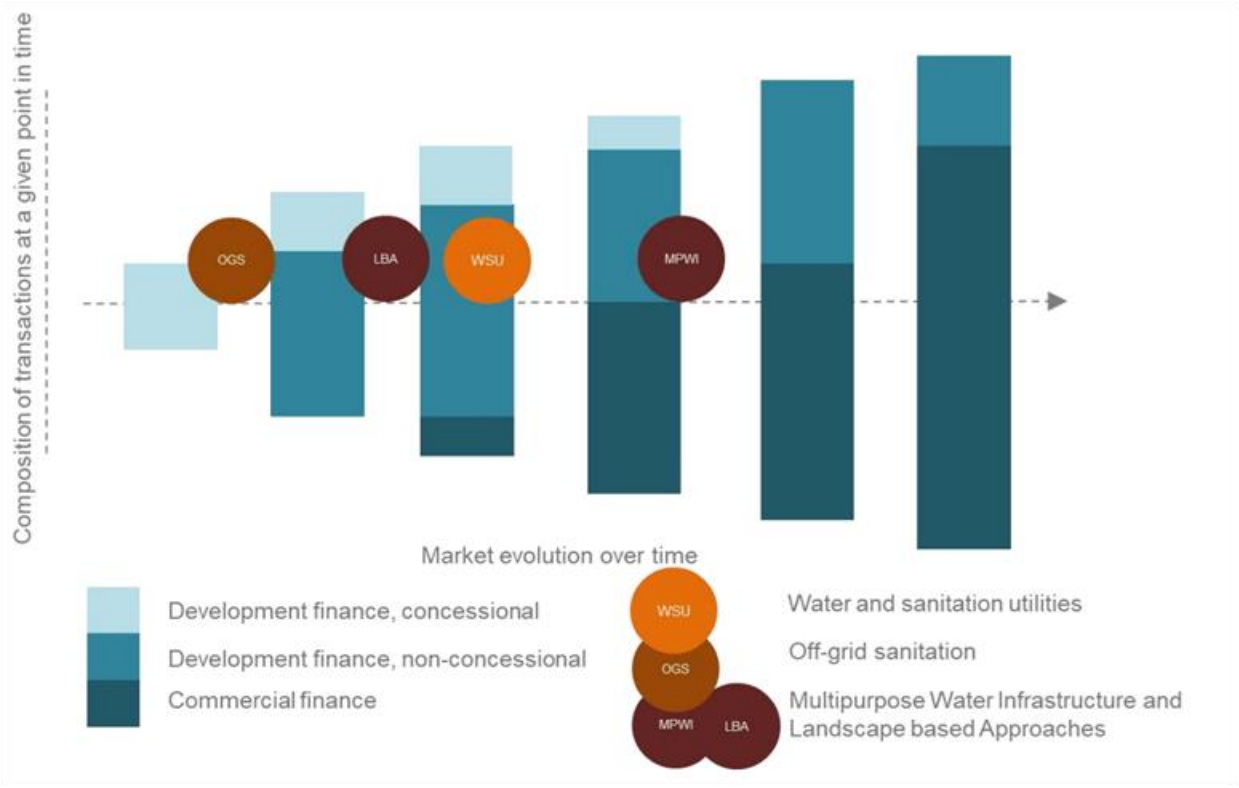
While significant grant funding might initially be necessary to stimulate an adaptation solution, once the solution is proven and scaled, the grant component should gradually decrease in repeat transactions and give way to other reimbursable instruments. For example, grant funding will be needed in the project development phase of a nature-based solutions project – for fundamental research on the impact of adaptation and respective data development – and market-rate finance can then step in to support the infrastructure in the projects' operational phase as well as the applied research and roll-out of specific technologies (UNEP Copenhagen Climate Centre and OECD, 2022[103]). The CI2 fund, which provides solutions across the lifecycle of water and sanitation projects, also shows how the use of blended finance can be tailored to different project stages and eventually phase-out over time (case study 4 in Annex A). Grants were used for project development; a mix of grant and concessional development finance was deployed for construction, which also mobilises additional private finance; this was followed by a more market-oriented refinancing fund during operational phase of the infrastructure.

Ultimately, the use of blended concessional finance should strive towards market creation and exiting once commercial markets are functioning (OECD, 2020[92]). Especially given the scarcity of developmental resources, permanent subsidisation is neither desirable nor self-sustainable, leading to market distortion or maladaptation. Therefore, concessional finance that is disbursed to unlock private finance should be linked to the ongoing status of market failures that prevent stand-alone private finance for adaptation, rather than being of structural nature. If continuous development finance support is needed to attract private finance for adaptation objectives, then context and conditions may not be suitable for blended finance, suggesting a need for other instruments from providers' toolboxes. Otherwise, blended finance may risk using scarce development resources to over-subsidise the private sector for risks that will continue to persist in the area of adaptation financing in the absence of market development (OECD, 2020[104]). This aligns with an understanding of blended finance as a dynamic, transitory approach; over time, private financiers and investors accumulate experience, data and knowledge in adaptation, leading towards increased reliance on commercial finance.

While public finance will continue to play a crucial role in financing adaptation, some sectors and adaptation activities are already more suitable for more market-oriented financing solutions (section 3.1, Table 3.1). For instance, the more financially viable activities– such as integrating climate resilience into the design of new infrastructure –can progressively increase their reliance on commercial finance. Figure 4.2 is a stylised visual representation of the potential evolution over time of the role of development concessional finance. The figure focuses on three subsectors in the water and sanitation sector, as this type of market evolution clearly will not apply to all sectors (OECD, 2019[105]).

Indeed, based on the specific context and market conditions of different sectors, international providers can strategically select from their financial toolbox, using grants, concessional development finance, non-concessional development finance and market-rate development finance to provide effective support. Mitigation and adaptation objectives may call for differentiated approaches in climate development finance, using limited grant resources for adaptation and focusing non-concessional development finance on mitigation. Indeed, the Independent High Level Expert Group on Climate Finance calls for a new approach to finance that takes advantage of the complementary strengths of different sources to ensure the right volumes and types of finance for different spending priorities for climate action, and to reduce the cost of capital more broadly. According to the Expert Group, for example, private sector investors typically need to operate with shorter financing terms and require relatively robust revenue streams (Songwe, Stern and Bhattacharya, 2022[106]).

Figure 4.2. Current state of transaction-level mobilisation and its potential evolution towards increased reliance on commercial finance



Note: The x-axis of the graph displays a time dimension, indicating the evolutionary role of development finance in unlocking private finance within sectors.
Source: OECD (2019[107]), *Making Blended Finance Work for Water and Sanitation: Unlocking Commercial Finance for SDG 6*, https://doi.org/10.1787/5efc8950-en; OECD (2018[108]), *Making Blended Finance Work for the Sustainable Development Goals*, http://dx.doi.org/10.1787/9789264288768-en.

4.4.4. Use blended finance as a tool to encourage mainstreaming adaptation into projects

Blended finance can be used as an incentive to mainstream adaptation elements into projects that are undertaken for other reasons, such as clean energy projects. Currently bankable projects can be adjusted to ensure that they contribute more significantly to adaptation, for example by harnessing spill-over effects by redirecting or cross-leveraging.

Mainstreaming adaptation into mitigation infrastructure projects is a particularly promising way to unlock private investors. One way of doing this could be to integrate climate resilience into the design of new infrastructure, such as water-proof cables that are more expensive in a new port but will resist flooding. Another alternative could be to make existing infrastructure resilient, for instance by using heat-proof concrete when refurbishing a motor route. For any investment, there should be an assessment of whether measures to increase resilience are needed and of the most cost-efficient way of implementing these. Strengthening adaptation by exploiting spill-over effects from projects that do not primarily target adaptation relies on the fact that mitigation projects, through their project finance nature, can ringfence cash flow generation and be scaled. In such projects, the high degree of cash flow predictability associated with infrastructure and project finance provides certainty to investors about their repayments and returns, with adaptation aims also incorporated into the project. The CI2 fund, for example, has a mandate to

mobilise private finance and it harnesses spill-over effects through its explicit focus on both adaptation and mitigation (case study 4 in Annex A).

4.4.5. Develop strengthened practices to measure, understand and maximise the adaptation impact of mobilised finance

Numerous factors make the monitoring and evaluation of adaptation challenging – among them measuring attribution, dealing with rapidly changing baselines, setting measurable and specific targets and indicators, factoring the long-term and uncertain nature of climate change adaptation, and overcoming gaps in data availability (OECD, 2015[109]; OECD, 2023[57]). Understanding the adaptation impact is challenging, and especially so in the context of blended finance transactions. These involve multiple partners and intermediaries, making it harder to establish causal links between inputs and results. Further, concerns have been raised about the associated risks and unintended impacts of using blended finance without the right policies and understanding in place (OECD, 2018[89]).

A crucial first need is for shared, harmonised metrics and KPIs to demonstrate and assess the adaptation impact. These will make it easier to understand and compare the impact and effectiveness of different projects and activities and assess vulnerability. Importantly, they will help drive funding where it is most needed and where it can have the greatest impact. The complexity and wide-ranging scope of both climate change and adaptation actions make it hard to identify adaptation metrics. The effectiveness of climate adaptation interventions is often measured by looking at processes and outputs rather than outcomes – for example, by using indicators that relate to the policies and plans put in place rather than assessing how the intervention might have reduced climate risks and increased adaptive capacity (OECD, 2023[57]). Indeed, according to the International Platform on Adaptation Metrics, the difficulty in quantifying adaptation and the underlying lack of consensus on adaptation metrics have been identified as the key reason behind the insufficient mobilisation of finance for climate adaptation (2022[110]).

The International Platform on Adaptation Metrics is working towards designing adaptation metrics to encourage stronger adaptation financing and policymaking. The OECD Impact by Design Toolkit also provides a best practice guide on selecting adequate indicators to measure climate adaptation and resilience. From a business perspective, looking at the profitability and sustainability of businesses working on adaptation projects can also be important. If the market is willing to pay for a technology or data service intended to support adaptation, this in itself is an indicator of success – and therefore a metric to consider for adaptation. Using this as a metric can be a first step, to be built on and improved on. Taking a step back, the private sector, which is ultimately closer to adaptation projects and activities, should participate in developing best practices and KPIs. International providers therefore have a role to play in bridging gaps between different actors.

Also needed is better measurement of the effectiveness and outcome results of blended finance transactions, including to understand which blended finance instruments are mobilising the most commercial capital and specifically addressing adaptation, for example (OECD, 2015[109]). Relatedly, the lack of transparency on blended finance operations has been identified as a major obstacle to the mobilisation of private finance (OECD, 2023[111]). Understanding the impact of specific actions on adaptation then ultimately rests on strong measurement and monitoring for results, as well as transparent and comparable reporting. Well-designed results frameworks facilitate evidence-based decision-making, learning, accountability towards goals and actions, and communication. The OECD Impact by Design Toolkit provides guidance on designing effective results frameworks (OECD, 2023[57]).

4.5. Explore and tap into alternative financing sources and mobilisation instruments for adaptation

A number of innovative alternative instruments have emerged within the development and climate finance space beyond those more traditionally used by established sources. These instruments offer significant potential to bridge the financing gaps for sustainable development and climate. Several options are open to providers and developing countries to test some of these instruments and used them to scale up finance for adaptation.

4.5.1. Clarify and exploit the role of Special Drawing Rights in financing adaptation

Special drawing rights (SDRs), the international reserve assets created by the International Monetary Fund (IMF) to supplement its member countries' official reserves, have the potential to bolster adaptation finance for developing countries by: improving developing countries' liquidity and financial capacities; supporting IMF-administered trust funds; and, potentially increasing MDBs' lending capacity. SDRs can be allocated by the IMF if there is a long-term global need to supplement existing reserve assets, provided that it will avoid both economic stagnation and deflation, and excess demand and inflation. General SDR allocations require an 85 percent majority of the total voting power of members that are participants in the SDR Department of the IMF. SDRs could be used to help scale up adaptation finance in a number of ways:

- **Developing countries can hold allocated SDRs to augment their international reserves, or use them to acquire usable currency or repay IMF obligations**. An SDR allocation gives IMF members both SDR assets (SDR holdings) and corresponding liabilities (SDR allocations). If a country's SDR holdings fall below their cumulative SDR allocations, the country is obligated to pay the floating SDR interest rate (about 4% as of October 2023) on the shortfall until the SDR holdings match the cumulative SDR allocations (IMF, 2023[112]). The allocated SDRs would increase the member's gross international reserves and are typically managed by either the country's Central Bank or the Finance Ministry. With stronger reserve buffers and financial resilience, these countries can potentially attract more adaptation finance from international sources, such as MDBs, climate funds, and private investments. Moreover, countries can voluntarily channel their SDRs to the IMF or prescribed holders including MDBs. The IMF allocates SDRs to its member countries based on their IMF quota shares (broadly related to their economic size) meaning that a larger share of SDRs is allocated to advanced economies and emerging markets. It is estimated that low-income countries are only allocated 3.3% of all SDR allocation (IMF, 2021[113]).
- **Many advanced and emerging economies with robust international financial standings have chosen to channel SDRs to two IMF-administered trust funds**. The IMF Poverty Reduction and Growth Trust (PRGT) provides concessional financing to low-income countries, helping them develop sound macroeconomic policies, which are critical for fostering macroeconomic stability, poverty reduction, and building resilience to shocks of all kinds. The IMF Resilience and Sustainability Trust (RST) provides financing for countries to build resilience to external shocks, including to climate change- and pandemic-related risks. The IMF Executive Board has already approved eleven countries for arrangements under the RST. Beyond the IMF-administered PRGT and RST, the Bridgetown Initiative has proposed the establishment of a Global Climate Mitigation Trust, to be endowed with USD 500 billion of SDRs. This would bring an important shift in how such programmes are financed, currently reliant on the developmental assistance budgets of donor countries (ECA-ECLAC, 2022[114]). Indeed, in terms of accounting for adaptation finance provided and mobilised by developed countries, the use of SDRs through the RST raises fundamental questions around defining the scope of adaptation-specific finance versus broader categories of finance for climate resilience and general resilience, which encompasses a wider array of economic challenges, including but not limited to climate resilience (see Chapter 1).

- **Finally, allocated SDRs could be used to potentially increase MDBs' lending capacity**. Some MDBs are exploring the issuance of SDR-denominated hybrid capital instruments. Current proposals for the use of these instruments could enable additional lending of three to four times the amount of hybrid capital created by the SDRs. Leveraging the multilateral banks' capability to amplify investments, this could see SDR 100 generating between SDR 300 and SDR 400 in new development lending (Lazard, 2022[115]). Ultimately, the channelling of SDRs to MDBs should be a collaborative decision, taking into account primarily the consensus between MDBs and SDR-lending countries (Andrews and Plant, 2021[116]). At the same time, many potential contributors (such as European Union members) face legal obstacles to purchasing these instruments, and MDBs continue to collaborate with shareholders to refine arrangements. The IMF is broadly supportive of SDR channelling to MDBs and is updating its legal infrastructure to allow for this new use.

4.5.2. Build on international carbon markets to provide financing for adaptation in developing countries

Article 6 of the Paris Agreement, though primarily focused on GHG mitigation, also supports adaptation through multiple channels, including market approaches to promote both mitigation and adaptation. Specifically, it offers a framework for international carbon markets through Article 6.2, which introduces the concept of internationally transferred mitigation outcomes (ITMOs) and their accounting framework, and through Article 6.4, which outlines a new mechanism to contribute to the mitigation of GHG emissions.

In particular, under the new Article 6.4 mechanism, a 5% share of proceeds (SOP) from Article 6.4 Emission Reductions (A6.4ERs) generated by carbon markets will be allocated to the Adaptation Fund, providing financial support for climate adaptation projects in vulnerable developing countries. A 2% SOP destined to finance the Adaptation Fund was already implemented under the Kyoto Protocol's Clean Development Mechanism (CDM). As of May 2023, monetisation of the levied CDM CERs has provided USD 215 million of the Adaptation Fund's cumulative USD 781 million (World Bank, 2023[117]). (LDC Climate Change, 2021[118]) provided one of the few estimates of the impact of the 5% SoP under the Paris Agreement, finding that the levy could generate as much as USD 2.7 billion for the Adaptation Fund. Their study, however, was conducted prior to the adoption of the Article 6 rulebooks and does not take into account the most recent developments in this area, including the fact that the SoP will not be mandatory for transactions under Article 6.2 markets. The figure could therefore be a material overestimate, though indicating that the Article 6.4 levy might raise more finance for the Adaptation Fund than did the CDM. The SoP from Article 6.4 could also have positive influence on other similar mechanisms, raising further resources for adaptation.

4.5.3. Embed adaptation and resilience considerations in emerging sustainable finance definitions, instruments and products

Innovative sustainable finance instruments and products have emerged in recent years to boost finance for climate change. Individually, none of them will be the silver bullet to reach the necessary finance levels; rather, they must be seen as tools to be used and assessed. Many of these instruments are in the early stages of development and application – and currently either omit adaptation or focus less on adaptation than on mitigation. It is important to monitor the potential of these instruments and products to scale up adaptation finance, and possibly modify them to fit this purpose. Although many such instruments exist, this section explores two – sustainability-linked bonds (SLBs) and tax securitisation – to exemplify the potential that they hold for mobilising finance for adaptation.

SLBs are financial instruments in which issuers commit to pre-defined sustainability objectives and the structural and/or financial characteristics of the bonds then change depending on whether these objectives are met. As the proceeds are not project-specific and can therefore be used for general purposes, SLBs

have strong potential as instruments to finance adaptation: they do not require a pipeline of bankable assets and allow for flexibility as the impacts of climate change develop. Relatedly, the change in structural and/or financial characteristics incentivises issuers to meet adaptation targets. The first SLB was issued in 2019, and issuances have predominately (98%) come from corporates. Two sovereigns, Chile, and Uruguay, issued SLBs in 2022, linking the bonds to their respective Paris Agreement NDCs. According to NatureFinance estimates, SLB issuances from emerging market and developing economy sovereigns could reach between USD 250 billion and USD 400 billion by 2030, up from USD 3.5 billion at the end of 2022 (Kulenkampff and Pipan, 2023[119]). This growth could drive significant finance towards adaptation projects. For example, SLBs can be used to mobilise capital to cover funding gaps for adaptation solutions. SLBs can also enhance the accountability and credibility of country's adaptation pledges and NAPs by setting clear targets and metrics and providing financial incentives to achieve them (Kulenkampff and Pipan, 2023[119]). The International Capital Market Association (ICMA) published an Illustrative KPI Registry for SLBs, which includes KPIs tied directly to adaptation (e.g. the percentage of invested assets managed in accordance with ESG-criteria "including climate adaptation objectives" (ICMA, 2023[120]). The World Bank has also published a list of potential sovereign KPIs that would be both appropriately ambitious for investors and achievable for issuing countries. Among these are indicators related to adaptation (e.g. whether a country has adaptation communications and a NAP) (World Bank Group, 2021[121])).

SLBs are more flexible than use-of-proceeds GSS bonds (Box 4.6) in that they do not lock issuers into specific technologies or projects (Rimaud, 2023[122]). In the context of adaptation, this feature means there is greater freedom to switch to different solutions as technologies, and the impacts of climate change, develop. However, as such new instruments, the impact of SLBs remains uncertain and there are barriers to scaling them. For example, assessing the ambitiousness of the sustainability objectives set by issuers is challenging – especially as these need to reflect different country contexts. Another challenge is the lack of timely data, especially in developing countries, to demonstrate progress towards targets (World Bank Group, 2021[121])). Structural loopholes, such as late target dates and call options, also make SLBs less effective (Ul Haq and Doumbia, 2023[123]).

Securitisation of fees and taxes is another promising instrument recently applied to financing climate adaptation. This entails issuing a bond backed by the cash flows of fees or taxes with a strong cash record, with the bond proceeds then used to finance climate resilience and adaptation. Securitisation raises large-scale financing and attracts private capital that may otherwise be hard to mobilise for climate adaptation projects with limited revenue generation potential. In the United States, the securitisation of fees and taxes has already been used to pay for climate change damages, and proposals have been made to use it to fund air quality, climate and vehicle electrification programmes (Legislative Analyst's Office, 2021[124]; ImpactAlpha, 2023[95]). This instrument has also already been successfully used in developing country contexts. Ghana, for example, has securitised education and petrol taxes to improve access to education and pay off legacy debts in the banking sector, respectively (ImpactAlpha, 2023[95]). These examples suggest that the securitisation of taxes and fees could be used in African countries to finance adaptation.

At the same time, at an aggregate level, this instrument does not increase overall amount of financing available to governments for adaptation but helps to frontload adaptation investments and thereby to prevent harmful and costly impacts from climate change. However, securitisation models are complex to design, apply and manage successfully – and developing country governments as originators may lack the knowledge, regulation, or capacity to do so. The feasibility of this instrument also relies on the existence of a tax or fee with a strong cash flow, a population that can pay such tax, and a government that can collect it – which can be challenging in many developing country contexts (OECD, 2023[125]).

4.5.4. Consider the relevance of debt-for-adaptation swaps

International providers have used the practice of debt in some specific circumstances to alleviate the debt burden of developing countries. The Paris Club of creditor countries also reschedules and/or cancels debt

in its effort to find sustainable solutions to debtor countries in difficulty, treating USD 614 billion of debt since 1956 (Club de Paris - Paris Club, n.d.[126]). Providers of concessional finance have also supported debt relief on an ad hoc, bilateral basis. While debt relief may not contribute to new and additional development finance flows to developing countries, it essentially converts an obligation to repay funds into a grant. This then frees up fiscal space for the recipient country to repurpose principal and interest into public investment. This type of relief can be paired with macroeconomic reforms. (Club de Paris - Paris Club, n.d.[126]).

Debt-for-nature swaps are a specific form of debt relief whereby creditor countries or institutions agree to reduce or cancel the debt owed to them in exchange for the debtor country's commitment to invest in conservation, ecosystem restoration or climate-resilient infrastructure. Debt-for-nature swaps could serve as a model or instrument for mobilising and channelling adaptation finance while also promoting environmental conservation and sustainable development. They could be structured to provide debt relief in exchange for a nation's investment commitment in a sector or project that contributes to adaptation. Such swaps could also include commercial debt. In some situations, debt-for-nature swaps can be a viable tool to address multiple, concurrent crises such as namely unsustainable debt, biodiversity loss and climate change (Kelly, Ducros and Steele, 2023[127]). By freeing up fiscal space, they can allow countries to improve climate change resilience without the government having to sacrifice spending on other priorities (Georgieva, Chamon and Thakoor, 2022[128]). Unlike debt forgiveness or debt restructuring that tend to benefit only the debtor, debt swaps can have benefits for creditors too, via the allocation of greater fiscal space by debtor economies for increased investment in the climate space (Shirai, 2022[129])

To date, debt-for-nature swaps have not focused specifically on adaptation projects and activities (Hebbale and Urpelainen, 2023[130]), though they can unlock climate finance with benefits for adaptation. For example, in a debt-for-nature swap signed in January 2023, EUR 12 million of debt repayments owed by Cabo Verde to Portugal will be put in an environment and climate fund (Goncalves, 2023[131]). Importantly, the swap is tied to KPIs for national climate and nature goals, the details of which are still being finalised. Cabo Verde must meet these goals to receive the debt relief, with any remaining fiscal space used for other development priorities (Kelly, Ducros and Steele, 2023[127]; IIED, 2023[132]).

Debt swaps in general, however, entail a complex process. Addressing debt and environmental issues separately is typically more effective, and climate-conditional grants have proven more efficient. Some swaps, including Belize's 2021 debt-for-nature swap, have been criticised for being very expensive and ultimately having a relatively small impact on debt relief. There is also limited scope for using these tools beyond SIDS or other small economies due to the size of debt involved and the need to convince numerous public and private actors to participate in such complex transactions (Padín-Dujon, 2023[133]).

Moreover, debt swaps cannot restore solvency unless they involve a large portion of a nation's debt, which none so far have done. Nor are swaps a substitute for debt restructuring, though they can complement it when resources such as grants are scarce and a country's debt is unmanageable (Georgieva, Chamon and Thakoor, 2022[128]). In addition, any debt relief impacts a country's creditworthiness perception in relation to current and future lenders (or bond holders), including private sector actors. Future issuances of sovereign debt – a major source of funding – may be impacted by such instruments that make use of – technically – default on current repayment obligations. As such, they are intended to be a one-off fix rather than scalable or replicable at the country-level as a regular instrument. The fundamental intention needs to be and should continue to be to avoid debt distress situations in the first place.

For debt-for-nature swaps to be successful, they need to be underpinned by effective governance in the debtor country and a strong monitoring and enforcement system. It is also important that the KPIs be established in line with debtor country government's existing climate or adaptation commitments as well as local stakeholders' priorities (Kelly, Ducros and Steele, 2023[127]). International providers could usefully therefore support SIDS via capacity development – for example in designing and understanding the swap schemes or in structuring the bonds that will form part of the swap (OECD, 2023[19]).

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Notes

[1] Australia, for instance, has initiated an AUD 9.5 million (Australian dollars) programme to foster nature-based solution projects via Pacific non-governmental organisations. Similarly, Canada has pledged CAD 315 million (Canadian dollars) for a programme using nature-based solutions to increase climate resilience in sub-Saharan Africa and to facilitate partnerships among Indigenous populations. The United Kingdom, in its 10 Point Plan for financing biodiversity, stresses the need for nature-based solutions that can deliver significantly on both adaptation and mitigation. For further details, see https://www.gov.uk/government/publications/political-vision-the-10-point-plan-for-financing-biodiversity.

[2] The principles are currently endorsed by 80 organisations among them DAC member bilateral development agencies. The organisations include the Danish international development agency Danida; the Dutch Ministry of Foreign Affairs; Irish Aid; Swedish International Development Cooperation Agency; United Kingdom Foreign, Commonwealth and Development Office; the United States https://www.gov.uk/government/publications/political-vision-the-10-point-plan-for-financing- biodiversity Agency for International Development; and multilateral climate funds such as the Adaptation Fund, Climate Investment Funds and the Global Environment Facility.

[3] See (OECD, 2021[22]; Crishna Morgado, 2017[134]) (Casado Asensio, 2021[51]).

[4] Such activity will not be reflected in the accounting measures presented in this paper, including the amounts mobilised by official development interventions (see previous section). In general, a discussion is ongoing how to capture such adaptation efforts; the European Commission, for example, considers as environmentally sustainable capital expenditure (CAPEX) or operational expenditures (OPEX) for economic activities that contribute substantially to climate change adaptation (European Commission, 2021[47]).

[5] As market forces incentivise adaptation enterprises that do not adapt in their respective business may not be doing so as this would be economically inefficient.

[6] This refers to adaptation-related development finance marked as sectoral budget support in the DAC CRS database. It should be noted that within the Rio markers methodology, general budget support cannot be marked as adaptation-related finance.

[7] The following multilateral climate funds included in this analysis are the Adaptation Fund; the Climate Investment Funds (including the Clean Technology Fund and the Strategic Climate Fund); the GCF; the GEF (including the LDCF and Special Climate Change Fun); and the International Fund for Agricultural Development.

[8] The impetus was revealed in consultations with the EBRD undertaken for this report.

[9] Securitization refers to the credit risk trancing of a portfolio of underlying cash flows stemming from a variety of assets such as loans or tax flows, in which “investors buy parts of this credit risk varying by the degree of subordination. Within such structures, first loss tranches provide credit enhancement, i.e., comfort to senior tranche investors” (OECD, 2021[94])

5 Ways forward: Assessing the timescale and impact of actions to scale up adaptation finance

This final chapter highlights ways forward for international providers across the five areas explored in Chapter 4, with a focus on how quickly different actions might take effect and the extent to which they will impact adaptation finance levels. The urgency to increase adaptation action and the multitude of challenges to be addressed to do so imply that international providers must prioritise how, when and which options they consider to meaningfully scale up adaptation finance and unlock additional private finance. As such, the chapter underscores that while enhancing the quantity of finance for adaptation is essential, it is also important to consider the qualitative impact and broader effectiveness of those resources.

The escalating effects of climate change, documented in the Sixth Assessment Report of the Intergovernmental Panel on Climate Change's (IPCC), underscore the urgency of enhancing adaptation actions (IPCC, 2023[1]). Developing countries, facing pronounced vulnerability to these impacts, require financial support to initiate and sustain effective adaptation measures. Recent international agreements re-emphasise and the importance of financial support for developing countries. The 2021 Glasgow Climate Pact, for instance, urges developed countries to double their climate finance for adaptation by 2025. Likewise, the OECD DAC, in its 2021 climate Declaration, expressed the intention to reinforce support for climate resilience in developing countries.

While international providers' contributions are essential, the monumental scale of investment needed to support adaptation in developing countries requires a parallel, collective effort on the part of multiple stakeholders, including the private sector and domestic actors. As noted, this effort should take into account a key message of the Addis Ababa Action Agenda, which recognises that some countries have specific vulnerabilities and needs, each is responsible for defining its own economic and social pathway (UN DESA, 2015[2]).

This concluding chapter builds on the analysis in the previous chapters to summarise potential strategies and mechanisms by which international providers can ramp up their support for adaptation action by developing countries. The five action areas discussed in Chapter 4 and the barriers to scaling up adaptation finance outlined in Chapter 3 offer a roadmap are for bilateral and multilateral providers. The options offered vary in terms of how quickly they might demonstrate results and in their overall impact over the short and longer term:

- **Relative effect on tracked flows of climate finance**. Different action areas impact the tracked flows of climate finance differently. Some areas may result in a significant uptick in climate finance for adaptation. Others may play an enabling role that leads over time to increased finance for adaptation – for example, by improving the enabling environment for investment by the domestic private sector – but does not appreciably affect recorded flows of climate finance.
- **Timescale of results**. Some action areas can yield immediate results, producing impacts in a short period of time. Others require sustained effort, with their effects appearing over longer periods.
- **Impact and contribution to adaptation and resilience**. While scaling up the quantity of finance for adaptation is essential, it is also important to consider the qualitative impact of those resources. For example, the implementation of relatively low-cost measures, such as improved early warning systems, may have a small impact on finance flows but a large impact on countries' resilience to the impacts of climate change.

The timescales and potential impacts related to options in each of the action areas are discussed in the following sections. Table 5.1 presents an overview of these action areas, clarifying the timescale for their respective impacts on adaptation finance levels, and their contributions to fostering resilience and adaptation in developing countries.

5.1. Assess forward spending plans for alignment with the goal of double climate finance for adaptation by 2025 and increase co-ordination of these efforts

The first action area calls on donors to assess the extent to which their upcoming spending plans align with the collective goal of doubling climate finance for adaptation by 2025. International public adaptation finance is instrumental in supporting adaptation-related public services that produce no or very limited financial returns. But such finance also can serve as a catalyst for the mobilisation of further financial resources, encouraging private sector engagement in sectors such as agriculture and infrastructure that offer a potential return on investments.

The ability of providers to adjust their spending plans can directly affect the financial resources available for adaptation. Nonetheless, while public finance is essential, it cannot meet all adaptation requirements comprehensively.

5.1.1. Impacts

Regarding the impact timeline, this area aims for immediate results. Enhanced commitments from international public finance donors can lead to funds being ready for projects relatively quickly, thus accelerating the rollout of interventions. Concerning its contribution to resilience and adaptation, this area predominantly targets sectors dependent on international public funding. It plays a pivotal role in promoting investments in fields such as social protection and education, which are vital for enhancing adaptive capabilities in developing countries. This action area functions as a foundational step, setting the prerequisite conditions for the efficacy of the subsequent action areas.

5.2. Support developing countries' efforts to strengthen their capacities, policies, and enabling environment for finance for adaptation

The second action area underscores the importance of bolstering capacities, policies, and environments conducive to adaptation finance. Enhancing enabling environments to more effectively attract private investment can entail strengthening the availability of climate-related risk data to inform capital investment planning in both the public and private sectors. Supporting developing countries to attract and access adaptation finance also can target the overall investment environment, including building economic stability, social unity, and favourable policy frameworks stimulate private investments.

5.2.1. Impacts

This action area, despite its overall importance for mobilising additional finance for adaptation in the medium and long term, may have a more modest he expected impact on boosting climate finance flows in the short term. Activities focused on capacity building and enabling environments demand fewer financial resources than direct project investments. It may also take a long time to see the results in terms of increased adaptation action. Moreover, the finance flows that might be unlocked thanks to improved capacity and improved policy and regulatory frameworks may not be tracked as climate finance. A notable increase in adaptation finance might require more time. This action area amplifies and refines the efficiency of all other action areas. It encourages a transition from stand-alone project-based approaches towards a comprehensive integration of adaptation into the development plans of beneficiary countries. Additionally, this action area offers a systematic structure to identify and redress market inconsistencies frequently associated with adaptation investment strategies.

5.3. Strengthen development practices and systems to support efficient delivery of adaptation finance

The third action area relates to development practices and systems for the efficient delivery of finance for adaptation to more effectively incorporate adaptation concerns within development agendas. One option to be considered is the revision of bilateral and multilateral providers' frameworks and organisational set-ups to ensure that available resources consistently and effectively take into account adaptation considerations.

5.3.1. Impacts

This action area is likely to have a relatively modest impact on volumes of adaptation finance compared with other action areas, as the strategy primarily focuses on refining current structures and making a more efficient use of resources available rather than increasing levels of finance as such. But strengthening development practices and systems can enable quicker and more efficient access to and use of funds.

Regarding resilience and adaptation, the emphasis of this action area on system efficiency is vital. It seeks to speed up international public adaptation finance provision and expand its reach. Importantly, it aims to ensure that a diverse array of stakeholders, including local authorities and community-based organisations, can more easily access and use adaptation finance. This broader accessibility promotes a more comprehensive and effective response to climate change-related challenges.

5.4. Deploy public and blended finance instruments strategically to mobilise private finance for adaptation

Public finance can increase the mobilisation of private funds for adaptation by modifying the risk-return profiles of adaptation projects to align with private sector requirements. There is therefore a need for a more deliberate and strategic approach to the dynamic use of blended finance, whether it be tailored to different adaptation activities and/or promoting market development most broadly. Recognising the hurdles for private financiers, it will be essential to engage intermediaries such as developmental organisations and private fund managers. Moreover, currently bankable projects should be adapted to heighten their contribution to adaptation.

5.4.1. Impacts

Enhancing the use public and blended finance instruments to mobilise private finance would have a medium-term impact on levels of financing for adaptation. It takes time to develop capacities, incentives and blended finance instruments and for these to meaningfully start unlocking private finance for adaptation. Given that the mobilisation of private finance for adaptation by international public finance is starting from low levels and that private finance represents an extremely vast pool of capital, this action area holds substantial potential to significantly increase volumes of finance for adaptation in developing countries. In terms of contributing to resilience and adaptation, this action area is crucial for addressing the adaptation necessities of developing countries by catalysing additional investments from the private sector at scale for activities that enhance adaptation and resilience to climate change.

5.5. Explore and tap into alternative financing sources and mobilisation instruments for adaptation

Alternative financing instruments can amplify public and private resources available to finance adaptation in developing countries. Strategic use of special drawing rights (SDRs) can bolster the capitalisation of multilateral development banks, for instance. Leveraging the share of proceeds from international carbon markets can help finance the Adaptation Fund, and deploying debt-for-adaptation swaps offer the potential to increase fiscal space in developing countries, thereby providing them with room to invest in adaptation. More broadly, this action area could include embedding adaptation and resilience considerations into the development of emerging sustainable finance instruments such as sustainability-linked bonds and tax securitisation.

5.5.1. Impacts

Short- to medium-term positive impacts on levels of adaptation finance are possible. However, a more comprehensive scaling up of adaptation finance in developing countries will depend on how widely these alternative financing sources and tools are adopted. Global economic trends also can impact their effectiveness. For example, if international carbon markets flourish in the coming years, the Adaptation Fund might see its first revenues within 5 years, highlighting the potential for timely and substantial impacts on adaptation finance.

In terms of contributing to resilience and adaptation, this action area showcases the potential to channel an increased flow of both international public and private resources towards initiatives focused on adaptation and resilience in developing nations.

Table 5.1. Summary of action areas for international providers towards scaling financing for adaptation in developing countries

Action area	Recommendation	Relative effect on tracked flows of climate finance (from + to +++)	Timescale	Contribution to resilience and adaptation
Assess the consistency of forward spending plans with the call for collectively doubling climate finance for adaptation by 2025, and increase coordination of these efforts	Scale up adaptation financing capacities of Bilateral providers, MDBs, Climate Funds, DFIs	+++	Short-term - Immediate impacts on levels of adaptation finance provided	Critical for enabling investments for adaptation and resilience in sectors and activities that will continue to require international public funding (e.g. social protection, education)
Support developing countries' efforts to strengthen capacities, policies, and enabling environment for finance for adaptation	Facilitate private sector capacity to seek and access finance for adaptation-relevant investments	+	Medium- to long-term - The impact on scaled up adaptation finance will take time to materialise during and following the implementation of improved domestic plans and policies	Critical for continual contribution to increasing the effectiveness of other action areas. Important for moving from a project-based approach to achieving broader mainstreaming of adaptation in developing countries. Important for addressing market failures for adaptation investment
	Support the development of institutional capacity, policies and markets			
	Enhance role of local governments and communities in delivering and implementing adaptation action			
	Support developing countries in preparing adaptation project pipelines			
Strengthen development practices and systems to support efficient delivery of adaptation finance	Set internal quantitative targets for adaptation finance	+	Short- to medium term - Progressive impacts on improved mainstreaming of adaptation in development projects and on developing countries' ability to access funding	Important for increasing the efficiency and speed of the provision of international public adaptation finance. Contribute to increasing accessibility to adaptation finance for a broader range of actors, including local governments and communities.
	Consider minimum levels or "windows" of funding for most vulnerable countries			
	Move from project-based adaptation to programmatic approaches			
	Increase the use of policy-based climate finance for adaptation			
	Seek to streamline and harmonise processes for accessing climate finance for adaptation			
Deploy public and blended finance instruments strategically to mobilise private finance for adaptation	Integrate private finance mobilisation objectives into relevant adaptation transactions, projects, and programmes	+++	Medium term - Capacities, incentives, toolkits and track record need to be build up to meaningfully unlock private finance for	Critical for meeting developing countries' adaptation needs by enabling additional investments for adaptation and resilience in sectors and activities where international public
	Tailor the use of public and blended			

	finance instruments to unlock private finance that corresponds to the needs and characteristics of adaptation activities		adaptation.	finance can attract private finance at scale.
	Undertake regular assessments of needs for concessional finance			
	Use blended finance as a tool to encourage mainstreaming adaptation into projects			
	Develop strengthened practices to understand and maximise impact on adaptation			
Explore and tap into alternative financing sources and mobilisation instruments for adaptation	Clarify and exploit the role of Special Drawing Rights in financing adaptation	++	Short- to medium-term - Likely modest impacts by 2025 on tracked adaptation finance volumes.	Potential for channeling further international public finance and private finance for adaptation and resilience activities in developing countries.
	Build on international carbon markets to provide financing for adaptation in developing countries			
	Embed adaptation and resilience considerations in emerging sustainable finance definitions, instruments and products			
	Consider the relevance of debt-for-adaptation swaps			

Note: Action areas are ordered according to the speed of their potential effect on scaling up financial flows for adaptation in developing countries. “Short-term” refers to options that will yield results on levels of adaptation finance by 2025; “Medium-term” refers to option that will yield results by 2030; “Long-term” refers to options that will yield results after 2030.

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Annex A. Case studies

The following case studies showcase existing initiatives working both with and through the private sector to scale the mobilisation of private finance into adaptation activities. They demonstrate the potential of private finance for adaptation and identify pathways for development actors to further unlock this. The case studies are referred to throughout Section 4.4.

Case study 1: Systematic Observations Financing Facility (SOFF)

Surface-based observational data represents the basis for weather forecasts and climate predictions on which societies and economies around the world depend to effectively respond to the risks of climate change and extreme weather events. The economic impact of such data access is significant: cost-benefit ratios of investment in additional surface-based observations are estimated at 1:26 (WMO, 2020[1]). In LDCs as well as in SIDS, current weather and climate-related data gaps are severe, and negatively impact the ability to adequately predict extreme weather events (WMO, 2021[2]). Indeed, LDCs and SIDS provide less than 10% of required, basic weather and climate observations (WMO, 2022[3]). To address this problem, at COP26 the World Meteorological Organization (WMO), the UN Development Programme (UNDP) and the UN Environment Programme (UNEP) announced the creation of the Systematic Observations Financing Facility (SOFF). SOFF aims to fill pertinent data gaps by supporting countries' efforts to improve data collection, processing, and exchange for more effective adaptation action and enhanced resilient development, in particular in LDCs and SIDs (Nordic Development Fund, 2022[4]).

Development (and public sector) partners

SOFF is established as a UN multi-partner trust fund, co-created by WMO, UNDP and UNEP and was operationalised in June 2022. SOFF is a foundational element and delivery vehicle of the UN Early Warnings for All initiative, announced by UN Secretary-General Antonio Guterres in 2022, that aims at covering every person on earth with early warnings within five years. As part of this UN initiative, the SOFF funding requirements correspond to USD 400 million, with a target size of EUR 200 million in the first three years. Initial funders include Austria, Denmark, Finland, Iceland, Ireland, the Netherlands, Norway, Spain, the Unites States as well as the Nordic Development Fund (NDF) (Nordic Development Fund, 2022[4]). SOFF will provide long-term and results-based grant finance and technical assistance to beneficiary countries, in particular LDCs and SIDS, to improve compliance with the requirements of the Global Basic Observing Network (GBON) – a new international agreement by the World Meteorological Congress to improve the international exchange of observational data and which defines basic standards of surface-based observations (e.g., the required frequency and density of observations) (WMO, 2022[5]).

SOFF is implemented through institutions of the multilateral development system, among them the World Bank, other MDBs as well as UN organisations like the UNDP, UNEP and the World Food Programme. These implementing entities are members of the Alliance for Hydromet Development that was formed at COP25 to unite efforts to close the capacity gap on high-quality weather forecasts, early warning systems, and climate information as the foundation for resilient and sustainable development (SOFF 2021). SOFF technical assistance is provided by advanced national meteorological offices on a peer-to-peer basis. WMO and the NDF serve as co-chairs of the SOFF steering committee, the main decision-making body, and co-decision maker along with the funding partners. UNDP and UNEP co-chair the multi-stakeholder

SOFF advisory board along with up to 15 members. Members of the advisory board are stakeholders already active in the fields of adaptation, risk and resilience. The advisory board produces recommendations for the steering committee, aims to create synergies with existing adaptation and resilience initiatives and seeks to link SOFF with policy and investment decisions (SOFF, 2021[6]).

Private sector partners

An important private sector partner is the Association of Hydro-Meteorological Equipment Industry, which represents the views of the hydro-meteorological instruments and systems industry in SOFF and is part of the multi-stakeholder advisory board. Depending on the country-specific context, the private sector can also function as a pivotal partner in the generation of observational data, thus contributing to a foundational pillar of climate adaptation efforts. SOFF envisions varying degrees of involvement of private partners in the operation of the observation infrastructure and telecommunications. For instance, private partners may operate the infrastructure while the ownership remains in public hands[1], may jointly own and operate respective infrastructure with public institutions, or both fully own and operate the infrastructure while providing observational data to the public (SOFF, 2021[6]).

Challenge and solution

The economic benefits of expanding the generation of surface-based observational data are enormous. Research suggests strong cost-benefit ratios and global socio-economic benefits in the order of USD 160 billion per year, of which USD 66 billion can be attributed to improved global disaster risk management (Kull et al., 2021[7]). Lack of data in one region or country affects global systems of climate and weather forecasts. SOFF addresses these gaps, and in doing so recognises the importance of the private sector. Three channels can be identified through which adaptive capabilities, in the context of improved observational data generation, impact the private sector.

The private sector as a producer of observational data

As highlighted above, where applicable, SOFF envisions a role of the private sector to generate GBON-compliant surface-based observations on behalf of the government (WMO, 2022[5]). Private enterprises may already have some capacity or own necessary infrastructure (e.g. in the telecommunication sector) to produce or transmit data satisfying potential demand e.g. by agri-businesses or insurers. A key aspect of basic surface-based observational data is its treatment as a public good which can improve global climate and weather forecasts. Correspondingly, a key metric of SOFF's measure of success lies in increased exchange of surface based observational weather and climate data. Relying solely on (private) data providers with commercial interest can be risky, in particular if licensing arrangements adversely impact global climate and weather data dissemination (Kull et al., 2021[7]). Collected and analysed data which goes beyond "core data" may be suitable to advance commercial interests and, given the potential economic benefits, a strong business case can be made for additional activities to be performed around data collection and analysis. The generated data enabled by SOFF can set the foundation for additional private business models.

The private sector as a user of observational data

Adaptation to the effects of climate change fundamentally includes coping with an environment characterised by changing weather patterns and extreme weather events, and dealing with an altered risk environment. Improving access to observational weather and climate data is critical for the private sector to adjust to this changed risk environment. The insurance and agricultural sectors may be particularly important users of observational data. Improved access to weather-related data points can help insurance companies enhance risk assessment, pricing of insurance products, and potentially improve and expand access to insurance products for individuals or companies in LDCs and SIDS (SOFF, 2020[8]). The need of insurance companies to adapt to the changed risk landscape is in line with current thinking in the

community of risk managers. According to a recent survey conducted by the Society of Actuaries and others, climate risk has been the top emerging risk for risk managers for the third consecutive year (Rudolph, 2022[9]). Reliable access to weather data and the improved ability of insurance providers to estimate the impact of weather events on agri-businesses' crop yields) can help farmers tap into insurance products to protect themselves from extreme weather events (Tsan et al., 2019[10]). Improving understanding of seasonal trends can also help them make informed decisions on the planting and harvesting of crops, potentially improving crop yields.

Enabling environment

Finally, by improving data access SOFF may support the catalysation of private sector investment in realms of local data processing and forecasting, and may improve the availability of risk management products (SOFF, 2021[6]). Improved access to weather data could also potentially help financial institutions better understand seasonal trends and the impact these may have on business models and markets. For instance, accessible weather data may help financial institutions assess farmers' creditworthiness) with the potential to improve lending decisions and access to finance (Tsan et al., 2019[10]).

Case study 2: Asia-Pacific Climate Finance Fund (ACliFF)

A report by WMO in 2020 highlights the lives lost and the damage done to infrastructure by extreme weather events such as floods, storms, and droughts throughout different regions of Asia. The damage has severe socioeconomic costs and threatens sustainable development in the region (WMO, 2021[11]). At the same time, in developing countries, many such risks are uninsured. Estimates suggest that only 7% of losses from natural catastrophes in low- and middle-income countries were insured (Hott and Tran, 2020[12]). The changing nature of the risk landscape, as well as the need to increase climate investment in developing countries, evokes the use of new financial risk management tools. These can potentially address uncertainties around new climate technologies and strengthen resilience to extreme weather events (ADB, 2017[13]). By addressing respective interlinkages between sustainable infrastructure development and financial risk management products, they can increase climate resilience.

To address the low penetration of financial risk management products in developing countries, ADB member countries founded ACliFF in 2017, with the intention to fund and implement financial risk management products (ADB, 2017[13]). ACliFF is a multi-donor trust fund, which aims to facilitate the development and implementation of financial risk management products by sovereign and non-sovereign institutions to remove barriers to climate investments and to increase adaptive capabilities and resilience in ADB developing member countries. Rather than focusing on new products, ACliFF focuses on types of products which already demonstrated viability elsewhere but have not attained commercial viability in the region (ADB, n.d.[14]).

The fund will deploy different financial instruments. For instance, ACliFF will provide technical assistance to identify, prepare and support financial risk management products as well as finance costs of expert services needed for the development of such tools. Among other things, grants will be distributed to cover consulting and legal fees and can also be used for the acquisition and development of data. Other ADB products can be used if agreed upon by the ADB and the fund's contributors (ADB, 2017[13]).

Financial risk management products that are supported by ACliFF need to contribute to at least of one four objectives:

1. Accelerate adoption and financing of climate technologies (e.g., through risk-transfer products dealing with technology and performance risk).
2. Scale private sector climate financing (e.g., managing risks of new and innovative financial models).
3. Promote and accelerate investments for climate adaptation and resilience.

4. Address extreme weather events (e.g., through disaster insurance tailored for MSMEs) (ADB, n.d.[14]).

Available figures show that the fund has disbursed USD 7.95 million to private sector operations and USD 2.73 million to public sector operations. The majority of funds have been distributed to the sectors of energy (USD 4.88 million) and disaster resilience (USD 4.18 million). Regionally, the majority of funds have been distributed to entities in the Pacific (USD 4.7 million) (ADB, 2021[15]).

Development finance (and public sector) partners

Development finance partners include the ADB, which has established and administers the fund (ADB, 2017[13]). The German Government via the Federal Ministry for Economic Cooperation and Development has provided USD 33 million in financial support for the fund (ADB, 2021[16]).

Private sector partners

ACliFF envisions private sector participation along different dimensions. Private firms can benefit from ACliFF support to facilitate the development and implementation of their financial risk management product offering. Such firms could be reinsurers, guarantee providers or financial institutions. Downstream, the development of an improved ecosystem of risk management solutions can support climate and development projects, which may facilitate investment by private (and public) actors (ADB, 2021[15]).

Challenge and solution

In the face of a changed climate risk environment, ADB points out the tremendous financing needs for ADB developing member countries. Accounting for the costs of climate adaptation and mitigation, about USD 1.7 trillion is needed for infrastructure financing annually in the respective ADB member countries (ADB, 2017[17]). Attracting private investment for sustainable infrastructure development is likely to be impeded in the face of the negative interlinkages between an environment of heightened climate risk on the one hand and insufficient risk-management tools on the other. ACliFF recognises this predicament by supporting the development and implementation of viable financial risk management able to achieve objectives relevant to improved adaptation. ACliFF makes three important contributions:

1. **Contributing to technology and knowledge diffusion.** The penetration of risk management tools tends to be lower in developing member countries of the ADB (ADB, 2017[13]). As ACliFF explicitly focuses its support on types of solutions which have already proven their viability elsewhere but have failed to reach widespread commercial viability in the region, ACliFF makes an important contribution to global knowledge and technology diffusion by closing significant gaps in the offering of financial risk management products.
2. **Creating downstream effects on climate investment.** By improving risk management offerings which can help address uncertainties (e.g. around climate technology, or the development and performance of infrastructure), ACliFF contributes to the creation of an economic environment able to attract climate investment in segments that were underserved so far (ADB, 2017[13]).
3. **Improving resilience through financial risk management tools.** By increasing access to financial risk management products, ACliFF also contributes to climate resilience. For instance, ACliFF has provided a USD 1.5 million technical assistance grant for a pilot project which aims to expand the offering of insurance products by microfinance institutions. The pilot is rolled out in four regions of India and includes training for loan officers in microfinance institutions as well as campaigns to raise awareness among the local population on the benefits of such insurance. The insurance coverage will improve resilience among low-income households by protecting these from the impacts of climate disasters (ADB, 2021[18]).

Case Study 3: Lightsmith group: Adaptation SME Accelerator Project

Small and medium-sized enterprises (SMEs) are of vital importance, in particular in emerging economies where they make vast contributions to employment and GDP (World Bank, n.d.[19]). Importantly, SMEs can be also a critical component for improving the climate adaptation landscape. Their presence throughout developing economies and their ability to reach dispersed communities makes them important actors in improving climate resilience and adaptive capabilities (Terpstra and Ofstedahl, 2013[20]). Some recent empirical research in the developing country context further suggests that SME spending on R&D is positively associated with a measure of climate change vulnerability – suggesting that SMEs, perhaps to cope with the effects of climate change, may become drivers of innovation (Alam et al., 2022[21]). However, while SMEs are key for economic prospects, climate adaptation and innovation, they also tend to be viewed as riskier compared to their larger counterparts and tend to have more difficult access to financial services and face trouble in reaching sufficient scale (CPI, 2018[22]). SMEs are typically more vulnerable to climate change given that they have fewer resources at their disposal than larger counterparts.

Recognising these barriers as well as the importance of SMEs for innovation for climate adaptation, ASAP led by the Lightsmith Group, a global private-equity and venture-capital investment platform, seeks to facilitate the availability of SME-led climate adaptation solutions. ASAP follows three pillars in promoting SME-led adaptation innovation:

1. It identifies adaptation SMEs, using an elaborate taxonomy and maps firms that provide adaptation solutions.
2. It creates a network of adaptation SMEs and stakeholders.
3. It incubates and accelerates Adaptation SMEs (Trabacchi et al., 2020[23]).

ASAP focuses on two different categories of SMEs based on their service offerings. The first category encompasses SMEs which provide Climate Adaptation Intelligence used to identify and assess physical climate risks. This includes SMEs that provide services or products which identify physical and climate risks, specific to context and location and can be used to support decision-making. Other examples include climate data products to evaluate and monitor risks as well as climate and weather modelling. The second category of eligible SMEs address climate risks by providing Climate Adaptation Products and Services which improve resilience to climate risks. Examples include services which secure electricity supply or weather-indexed insurance products (Trabacchi et al., 2020[23]). In April 2022, the Lightsmith Group choose 16 startups in Asia and Africa from more than 300 applicants that provide solutions in diverse sectors such as in water, agriculture, risk analytics, supply chain, infrastructure, and insurance to strengthen climate adaptation and resilience (ASAP, 2022[24]).

Development finance (and public sector) partners

The development finance partners engaged in ASAP are the GEF which provides grant funding through its implementing agency, Conservation International (Trabacchi et al., 2020[23]). Further funding and support in the development of the adaptation solutions taxonomy was provided by IDB and IDB lab (IDB, 2020[25]). The Proadapt Program that has been co-financed by IDB/IDB Lab and NDF provided further funding. For ASAP, GEF provides approximately USD 2 million with USD 500 thousand in co-financing by IDB, Conservation International, other Development Banks and Accelerators/Incubators (GEF, 2019[26]).

Private sector partners

There are two main private sector partners. ASAP is led by Lightsmith Group, and in 2021 it also partnered with venture capital firm Village Capital (ASAP, 2021[27]). Firms which are selected for ASAP can join an online platform provided by Village Capital to match firms with investors and other resources (Village Capital, 2021[28]). Beyond the Lightsmith Group and Village Capital which lead the accelerator program,

key private sector actors are the SMEs in developing countries which participate in ASAP. Examples include Hiraya Water, which is based in the Philippines and offers water management products which reduce water loss and power consumption of water utilities, using artificial intelligence. India-based Aumsat Technologies LLP uses Artificial Intelligence (AI) and satellite-based analysis to help identify ideal locations for well digging, to improve resilience to droughts and water scarcity. Agromyx, based in Ghana, increases resilience in the agricultural system by creating shelf-stable food products from non-marketable post-harvest crops to reduce food waste (ASAP, 2022[24]).

Challenge and solution

ASAP identifies several barriers which SMEs face in developing and disseminating innovative solutions for climate adaptation and resilience. These range from lack of local support for SME ecosystems, lack of awareness surrounding both the risks and opportunities climate change represents or lack of available decision-making tools to deal with climate change and to incorporating information into decision-making processes. Importantly, there are also technology-specific challenges such as gaps in technology maturity as well as insufficient diffusion and technology transfer (Trabacchi et al., 2020[23]). To address these, challenges ASAP makes three main contributions:

1. **Facilitating adaptation solutions by SMEs.** Selected SMEs that are enrolled into ASAP receive technical assistance and support to overcome barriers to scale and commercialisation. Further, enrolled firms are connected to industry experts and investors (Guidebook for Just Financing, n.d.[29]). By carefully selecting, supporting, and easing access to resources, ASAP makes an important contribution to increasing the number of available innovative adaptation solutions.
2. **Enhancing knowledge diffusion by creating a network of adaptation SMEs**. While SMEs part of a current cohort in ASAP are important, they alone will not solve the large need for climate adaptation. By creating regional networks of adaptation SMEs and by connecting adaptation SMEs with each other, ASAP makes an important contribution to knowledge diffusion in the adaptation space, with the potential to facilitate the broad uptake of organizational practices and business models which increase resilience (GEF, 2019[26]).
3. **Facilitating investments for adaptation SMEs.** By developing a clear taxonomy which determines what an “adaptation SME” is – and which can be applied outside of the realms of ASAP to SMEs in different sectors – ASAP provides an important tool for investors wanting to invest in SMEs engaged in adaptation and looking for guidance in the selection process (Trabacchi et al., 2020[23]). ASAP has also created an Adaptation SME Directory for investors, a global network with over 400 adaptation SMEs (Guidebook for Just Financing, n.d.[29]).

Case Study 4: Climate Investor 2

Climate adaptation funds are scarce. The financing needs of the water sector in particular are immense, yet the financial resources devoted to this sector, especially by private actors, remain limited (OECD, 2019[30]). Climate Investor 2 (CI2) is a blended finance facility set up by CFM which addresses this problem. CFM is an investment manager set up as a joint venture between the Dutch Entrepreneurial Development Bank (FMO) and Sanlam InfraWorks, an infrastructure-focused investment company (Climate Fund Managers, n.d.[31]). CI2 follows its predecessor Climate Investor One (CI1) which seeks to encourage private sector investment in renewable energy projects (FMO, n.d.[32]). CI2 has the mandate to facilitate infrastructure investments and mobilise private sector investment in developing countries for sectors related to water, sanitation, and oceans. Importantly, in these sectors, CI2 seeks to contribute to both climate adaptation and mitigation benefits, thereby harnessing spill-over effects (Green Climate Fund, 2022[33]). In the water sector, CI2 aims to improve the sourcing, transportation, and treatment of water to improve water supply and distribution. Infrastructure to improve waste and wastewater treatment is the

focus in the sanitation sector, while investments in (fuel-efficient) ports, ships and harbours form the basis for CI2's activities in the ocean sector. Importantly, as part of its activities in the ocean sector, CI2 will also pursue investments in ecosystems and nature-based solutions to foster ecosystem-based adaptation. In total, CI2 intends to construct infrastructure worth USD 2.96 billion with considerable developmental impacts (providing approximately 11.18 million people with water access, strengthening about 1.7 million Ha in ecosystems and avoiding about 4.96 million tCO2e annually) (Green Climate Fund, 2022[33]). After its initial close in November 2021, CI2 had secured USD 675 million in commitments, a sum which increased to USD 855 million following investments from Swedfund (USD 35 million) and the GCF (USD 145 million) during its recently closed second round (Climate Fund Managers, 2022[34]).

Similarly to CI1, CI2 offers a "whole-of-life" financing approach through three different funds, each of which provides financing at different points in the lifecycle of the respective infrastructure projects (Nordic Development Fund, 2022[35]). The first fund is the *Development Fund*, which offers development loans and technical assistance to project companies, in order to expedite the development process of the infrastructure projects, and to reduce the time to financial close, thereby increasing project bankability (Green Climate Fund, 2022[33]). The Development fund has a size of USD 90 million and can fund up to 50% of project's planning and development (Climate Fund Managers, 2022[36]). The *Construction Equity Fund* provides financing after the development phase. The fund provides 100% of the equity required: by funding projects exclusively through equity, CI2 seeks to reduce complexity and costs, construction time and removes certain debt-specific costs. Further, it repays the development loan with a premium to the Development Fund (Green Climate Fund, 2022[33]). The *refinancing fund*, which is not set up yet, will provide long-term senior debt to projects once these are fully operational (Climate Fund Managers, 2022[37]).

Development (and public sector) partners

There are numerous public sector partners involved in CI2. Development finance partners are primarily involved as providers – for instance, to fund the capital needed for the *Development Fund* as well as the riskier junior equity for the *Construction Equity Fund.* Public actors include FMO, the Dutch Fund for Climate and Development (DCDF), a fund financed by the Dutch Ministry of Foreign Affairs. Further public actors include the European Commission, the Nordic Development Fund and BNG Bank (which is half-owned by the state of the Netherlands and half-owned by other public actors like municipalities and provincial authorities). Most recently, the Swedish DFI Swedfund as well as the GCF also committed financial resources to CI2 (Climate Fund Managers, 2022[34]).

Private sector partners

Private investors in CI2 include the Norwegian pension fund KLP, the Swedish IMAS Foundation, South African financial services group Sanlam, and Dutch asset management firm Aegon (Climate Fund Managers, 2022[34]). The mobilisation of capital from such private actors is imperative to close the financing gap in the typically underinvested water sectors – and CI2 therefore represents an important vehicle that has the potential to increase financial resources for climate adaptation. Further, the involvement of institutional investors such as Aegon and KLP creates an evidence base for the commercial viability of water-based infrastructure investments in developing countries.

Challenge and solution

As CI2 improves the availability of clean water and sanitation through its infrastructure investments, it is closely related to Sustainable Development Goal (SDG) 6. Research shows that to meet targets 6.1 (universal access to drinking water) and 6.2 (access to sanitation and hygiene) alone, annual investments of USD 114 billion are required (Hutton and Varughese, 2016[38]). Financing needs for water infrastructure, in general, are a lot higher and estimated at USD 6.7 and USD 22.6 trillion by 2030 and 2050, respectively

(OECD, 2018[39]). Devoting resources to the water, sanitary and ocean sectors is also imperative for purposes of climate adaptation. Resilient water and sanitation infrastructure may be critical in the face of climate change induced water scarcity as well as to deal with extreme weather events such as droughts and floods. Given the immense financial resources needed, the mobilisation of private capital is imperative. In this regard, CI2 makes two main contributions:

1. **Mobilising additional financial resources.** CI2 is a blended finance structure and provides tailored risk-return options for different investor types through the three-tier equity structure of the *Construction Equity Fund* (CEF). The CEF includes junior (tier 1), ordinary (tier 2) and senior (tier 3) equity tranches. Development finance actors such as GCF provide funding for the riskiest junior equity tranche and thereby absorb part of the infrastructure project risks (Green Climate Fund, 2022[33]). In the case of losses, the claims of tier 3 and 2 equity investors are met first. Tier 2 is expected to attract impact investors and DFIs, while tier 3 is reserved for institutional and private investors. Through its blended structure, CI2 expects a mobilisation ratio of 1:4 at the fund level: for every USD invested in tier 1 equity, an investment of 4 USD in the senior tranches is expected (Green Climate Fund, 2022[33]).
2. **Increasing the evidence base for commercial viability of infrastructure projects.** Beyond the private capital directly mobilised, CI2 also contributes to a paradigm shift in perceptions of private investors. It seeks to prove the validity of its financing approach to create commercially viable and bankable projects in infrastructure dedicated to climate mitigation and adaptation purposes in the water, ocean, and sanitary sectors (Green Climate Fund, 2022[33]). Through its "whole-of-life" only equity financing arrangement, it also provides a case study that, if successful, may be replicated by other development financiers. Over time, it therefore contributes to market building efforts.

Case Study 5: EBRD 'climate resilience bond'

The growing investor appetite for sustainable finance products is associated with a significant rise in the issuance of green, social, sustainability and sustainability-linked bond instruments (OECD, 2022[40]). For investors, the attractiveness of green, social or sustainability (GSS) bonds in particular lies in the fact that bond proceeds are earmarked towards sustainable projects or assets. According to projections by Amundi and the International Finance Corporation (IFC), annual green bond issuances in emerging markets will total USD 150 billion annually from 2023 (Amundi and IFC, 2022[41]). The increased appetite for GSS bonds offers an important new channel to increase financial flows devoted to climate adaptation. This is critical not only to make economies resilient, but it is also important as the large majority of climate finance thus far has been directed towards climate mitigation rather than adaptation (CPI, 2022[42]).

In 2019, EBRD issued the world's first dedicated climate resilience bond (CRB) and raised over USD 700 million through the issuance with demand from 40 investors from various countries (EBRD, 2019[43]). Investor appetite for such a product is exemplified by the fact that the bond was oversubscribed by USD 200 million (Smith, 2019[44]). The CRB has reached a total volume of USD 1.15 billion since then (EBRD, 2022[45]). The CRB is part of EBRD's larger green bond framework, which also includes the Environmental Sustainability Bond and the Green Transition Bond.

The proceeds of the CRB are used to finance climate-resilient projects within EBRD's Climate Resilience Portfolio, which as of November 2022 included EUR 1.4 billion in operating assets (EBRD, 2022[46]). The portfolio is composed of projects which aim to increase the climate resilience of financed assets or improve the climate resilience of the systems to which these assets belong. Expected climate resilience goals among others include increased availability of water and energy and decreased weather damage and disruption. Climate resilience is typically supported by providing financing in three areas: (i) financing for infrastructure such as in water, energy, transport, communications, and urban infrastructure; (ii) financing for business and commercial operations, which may encompass investments for water efficiency or

investments to reduce the vulnerability of firm value chains to extreme weather events and (iii) financing for agricultural and ecological systems such as water-efficient irrigation systems, forest management or activities to prevent soil erosion (EBRD, 2022[46]).

Selected projects are reviewed by the Environmental and Sustainability Department to ensure the consistency of selected projects with Climate Resilience Principles (EBRD, n.d.[47]). These have been devised by an expert group including development finance professionals from the EBRD and financial sector experts. The Climate Resilience Principles include an assessment of the physical climate risk to which assets or activities are subjected to, using top-down risk assessment and climate models. Issuers must also prove that risks are mitigated, and that the asset's climate resilience is improved. They must also conduct a trade-off between resilience and mitigation efforts and continuously monitor and evaluate the assets and activities to ensure that they continue to meet their adaptation purposes (Climate Bonds Initiative, n.d.[48]).

Development finance (and public sector) partners

The most obvious development finance partner of the CRB is the EBRD itself. The CRB can also be situated within a larger ecosystem of public or publicly funded actors. Together with the Climate Bonds Initiative and the Global Center on Adaptation, EBRD has published guidelines for those interested in issuing bonds for purposes of climate resilience and adaptation as well as reports on the market potential for climate resilience bonds (EBRD, 2021[49]; Climate Bonds Initiative, Global Center on Adaptation, EBRD, 2021[50]). The public sector can also be represented as loan recipients (funded by the bond proceeds), for instance if the recipient is a state-owned enterprise. An example includes a EUR 200 million loan to the state-owned Société Nador West Med, which will finance a port in Morocco with equipment designed to withstand extreme temperatures and weather events (EBRD, 2022[46]). EBRD has most recently extended another loan to Société Nador West Med and expects significant foreign direct investment and private sector involvement in the climate-resilient port project (EBRD, 2022[51]).

Private sector partners

Acting as bookrunners to the issuance of the first CRB were private banks BNP Paribas, Goldman Sachs, and Skandinaviska Enskilda Banken AB (EBRD, 2019[43]). However, beyond the mechanics of raising the capital, there is a more important entry point for the private sector: the CRB is, in itself, a channel for private investment into climate adaptation and resilience. Indeed, 32% of investors of the original USD 700 million bond were asset managers, 28% were banks and 9% were insurance firms and pension funds. The remaining 31% were central banks and other official institutions. In terms of geographic distribution, 58% of investors came from Europe, 28% from North America and 14% from Asia (EBRD, 2019[52]).

Challenge and solution

The main challenge lies in scaling financing for adaptation purposes. As mentioned above, climate finance flows have been heavily focused on mitigation rather than adaptation. Estimates of annual financing needs for adaptation purposes are quite high. UNEP estimates adaptation needs to be between USD 160 – 340 billion until 2030, and estimates are higher at USD 315 – 565 billion by 2050 (UN Environment Programme, 2022[53]) (UNEP 2022). Two main contributions of the CRB can be identified:

1. **Mobilising private finance.** Given these large financing needs, attracting private finance is critical to close the "adaptation gap". The EBRD's CRB makes an important contribution to this by attracting significant private sector finance for a bond instrument dedicated to financing projects with purposes of adaptation and resilience. It is particularly noteworthy that the investor base of the CRB was mostly composed of large institutional investors (EBRD, 2020[54]), who are critical to achieving the necessary scale but often complicated to mobilise due to potential constraints caused

by investor's mandates which may prevent them from investing in emerging markets. Investing in a bond by a triple-A-rated institution, which then uses the proceeds to finance projects or assets in emerging markets, may potentially address this issue.

2. **Broadening the evidence base for adaptation bonds by pioneering the use of such instruments.** The EBRD's CRB can provide a blueprint for other MDBs – and issuers more broadly – who may be interested in contributing to closing the adaptation gap by emulating the approach and following the guidance produced by EBRD to issue their own climate resilience bond. For this purpose, the EBRD's Climate Resilience Bond Framework and 'Frequently Asked Questions' document can also be useful reference points for potential issuers or investors.

Case Study 6: Development Bank of Japan business continuity management (BCM) Rated Loan Program

"Going concern" is a key principle often referred to in business studies and accounting. It implies that businesses will continue to operate indefinitely if they have the resources to do so. Some of the immediate effects of climate change – such as unpredictable weather patterns or more frequent natural disasters – can severely disrupt businesses, for instance by damaging infrastructure and production facilities, supply chains and access to markets. In worst-case scenarios, businesses can instantly be rendered unprofitable, forcing them to exit the market and threatening "going concern". Adaptation to moderate the potential harm of climatic stimuli is becoming of increasing importance for firms to ensure business continuity (IPCC, 2007[55]). In this context, business continuity management (BCM) – a process aimed at building resilience by identifying risks and the potential effect these can have on business processes – is becoming increasingly important (Sapapthai et al., 2020[56]). According to the 2022 Horizon Scan Report of the Business Continuity Institute, which surveyed 424 business professionals in functional areas such as business continuity and risk management, 33.9% of survey respondents note that they will increase investment for business continuity and more than 50% are engaged in the process of BCM (BCI, 2022[57]).

Business continuity and resilience are important for the firm itself, but also for the creditors. As BCM helps firms anticipate and successfully deal with potential disruptions, it can provide creditors with a higher degree of confidence in the long-term viability of their debtors (and their loan repayments). The Development Bank of Japan (DBJ) is an example of a creditor which proactively assesses BCM efforts and provides preferential interest rates to firms with high BCM ratings, thus signalling that BCM expenses result in a significant value rather than solely representing a cost (DBJ, 2022[58]).

Development (and public sector) partners

The DBJ BCM Rated Loan Program is the world's first loan program which rates firms based on their disaster prevention, business continuity and crisis management measures. A key player is the Development Bank of Japan (100% owned by the Government of Japan) for which sustainable development is a central part of its mission (DBJ, n.d.[59]). The DBJ BCM Rated Loan Program has its roots in the Enterprise Disaster Resilience Rated Loan Program which was established in 2006 and focused on companies' disaster prevention efforts. After the Great East Japan Earthquake in 2011, DBJ revised the evaluation items to place more emphasis on BCM. In 2016, evaluation items were updated to improve effectiveness and allow for comprehensive evaluations of management strategies and response capabilities (DBJ, 2022[60]). In fiscal year 2021, DBJ has executed 25 deals within the BCM Rated Loan Program. The loans extended through the scheme total JPY 536 billion (USD 3.92 billion) (DBJ, 2022[61]). Beyond providing the loans DBJ also operates the "The BCM Rating Club" which includes DBJ clients with a BCM rating (including disaster prevention ratings) as well as members of DBJ's network of crisis management organizations (DBJ, 2022[62]).

Private sector partners

The principal private sector partners in the BCM Rated Loan Program are the borrowers benefitting from the rating scheme. Examples include Suzuyo & Co., Ltd. a logistics company which provides port and global distribution services. Suzuyo's activities also include cargo handling and transport activities for providing emergency relief supplies during disasters. For its disaster solutions as well as its measures for business continuity, DBJ provided financing under the BCM Rated Loan Program (DBJ, 2022[61]). Another example is Shiraken Kamaboko, a marine product processing company selling fish cake products. After three of the firm's plants were severely damaged during the 2011 earthquake, it still managed to resume production a month after its plants were shut down. Shiraken Kamaboko's BCM ranking and the corresponding access to preferable interest rates are based on the strength of the company's BCM system in an emergency, measures taken to enhance the effectiveness of the business continuity strategy, and the reduction of supply chain risk via information sharing arrangements (DBJ, 2020[63]).

Challenge and solution

Companies that qualify for the BCM loan program receive access to preferential interest rates which are determined by the level of achievement within the BCM rating methodology. The underlying assessment scheme focuses on disaster prevention measures (e.g., firefighting and disaster prevention plans, prevention training programs) and business continuity measures (e.g., understanding of business continuity risks, risk assessment and risk strategies, business impact analysis). DBJ employs a three-tier rating which classifies firms as having excellent, advanced, or sufficient business continuity planning and disaster measures in place. Ratings are constructed using a questionnaire, and the questions can be attributed to the two pillars of disaster risk reduction and prevention and BCM as well as different sub-categories (DBJ, 2022[60]). The BCM Rated Loan Program contributes to adaptation in three ways:

1. **Scaling financing available for adapted activities**. By exclusively lending to corporates that have proved mechanisms and processes in place to deal with the impact of climate change, the programme serves to select and scale sustainable and profitable business models, thereby contributing to aggregate resilience of economy.
2. **Mobilising finance for resilience and adaptation.** While the appetite for "green" or "sustainable" finance seems to be large, private investment devoted towards adaptation remains limited. DBJ has issued sustainability bonds each year since 2015, and the proceeds are used for DBJ's sustainable lending activities, which include the BCM Rated Loan Program as well as others like the Environmentally Rated Loan Program (DBJ, 2022[61]). DBJ thus channels private capital raised via its sustainable bond program into loan programs dedicated to firms which have robust BCM processes and are thus characterized by higher resilience and adaptive capabilities.
3. **Incentivising private sector firms to improve adaptive capabilities and BCM**. Both investors and firms tend to evaluate investment decisions by assessing the return on investment (ROI), and quantifying this is easier for some activities than for others. Improving resilience through efforts of adaptation, for instance by setting up BCM, will not generate immediate cash flows but rather will reduce future costs. This cost-reducing benefit accrues most obviously when there is a disruptive event for which respective firms are then better prepared. By "rewarding" firms with better disaster risk reduction capabilities and better BCM processes through access to preferential interest rates, the BCM Rated Loan Program sets an important financial incentive for the private sector to improve its adaptive capabilities. This is an incentive that the private sector may otherwise not have as the cash flow potential of BCM and resilience efforts are not readily apparent and difficult to quantify.

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Notes

[1] Public ownership in this context includes ownership by the state and/or respective National Hydrological and Meteorological Services.

Annex B. Country groupings

Developed and developing countries

For the purpose of this report's analysis and figures, the following classifications are used:

- "Developing countries", which refer to countries and territories included on the 2018 DAC List of ODA Recipients for 2018 development finance and/or on the non-Annex I list of Parties to the UNFCCC.
- "Developed countries", which include Annex II Parties to the Convention, the Member States of the European Union, Liechtenstein, and Monaco.

Countries and territories that do not fall in these categories (most notably Russia) are not covered by the analysis.

Table B.1. Developing countries: Non-Annex I Parties on the DAC List of ODA Recipients

Afghanistan	Dominica	Liberia	Saint Lucia
Albania	Dominican Republic	Libya	Saint Vincent and the Grenadines
Algeria	Ecuador	Madagascar	Samoa
Angola	Egypt	Malawi	Sao Tome and Principe
Antigua and Barbuda	El Salvador	Malaysia	Senegal
Argentina	Equatorial Guinea	Maldives	Serbia
Armenia	Eritrea	Mali	Sierra Leone
Azerbaijan	Eswatini	Marshall Islands	Solomon Islands
Bangladesh	Ethiopia	Mauritania	Somalia
Belize	Fiji	Mauritius	South Africa
Benin	Gabon	Mexico	South Sudan
Bhutan	Gambia	Micronesia	Sri Lanka
Bolivia	Georgia	Moldova	Sudan
Bosnia and Herzegovina	Ghana	Mongolia	Suriname
Botswana	Grenada	Montenegro	Syrian Arab Republic
Brazil	Guatemala	Morocco	Tajikistan
Burkina Faso	Guinea	Mozambique	Tanzania
Burundi	Guinea-Bissau	Myanmar	Thailand
Cabo Verde	Guyana	Namibia	Timor-Leste
Cambodia	Haiti	Nauru	Togo
Cameroon	Honduras	Nepal	Tonga
Central African Republic	India	Nicaragua	Tunisia
Chad	Indonesia	Niger	Turkmenistan
China (People's Republic of)	Iran	Nigeria	Tuvalu
Colombia	Iraq	Niue	Uganda
Comoros	Jamaica	North Macedonia	Uzbekistan
Congo	Jordan	Pakistan	Vanuatu
Cook Islands	Kazakhstan	Palau	Venezuela
Costa Rica	Kenya	Panama	Viet Nam
Côte d'Ivoire	Kiribati	Papua New Guinea	West Bank and Gaza Strip

Cuba	Kyrgyzstan	Paraguay	Yemen
Korea	Lao People's Democratic Republic	Peru	Zambia
Democratic Republic of the Congo	Lebanon	Philippines	Zimbabwe
Djibouti	Lesotho	Rwanda	

Table B.2. Developing countries: Non-Annex I Parties beyond ODA Recipients

Andorra	Chile	Korea	Saint Kitts and Nevis
Bahamas	Israel	San Marino	Trinidad and Tobago
Bahrain	Kuwait	Saudi Arabia	United Arab Emirates
Barbados	Oman	Seychelles	Uruguay
Brunei Darussalam	Qatar	Singapore	

Table B.3. Developing countries: ODA Recipients beyond the Non-Annex I Parties

Belarus	Montserrat	Republic of Türkiye	Ukraine
Kosovo	Saint Helena	Tokelau	Wallis and Futuna

Table B.4. Developed countries

Australia	European Union	Latvia	Portugal
Austria	Finland	Liechtenstein	Romania
Belgium	France	Lithuania	Slovak Republic
Bulgaria	Germany	Luxembourg	Slovenia
Canada	Greece	Malta	Spain
Croatia	Hungary	Monaco	Sweden
Cyprus (see "Notes")	Iceland	Netherlands	Switzerland
Czech Republic	Ireland	New Zealand	United Kingdom
Denmark	Italy	Norway	United States
Estonia	Japan	Poland	

Note by the Republic of Türkiye: The information in this document with reference to "Cyprus" relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. The Republic of Türkiye recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, the Republic of Türkiye shall preserve its position concerning the "Cyprus issue".

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of the Republic of Türkiye. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

Green Finance and Investment

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