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Short course 2: *Public and Private Sector Financing for Climate Change Adaptation*

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This workbook is part of **Short Course 2: Public and Private Sector Financing for Climate Change Adaptation.** It is packaged together with the associated PowerPoint presentation and an Instructor's Guide. This short course is the second in a series of five climate finance short courses developed by the UNI-LEAD project to strengthen capacities of universities within the LDC University Consortium on Climate Change to provide technical advice and services to their governments for increased access to climate finance. The project is funded by the GEF, implemented by UNEP and executed by START International in partnership with Climate Analytics, Inc.

List of acronyms and abbreviations

AF	Adaptation Fund
C-PIMA	Climate Public Investment Management Assessment
CBT	Climate Budget Tagging
CC	Climate Change
CCA	Climate Change Adaptation
CF	Climate Finance
CSPFM	Climate-Sensitive Public Finances Management
DFA	Debt-For-Adaptation
DFC	Debt-For-Climate
DFN	Debt-For-Nature
EbA	Ecosystem-based Adaptation
GCF	Green Climate Fund
GEF	Global Environment Facility
LDC	Least Developed Countries
LDCF	Least Developed Countries Fund
NAP	National Adaptation Plan
NbS	Nature-based Solutions
NDC	National Determined Contributions
PEER	Public Environmental Expenditure Reviews
PIMA	Public Investment Management Assessment
PPP	Public-Private Partnership
SDG	Sustainable Development Goals

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Introduction

This course 2 entitled ***Public and Private Sector Financing for Climate Change Adaptation*** provides an overview of the major funds and mechanisms within the climate finance landscape to support climate change adaptation in LDCs. This course complements and builds on Course 1 by providing a detailed examination of public and private sector financing that goes well beyond the multilateral schemes of the GEF, GCF, and AF, etc. that were covered in Course 1. This more detailed examination is important for the following reasons

1. **Growing adaptation needs**: Multilateral climate finance is insufficient to meet rapidly growing adaptation needs in LDCs.
2. **Competition for funds**: Multilateral climate funds are often prioritized for mitigation efforts, over adaptation.
3. **Complexity of accessing funds**: LDCs may encounter challenges in accessing multilateral climate finance due to bureaucratic hurdles, lack of expertise and the complexity of the application processes. This can impede their ability to secure the necessary funds for adaptation projects.
4. **Uncertainty and unpredictability**: The availability of multilateral climate finance can be uncertain and subject to political and economic factors. LDCs require stable, long-term financing to plan and implement effective adaptation measures.
5. **Challenges to finance local climate action**: There is growing recognition of the need to localize climate change adaptation and in doing so leverage existing subnational climate finance instruments.

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Overall course objective

The main objective of this course is to introduce participants to innovative/emerging financing mechanisms required from both public and private sector, to bridge the adaptation financing gap and help the Least Developed Countries (LDC) build resilience to climate change.

What to find in this course and where?

The content of this course on public and private sector financing for climate change is organized around three (3) parts and five (5) sessions which are:

Part 1: Public Sector Financing for Climate Change Adaptation

Session 1: Mainstreaming climate adaptation finance in public budgeting

Session 2: Debt-for-adaptation swaps

Part 2: Private Sector Financing for Climate Change Adaptation

Session 3: Private Adaptation Financing

Session 4: Carbon Market Mechanisms for adaptation funding

Part 3: Funding for subnational climate change adaptation

Session 5: Financing Subnational Climate Action

In addition to these 5 sessions, Course 2 provides relevant information and resources for each module/session as drawn from the PowerPoint presentation, which is provided as an annex at the end of this course document.

Session one – Mainstreaming Climate Adaptation Finance in Public Budgeting –– Tools and Approaches

1.1. Introduction

This first session focuses on public financing of adaptation to climate change. It presents the mechanisms by which public actors, particularly the government (national and subnational) through the **budget process**, can invest in strengthening the resilience of natural and human systems that are most vulnerable to climate change and, by doing so, address the direct and indirect impacts of climate change on livelihoods and important socio-economic sectors.

This first session of course 2 requires knowledge of the concepts related to government budgets, public finance management, and climate-sensitive public finance management, in particular through the integration of climate change into budgetary processes and the Climate Budget Tagging (CBT).

1.2. Learning objective

The learning objective of mainstreaming climate adaptation finance in public budgeting is to equip participants with the knowledge, skills, and strategies necessary to effectively integrate climate adaptation considerations into national and subnational public financial management systems.

This process involves understanding the principles, methodologies, and tools required to align public budgets with climate adaptation goals, ensuring that financial resources are allocated and utilized in ways that enhance the resilience of communities, economies, and ecosystems to the impacts of climate change.

1.3. Conceptual framework

The budget is an essential public policy tool. Indeed, public budgeting processes refer to the systematic procedures and practices that governments use to plan, allocate, monitor, and control the use of financial resources. These processes are essential for ensuring that public funds are used efficiently, effectively, and in a manner that aligns with policy goals and priorities.

Budgeting is the art of dividing available money between competing needs. The public budget is an annual plan of the government (national, regional, local), which refers to forecasted public revenue and expenditure. It involves setting priorities, estimating revenue, determining spending levels, and monitoring the use of funds.

Budgeting is a central component of Public Financial Management (PFM), and effective PFM relies on robust budgeting practices to ensure that public resources are used efficiently, transparently, and in alignment with policy goals.

PFM refers to the collection, management and expenditure of public finances throughout an economy. The core objective of public financial management is to improve citizens' lives through better management of public money.

In the context of climate change, the concept of Climate-Sensitive Public Finances Management (CSPFM) has recently emerged. It refers to the integration of climate change considerations into the management of public finances. This approach ensures that fiscal policies, budget processes, and financial management practices account for both the risks and opportunities presented by climate change. The aim is to create a resilient and sustainable economic framework that can withstand climate-related impacts and contribute to mitigating climate change.

The benefits of Climate-Sensitive Public Finances Management include:

- Enhanced resilience: Strengthening the ability of public finances to absorb and recover from climate-related shocks.
- Increased efficiency: Ensuring that public funds are used effectively to address climate challenges, reduce waste and maximize impact.
- Better planning: Facilitating long-term planning and investment decisions that account for future climate scenarios.
- Transparency and accountability: Improving the tracking and reporting of climate-related expenditures, leading to greater accountability and public trust.

Mainstreaming climate adaptation finance into public budgeting involves systematically integrating climate adaptation considerations into the entire public finance management cycle. This ensures that government expenditures, investments, and financial policies effectively address the challenges posed by climate change. It involves an integration of climate considerations into **financial planning**, **resource allocation**, and **expenditure management**. This ensures that resources are allocated effectively to mitigate the impacts of climate change and enhance the resilience of communities and ecosystems.

1.4. Entry points for climate adaptation mainstreaming in budgeting processes

Mainstreaming climate adaptation into budgeting processes ensures that financial resources are allocated effectively to enhance resilience against climate impacts. The following table presents key considerations for integrating climate adaptation into budgeting processes.

Table 1. Entry points for climate adaptation mainstreaming in budgeting processes

Phases	Considerations for integration
At resource allocation stage of policy cycle	▪ adapting the budgetary and Medium-Term Expenditure Framework (MTEF) processes to incorporate adaptation-related priorities in resource allocation procedures; ▪ reallocating funding to more vulnerable and/or priority sectors and regions; ▪ providing funding for adaptation-specific plans or activities; ▪ mainstreaming adaptation, in particular, may be helped by the establishment of a horizontal 'adaptation fund' from which sector departments and agencies can draw resources to finance the extra costs of addressing climate change in their programs and investments; ▪ adding climate change considerations to the criteria used for screening and selecting projects and investments; ▪ and making room for climate-related measures and activities identified in the context of cross-sectoral plans (e.g., disaster risk reduction plans).
At the time of preparing the budget circular	Instructions should be provided to line ministries and agencies on: ▪ the screening of sector programmes and projects for climate risks and other climate-related considerations; and ▪ the costing of adaptation-related policies and measures (and ideally also the valuation of their expected benefits).
At the sector resource allocation stage, in particular the preparation and submission of sector bids	Climate change integration at this stage requires: ▪ adding climate change considerations to the range of criteria used to screen and select projects and specific investments; ▪ incorporating adaptation projects, activities and measures identified at the sector planning stage; and ▪ making room in the budget for climate change responses identified in the context of cross-sectoral plans or claiming resources from a 'horizontal' fund to implement them.

1.5. Tools for mainstreaming climate adaptation and CSPFM in the budgetary process

1.5.1. Climate Budget Tagging (CBT)

The Climate-Sensitive Public Finances Management is implemented through a process known as **Climate Budget Tagging** (CBT). CBT is a tool for monitoring and tracking climate-related expenditures in the national budget system. It provides comprehensive data on climate-relevant spending, enabling governments to make informed decisions and prioritize climate investments. CBT enables public scrutiny on government and donors' spending on tackling climate change issues, and it strengthens accountability and transparency.

Climate change budget tagging is a government-led process of identification, measurement, and monitoring of climate relevant public expenditure.

Case studies

As shown in the 2, many countries have implemented pilot Climate Budget Tagging Initiatives. Further details are [provided in session 1.8 where the context, implementation strategies and outcomes of some CBT experiences in the LDCs are presented.

Table 2. Evolution of Climate Change Budget Tagging 2011-2021

Country	CPEIR (year)	Tagging Supported by	Fiscal Years Budget Tagging Applied	Application
Nepal	2011	UNDP	2013–present	Budget
Cambodia	2012	UNDP	2013–present	Review
Indonesia	2012	WBG	2014–present	Budget
Philippines	2013	WBG	2015–present	Budget
Ecuador	2017	UNDP	2016–present	Budget
Ghana	2015	UNDP	2016–present	Budget
Moldova	2017	UNDP	Not yet applied	Budget
Colombia	2018	WRI	2017	Review
Ethiopia	2014	WBG	2017	Review
Honduras	2016	UNDP, GEF	2017–present	Budget
Nicaragua	2015		2017–present	Budget
Pakistan	2015 and 2017	UNDP	2017–present	Budget
Kenya	2016	UNDP, UNEP	2017–present	Budget
Bangladesh	2012	UNDP	2018–present	Budget
Ireland			2019–present	Budget
Uganda	2013	WBG	2019–present	Budget
Odisha (India)			2020	Budget
France			2021	Budget
Mexico			2021	Budget

Source: WBG, 2021

1.5.2. Climate Public Investment Management Assessment (C-PIMA)

The Climate Public Investment Management Assessment (C-PIMA) tool is designed to help countries evaluate and enhance their capacity to integrate climate resilience and adaptation considerations into public investment management.

This tool, developed by the International Monetary Fund (IMF) and other partners, provides a systematic framework to assess how well climate risks and opportunities are being incorporated into the planning, allocation, and execution of public investments.

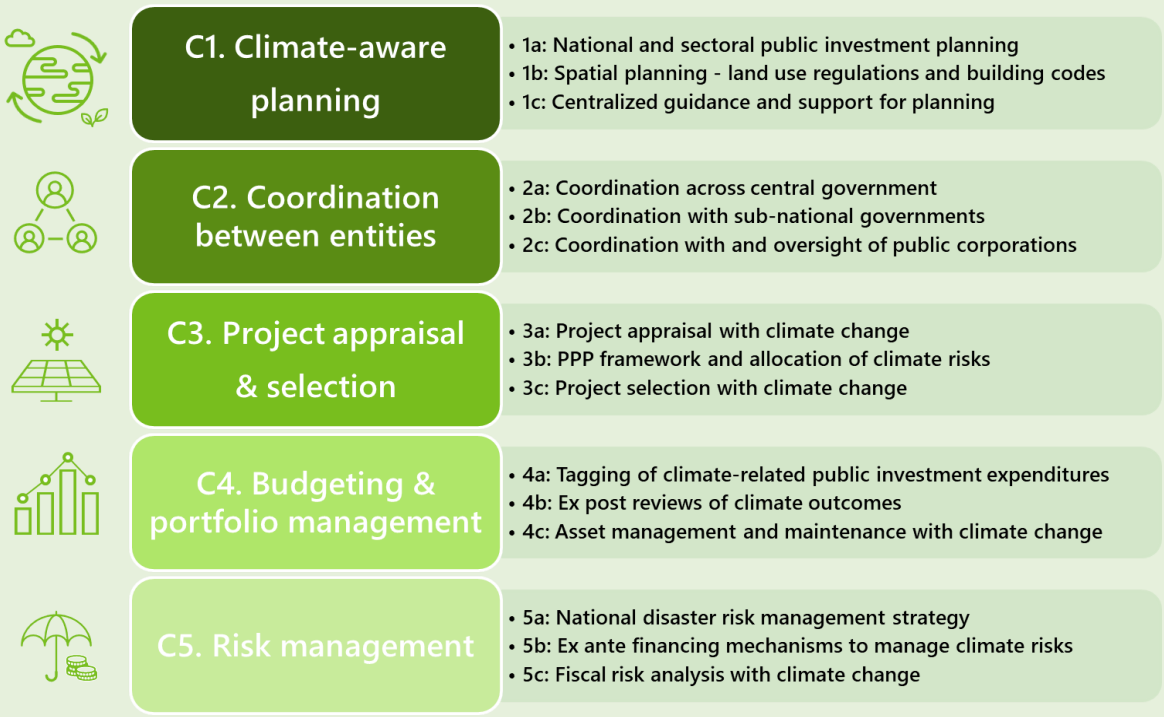

Figure 1. An Overview of the Climate PIMA, Source: IMF, 2022

The C-PIMA tool can help the LDC countries systematically improve their public investment management processes to better address climate risks and enhance overall resilience. The key implementation steps of the C-PIMA are the following:

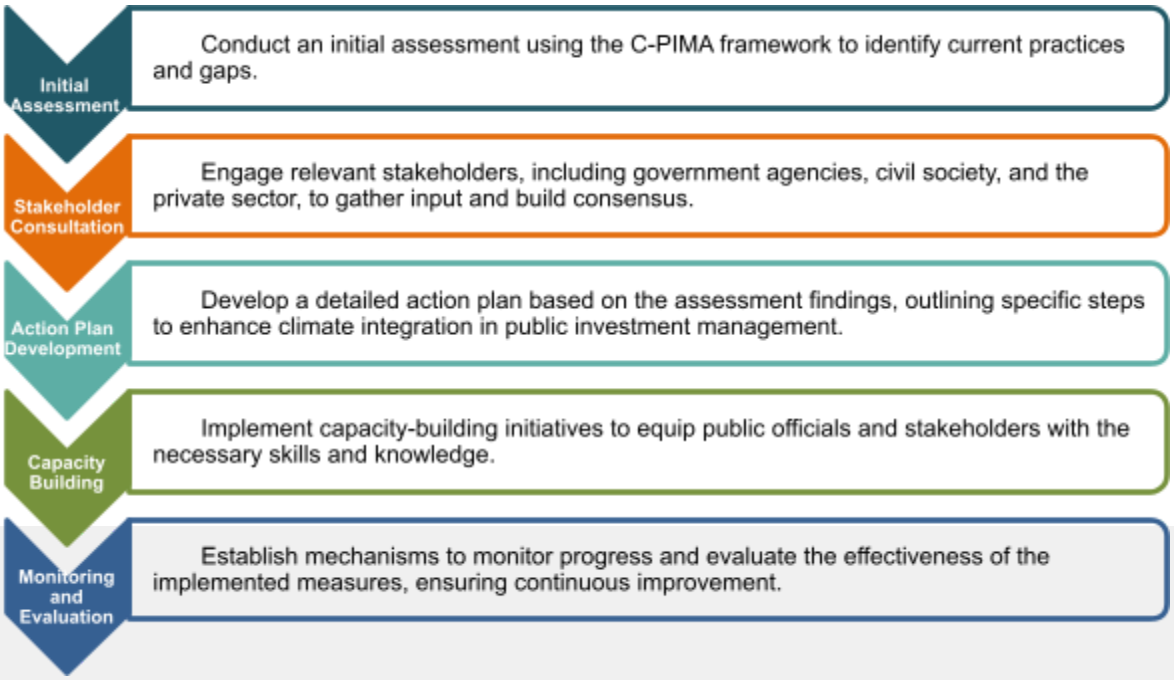

Figure 2. C-PIMA Implementation steps

1.5.3. Public Environmental Expenditure Reviews (PEER)

The Public Environmental Expenditure Reviews (PEER) is another tool that can also be used for mainstreaming climate adaptation in the budgetary process. The PEER is a tool for analyzing how budget resources are planned, allocated and actually spent across competing claims, objectives and priorities.

The PEER are public expenditure reviews focused specifically on environment-related expenditures, those incurred not only by the ministry of environment and environmental agencies, but also by other branches of government.

The PEER involves a comprehensive review of government expenditures related to environmental and climate issues, helping ensure that funds are effectively allocated to enhance climate resilience and adaptation. It helps in evaluating the current spending on environmental and climate-related activities, identifying gaps, inefficiencies, and areas for improvement. The instrument provides valuable insights for policymakers to make informed decisions and prioritize investments that support climate adaptation.

The process of conducting PEER enhances the capacity of government institutions to integrate climate considerations into financial planning and management. The following figure presents some entry points to support the integration of adaptation in the PEER exercise

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Figure 3. Entry points for mainstreaming climate adaptation in a PEER

1.6. Making Systems and Institutions Climate Finance Ready

Making systems and institutions climate finance ready involves establishing frameworks, building capacity, and ensuring that the necessary policies and procedures are in place to effectively access, manage, and utilize climate finance (as shown on the figure below).

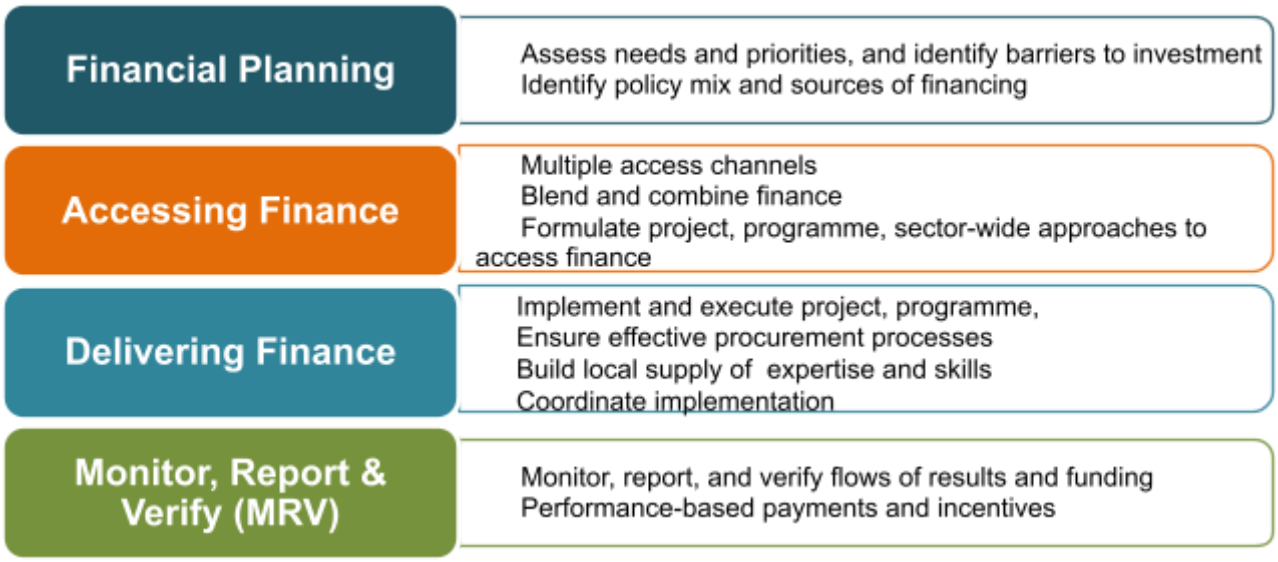


Figure 4. Steps in making systems and institutions climate finance ready

1.7. Challenges to mainstreaming climate adaptation in budgeting processes

The main challenges stakeholders face in mainstreaming climate adaptation in budgeting processes are related to (i) data and capacity, (ii) political will and (iii) coordination.

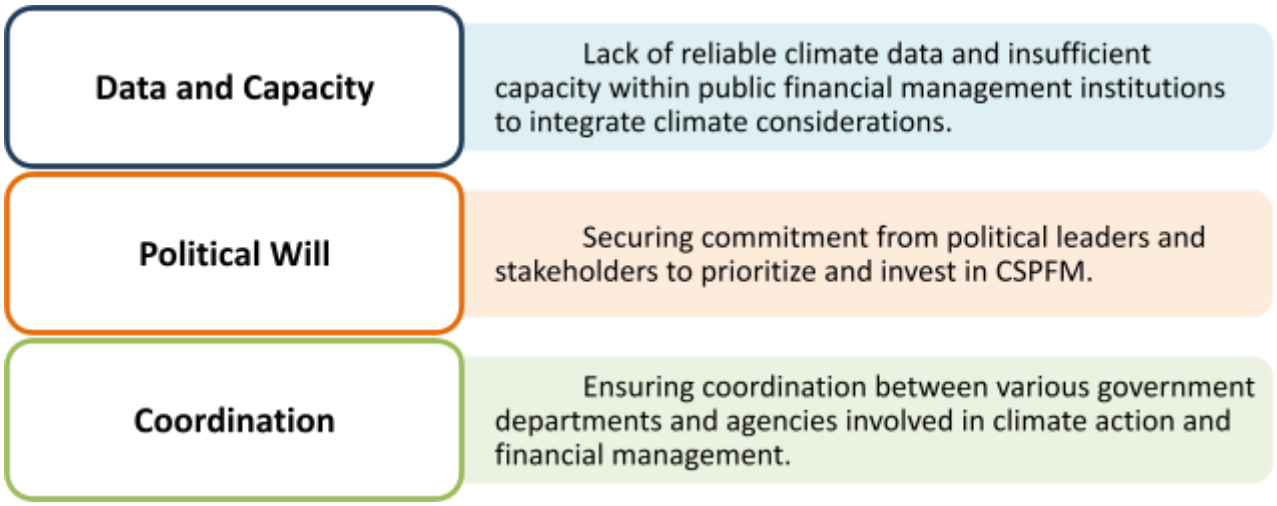


Figure 5. Challenges to mainstreaming climate adaptation in budgeting processes

1.8. Cases studies

Climate Budget Tagging (introduced on page 11) is a method used to track and analyze government spending related to climate change, ensuring that funds are effectively allocated towards climate action. This process is particularly crucial in LDCs where financial resources are limited, and the impacts of climate change can be severe. The following table presents some case studies of CBT implementation in LDCs:

	Context	Implementation	Outcomes
Ethiopia	As a drought-prone country, Ethiopia has implemented CBT to manage its climate adaptation and mitigation efforts.	▪ The Climate Resilient Green Economy (CRGE) strategy integrates CBT. ▪ Strong government commitment with dedicated budget lines for climate actions. ▪ Collaboration between various ministries for comprehensive budget tagging.	▪ Effective channeling of funds towards drought resilience and mitigation projects. ▪ Better integration of climate considerations into national development plans. ▪ Increased ability to attract international climate finance.
Uganda	Uganda's diverse ecosystems are under threat from climate change, prompting the need for effective financial tracking.	▪ Pilot projects for CBT began in 2015 with support from the Climate Change. ▪ Department Training for budget officers and sectoral ministries. ▪ Inclusion of CBT in the national budgeting software.	▪ More precise allocation of resources to vulnerable areas. ▪ Increased involvement of stakeholders in the budget planning process. ▪ Comprehensive reporting on climate finance flows.
Bangladesh	Bangladesh faces significant risks	▪ Since 2014, the Ministry of Finance	▪ Better alignment of financial

	from rising sea levels and extreme weather events. CBT is a key tool for managing climate finance effectively.	has incorporated CBT into its budgeting process. ▪ Detailed tagging across key sectors such as agriculture, water resources, and disaster management. ▪ Assistance from international agencies such as UNDP for capacity building.	resources with national climate strategies. ▪ Improved mechanisms for tracking climate-related expenditure. ▪ Acknowledgment from the international community for innovative climate finance management.
Nepal	Nepal, highly vulnerable to climate change due to its geography, has integrated CBT into its budgetary process to ensure efficient use of resources.	▪ The Government of Nepal adopted the Climate Change Financing Framework (CCFF) in 2012. ▪ Climate-related expenditures are tagged across different sectors, enabling the tracking of climate finance. ▪ Extensive training for government officials on CBT processes.	▪ Enhanced prioritization of climate-related projects. ▪ Greater accountability and transparency in climate financing. ▪ Informed policy-making through detailed expenditure reports.
Cambodia	Cambodia is highly vulnerable to climate impacts, particularly flooding and changes in precipitation patterns. CBT helps in tracking and utilizing climate funds effectively.	▪ The Ministry of Economy and Finance adopted CBT as part of the national budget. ▪ Extensive training for government staff on the principles and practices of CBT. ▪ Collaboration with international	▪ Improved efficiency in the use of climate funds. ▪ Enhanced capacity of government officials in climate finance management. ▪ Strengthened partnerships

		donors for technical and financial support.	with international climate finance mechanisms.

1.9. PRACTICAL EXERCISE 1

Conduct a self-evaluation of the level of mainstreaming of climate change adaptation into your national/subnational budgeting process, by responding to the following questions (use a scale of 1 (very low) to 5 (very high/excellent):

Questions	Scoring				
	1	2	3	4	5
Q1					
Q2					
Q3					
Q4					
Q5					
Q6					
Q7					
Q8					
Q9					
Q10					

Session Two – Debt-for-climate swap schemes

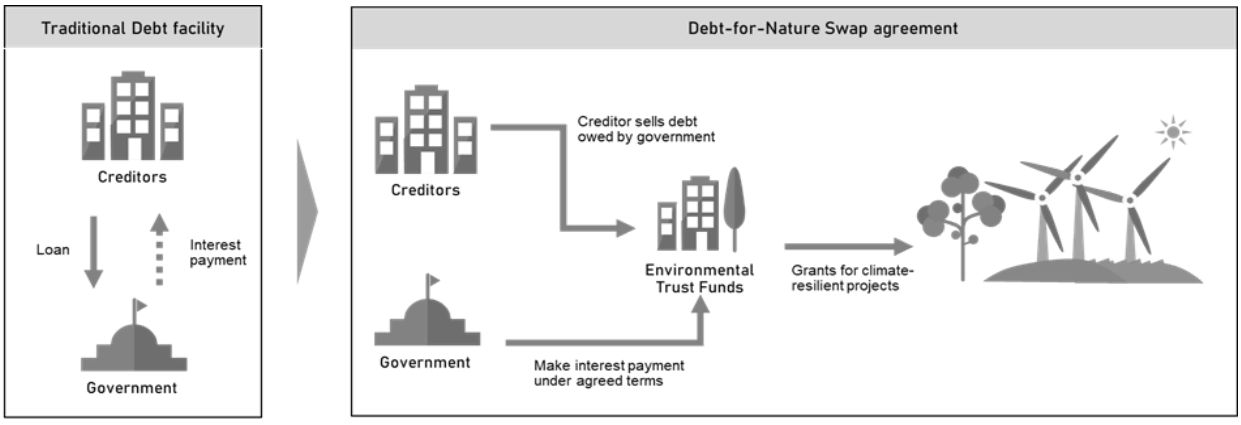
2.1. Introduction

Debt-For-Nature (DFN) Swaps developed in the 1980s provide a framework for new debt swap mechanisms related to climate change. These include the Debt-For-Climate (DFC) Swap and Debt-For-Adaptation (DFA) Swap. These are new concepts in financing mechanisms for climate action, and there is a generally low level of understanding of how these swaps can be developed and executed. Debt-for-climate swaps are financial arrangements through which a portion of a developing country's foreign debt is forgiven in exchange for commitments to invest in climate-related mitigation and adaptation initiatives. This concept builds on the debt-for-nature swaps that emerged in the late 1980s.

The concept of debt-for-nature swaps began in 1987 with a deal between Bolivia and Conservation International. Bolivia agreed to conserve a portion of its rainforest in exchange for debt relief.

2.2. Learning objective

The learning objective of this session on debt-for-climate swaps schemes aims to equip participants with the knowledge and skills necessary to understand, design, negotiate, implement, and monitor debt-for-adaptation swap agreements effectively.



An of illustration of Debt-for-Nature Swap, based on IIGF Green BRI Center 2021

Figure 6. Traditional Debt Facility vs Debt-For-Nature agreement

These swaps aimed to alleviate the debt burden of developing countries while promoting environmental conservation.

The success of debt-for-nature swaps inspired broader applications, including climate-related initiatives. The framework for debt-for-climate swaps emerged as a way to address both environmental and economic challenges. Early discussions and proposals focused on linking debt relief to investments in renewable energy, reforestation, and other climate mitigation/adaptation projects.

2.3. DFC swaps and the Paris Agreement

Debt-for-climate swaps are an innovative financial mechanism designed to address two pressing global issues: sovereign debt and climate change. These swaps involve the cancellation or restructuring of a portion of a country's debt in exchange for commitments to invest in climate-related initiatives. The primary goal is to free up fiscal resources for countries to enhance their climate resilience and mitigation efforts, thus supporting the implementation of the Paris Agreement.

The following framework highlights how the DFC mechanism can contribute to climate adaptation efforts and the NDC implementation.

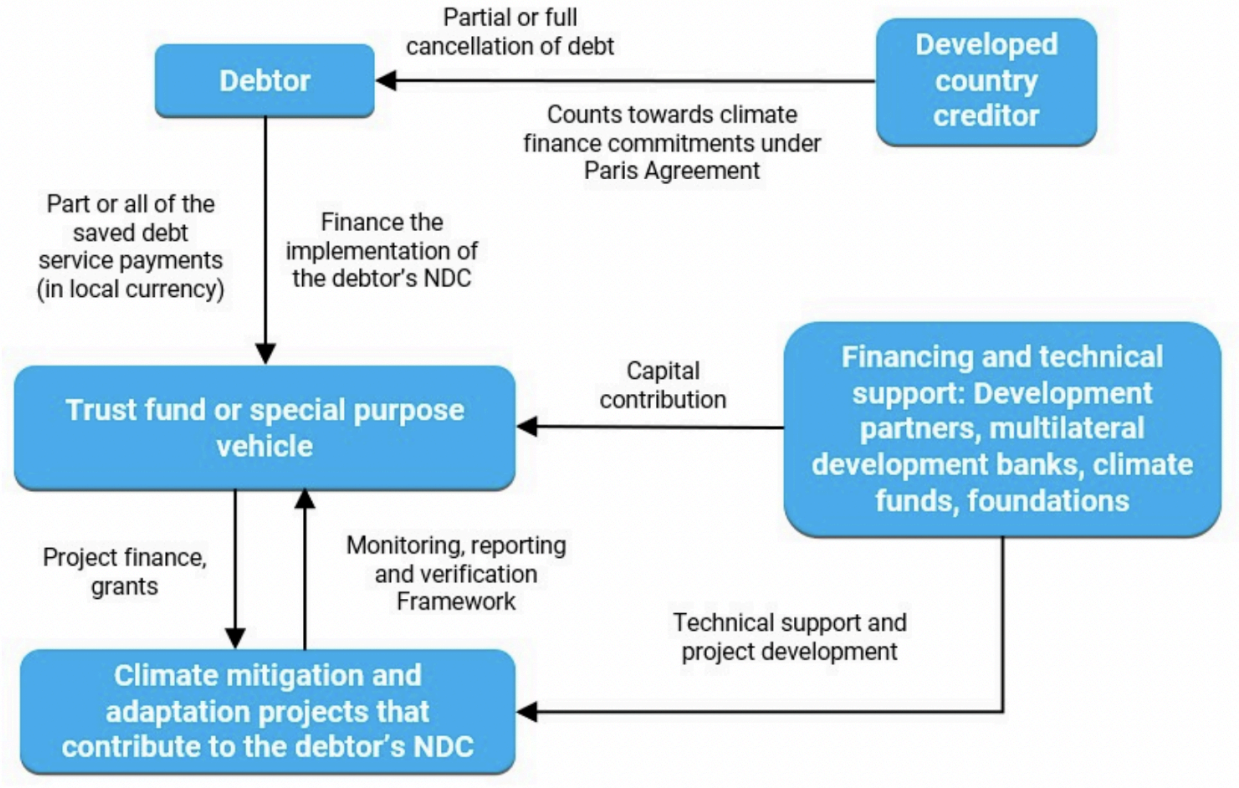


Figure 7. DFC framework and NDC implementation , Source: ESCAP, 2021[1]

[1] ESCAP, 2021. Debt-for-Climate Swaps as a Tool to Support the Implementation of the Paris Agreement. URL: https://www.unescap.org/sites/default/d8files/knowledge-products/PB_Debt-for-Climate%20Swaps_final.pdf

2.4. Debt-For-Climate (DFC): How does it work?

Debt-for-climate swaps work through a process that involves several key steps and the collaboration of various stakeholders.

In a debt-for-adaptation swap, countries who borrowed money from other nations or multilateral development banks could have that debt forgiven, if the money that was to be spent on repayment was instead diverted to climate adaptation and resilience projects.

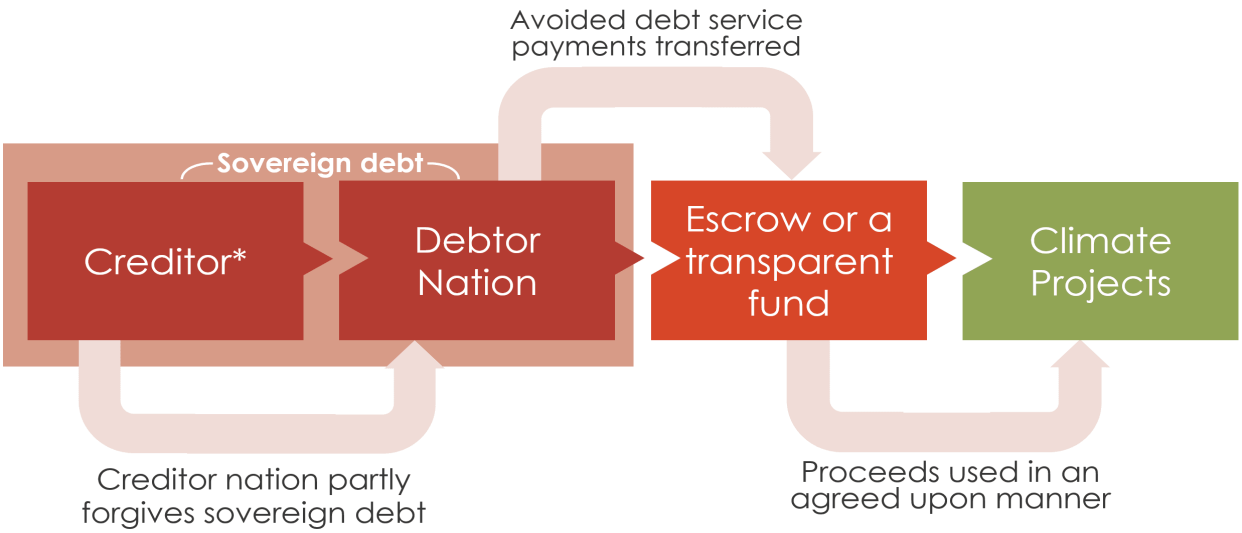


Figure 8. Debt-For-Climate (DFC) process Source: CPI, 2021

2.5. Debt-For-Adaptation (DFA) outcomes

Debt-for-adaptation swaps can have several significant outcomes, both for the debtor countries and the global community.

Financial Relief and Economic Stability

On the one hand, debt reduction provides immediate financial relief to heavily indebted countries, freeing up resources that would otherwise go to debt repayments. On the other hand, by alleviating debt burdens, these swaps can help stabilize the economy, allowing the government to allocate more funds towards essential services and development programs.

Enhancing Climate Resilience

DFA can help enable financing of infrastructure resilience in LDCs. The swap funding can be directed towards building or enhancing infrastructure to withstand climate impacts, such as flood defenses, improved drainage systems, and climate-resilient housing. Moreover, projects can include restoring natural ecosystems, such as wetlands, mangroves, and forests, which can act as natural barriers against climate impacts and that can enhance biodiversity.

Social and Environmental Benefits

Enhanced resilience and environmental restoration can improve agricultural productivity, water security, and overall quality of life, especially for rural and marginalized communities. Also, by investing in adaptation projects, vulnerable communities are better protected against the adverse effects of climate change, such as extreme weather events.

Contributing to Global Climate Goals

DFA contributes to international efforts to address climate change. Through this mechanism, debtor countries can better participate in and contribute to global climate initiatives and commitments, such as the Paris Agreement. Moreover, successful debt-for-adaptation swaps can serve as a model for innovative climate finance mechanisms, encouraging other countries and institutions to adopt similar approaches.

2.6. The case for Debt-for-adaptation swaps

Debt-for-adaptation swaps use the same principles as the Debt-For-Climate Swaps. They are financial arrangements where a portion of a country's debt is forgiven or reduced in exchange for commitments to invest in climate adaptation projects. These swaps aim to alleviate the financial burden of indebted nations while promoting environmental sustainability and resilience to climate change.

Indeed, in the absence of a significant inflow of grant money, innovative solutions are needed to overcome the barriers to scaling up climate finance for adaptation. By using debt-for-adaptation swaps, climate finance for adaptation can be mobilized while simultaneously tackling debt distress. The main advantage of this mechanism is that it contributes to *tackling the twin crises of climate vulnerability and debt distress.*

2.7. Case studies

Seychelles (2018)

Seychelles is the first country to undertake a debt-for-nature swap to encourage marine conservation. The deal enabled Seychelles to swap USD 21.6 million in debt in exchange for the creation of two major marine reserves, helping the country achieve its goal of 30% marine protection. This is an example of a debt-for-nature swap where debt was sold at a discounted rate, and different organizations chipped into fund conservation and climate adaptation projects. The Nature Conservancy's low-interest loan of USD 15.2 million mobilized USD 5 million in grants from philanthropic foundations to buy the outstanding debt on behalf of Seychelles. The estimated savings for Seychelles were about USD 2 million per annum due to reduced debt service charges.

The Government of Seychelles used proceeds from the debt conversion to capitalize the Seychelles Conservation and Climate Adaptation Trust. The trust, with additional resources mobilized from the Global Environment Facility and the United Nations Development Programme, provided funds to support marine protected areas, sustainable fisheries, and initiatives that contribute to the conservation and protection of biodiversity and climate change adaptation. This includes projects dealing with coral bleaching, examining the influence of oceans on select species, rehabilitating wetlands, mainstreaming disaster risk reduction, monitoring climate, and installing rainwater collection barrels. The trust distributes grant funding through the Blue Grants Fund and provides a loan scheme to improve fisheries management through the Blue Investment Fund, which is managed by the Development Bank of Seychelles.

Belize (2021)

A debt-for-nature swap involving the government of Belize, The Nature Conservancy (TNC), the U.S. Development Finance Corporation, commercial creditors, and other partners took place in 2021. A TNC subsidiary lent funds to Belize to buy back a sovereign bond with a face value of USD 533 million (about 30% of Belize's GDP) at a discounted rate of 55 cents per U.S. dollar. This was financed by issuing USD 364 million in blue bonds. The U.S. Development Finance Corporation provided political risk insurance to lower the credit risk and the cost of the blue bond. This allowed the loan to have a low interest rate, a 10-year grace period during which no principal is paid, and a long maturity of 19 years.

In return, Belize agreed to use about USD 4 million per year to 2041 on marine conservation, to allocate a portion of the debt relief to pre-fund a USD 23.4 million marine conservation trust, and to double its marine-protection parks from 15.9% of oceans to 30% by 2026. An endowment fund of USD 23.5 million will finance ocean conservation and increase to an estimated USD 92 million by 2041. Because Belize owed creditors a large amount of money relative to GDP, the impact on the country's overall debt-to-GDP ratio was significant.

2.8. Challenges to DFC swaps

The DFC mechanisms are innovative and in piloting phases in most of the countries which are negotiating and implementing them. So, there are very limited lessons learnt and best practices so far.

However, while there is consensus on the potential of the DFC to contribute to climate action financing in developing countries, all the stakeholders involved in such mechanisms need to be aware of some challenges which come along with the DFC.

01

Many developing countries have high levels of debt, and **managing these debts while also investing in adaptation projects can be a significant challenge**. So, debt sustainability must be carefully considered to avoid trading one problem for another.

02

Considering the fact that implementing DFC swaps may require changes to a country's legal and regulatory framework, **ensuring that the necessary legal structures are in place can be challenging and time-consuming**. In addition, the political stability and commitment to climate action are essential for the success of DFC swaps, and changes in leadership or political priorities can disrupt ongoing initiatives.

03

Finally, choosing the right adaptation projects is critical. These projects should be effective in addressing climate change impacts and providing long-term benefits to vulnerable communities. In this context, the Debtor Nation should prioritize the projects to be funded by the swaps funds without being influenced by the Creditor Nation. For this to happen, it is imperative to **ensure transparency and avoid corruption in project selection and implementation**.

2.9. PRACTICAL EXERCISE 2

Discuss in a group the opportunities and challenges of implementing Debt-For-Adaptation Swaps in your country?

Three (3) major opportunities of Debt-For-Adaptation Swaps in your country, sector or Subnational entity	▪ ▪ ▪
Three (3) key challenges to Debt-For-Adaptation Swaps in your country, sector or Subnational entity	▪ ▪ ▪

Session Three – Private Adaptation Financing

3.1. Introduction

Climate adaptation finance refers to the funding mechanisms and investments directed towards initiatives aimed at reducing the vulnerability of communities, ecosystems, and economies to the impacts of climate change. While mitigation efforts focus on reducing greenhouse gas emissions to limit global warming, adaptation finance addresses the unavoidable effects of climate change that are already being experienced and anticipated in the future.

Climate adaptation finance is essential for building resilience, reducing vulnerability, and safeguarding communities and ecosystems against the impacts of climate change. By mobilizing resources, leveraging investments, and fostering innovation and collaboration, adaptation finance can help ensure a sustainable and climate-resilient future for all.

This session provides, successively:

- A comparative analysis of public finance and private finance
- The challenges of private adaptation investment
- The motives of private sector engagement in adaptation
- The policy instruments to leveraging private sector investment for adaptation
- Cases studies of private adaptation finance.

3.2. Learning objective

The learning objective of Private Adaptation Financing is to inform participants on conditions and approaches for effectively mobilizing and managing private sector financing for climate adaptation projects. It presents the rationale and motives of private sector engagement in adaptation, the challenges to Private Adaptation Finance, and options to leverage private sector investment for adaptation, providing case studies from LDCs.

3.3. Public Finance vs Private Finance

Private finance refers to funding, investments, and financial transactions that involve private sector entities, such as individuals, corporations, financial institutions, and non-governmental organizations, rather than governments or public institutions. It encompasses a wide range of financial activities conducted within the private sector, including lending, borrowing, investing, and asset management, with the primary objective of generating returns for investors.

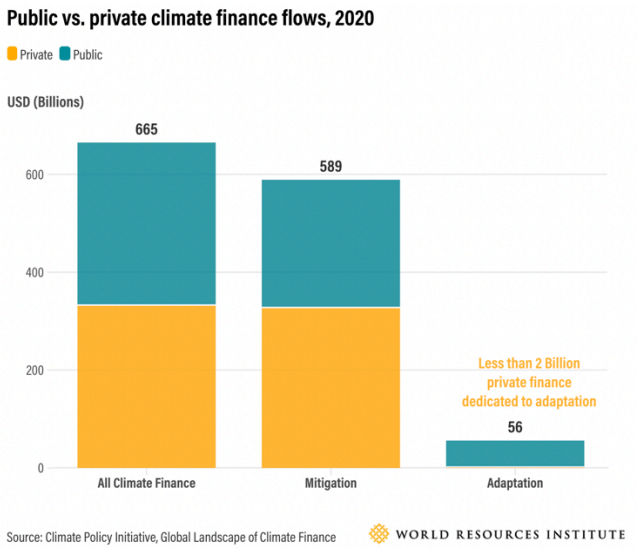
Under private finance, individuals or private entities use their resources to generate income, create profit and meet personal or corporate financial needs. The following table presents key differences between public finance and private finance.

Table 3. Difference Between Public Finance and Private Finance

Basis	Public Finance	Private Finance
Meaning	Public finance is concerned with the expenditure and revenue of the government.	Private Finance is considered with the expenditure and revenue of individuals and business firms.
Nature of the Budget	Government usually makes a deficit budget, i.e., where expenditure exceeds revenue.	Private entities usually make a surplus budget, i.e., where revenue exceeds expenditure.
Objective	The objective of public finance is to encourage social welfare and provide benefits to the general public	The objective of private finance is to only enhance the profit of the entities.
Elasticity of Finance	Public finance is more elastic as it has a scope of drastic changes.	Private finance is less elastic than public finance as there is not much scope for changes in it.
Financial Transaction	The financial transactions in this case are open and known to everyone.	The financial transactions in this case are kept a secret.
Sources of Revenue	The government has more sources for creating money, such as printing money and establishing laws to raise its revenue	Private entities have limited sources to generate revenue.
Determination of Expenditure	The government determines the amount of expenditure first and then searches for ways to generate income.	A private individual first evaluates his income before deciding how much money is needed to be spent.
Right to Print Currency	The government has complete authority over the currency. They can create, distribute and monitor the currency.	Private entities are not allowed to create currency.
Effect on Economy	Public Finance has a tremendous impact on the overall economic system.	Private Finance has little or negligible impact on the overall economic system.
Differences in Credit Status	In public finance, the government's capacity for borrowing or public credit is unlimited.	In private finance, an individual's credibility and borrowing capability are restricted.
Time Horizon	The time horizon of public finance is one year.	There is no fixed time horizon for private finance.
Example	Public Debt, Taxation, Public Spending, Monetary Policy, etc.	Mortgage and other loans, Insurance, Stock Market Investment, Personal Savings and Investments, etc.

3.4. Private Adaptation Finance: The challenges

This is a significant gap in climate adaptation finance worldwide (see accompanying figure). The private adaptation finance gaps here refers to the disparity between the financial resources needed to implement effective climate adaptation measures and the actual funds available from private sector sources. These gaps arise due to various challenges and barriers that hinder the mobilization and deployment of private finance for adaptation initiatives.



Many factors explain why private investment in climate adaptation is low. Firstly, there is a *wide perception that there is no money to be made in financing climate adaptation activities*.

Private investors expect to earn competitive risk-adjusted returns from investments. Adaptation projects may be perceived as riskier due to the uncertainty and complexity of climate impacts, and often result in public benefits rather than direct financial returns.

Secondly, there are *information asymmetries and knowledge gaps*. Private investors may contend with limited access to information on climate impacts, future risks and likely adaptation outcomes. The impact of key approaches such as ecosystem-based adaptation has not been systematically measured; nor have the full range of potential environmental and social benefits been monetized and calculated. This makes it difficult to reliably calculate returns on investment and make informed investing decisions.

Thirdly, the *investment horizon and size of adaptation projects are a hindrance* in that most adaptation projects are inherently long-term, taking 10-20 years to implement. It is hard to make the business case for potentially large upfront costs today set against relatively long and uncertain payback times. In addition, adaptation projects often have relatively small ticket sizes (around $30-$50 million) which may not appeal to traditional investors.

In addition, important sectors for adaptation such as coastal protection and ecosystem conservation are not attractive for private investment. Other sectors, like water and agriculture, have either been relatively unattractive, or have seen investment in large-scale export-oriented activities but not in the small-scale production that sustains local populations. How can the private sector be relevant for tackling adaptation?

3.5. Motives of private sector engagement in adaptation

Private sector investment might have adaptation and mitigation benefits but profit-making is its main objective. In line with this objective, private firms can invest in adaptation for three main reasons: *(i)* ***to address potential impacts of climate change on their operations, (ii) to participate in an emerging market for new products and services****, and (iii)* ***to address adaptation as part of their 'corporate social responsibility'.***

3.6. Leveraging private sector investment for adaptation

There are many ways to involve private capital in adaptation finance. The following table presents a couple of policy instruments that can be used to engage the private sector.

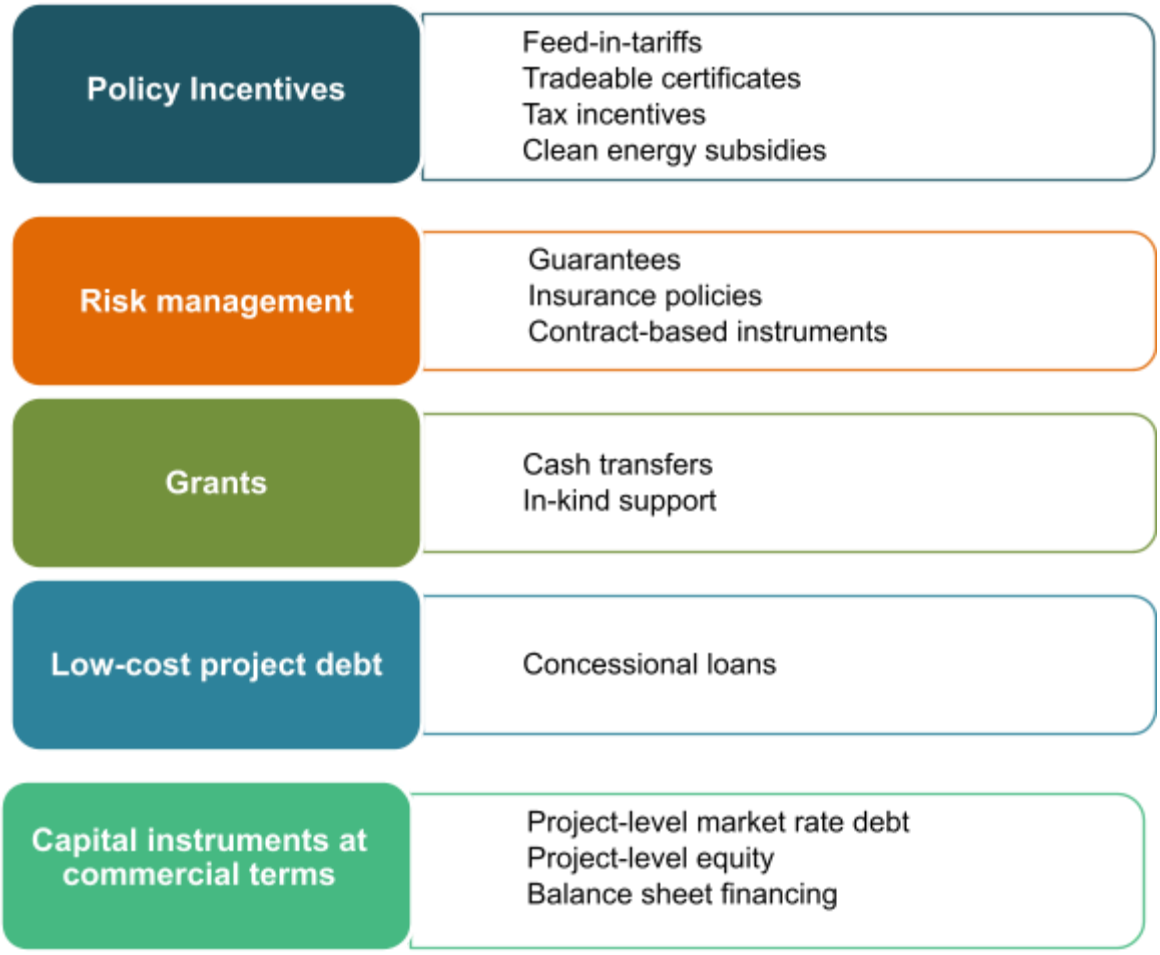


Figure 9. Climate Financing Instruments to Leverage Private Sector Investment

There is another policy instrument that the public sector can use to engage private sector investment into adaptation. It calls **de-risking adaptation opportunities for private investors**.

The following figure presents a case study on how the de-risking process works.

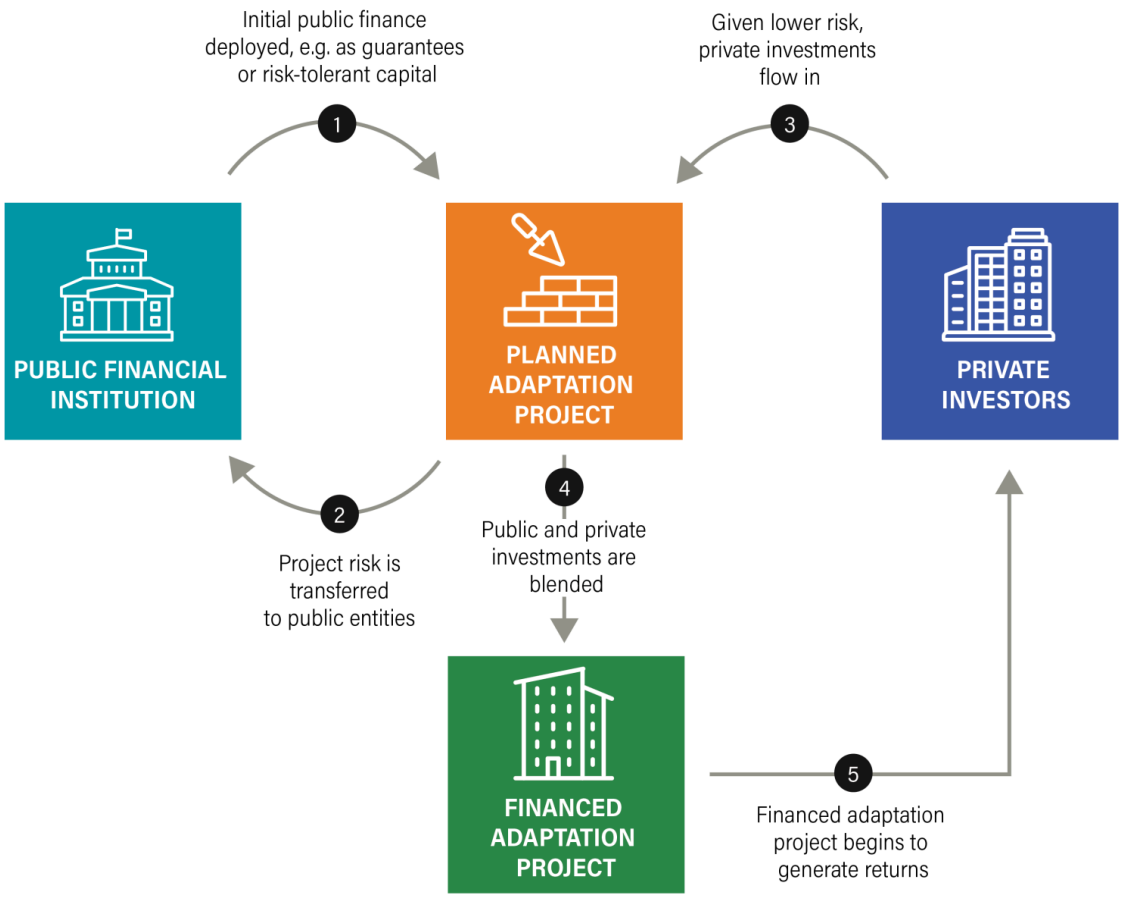


Figure 10. De-risking adaptation opportunities for private investors Source: WRI, 2023

3.7. Cases studies of private adaptation finance

Case Studies	Overview	Problem	Solution	Impact
Oxfam and Global Parametrics in Ethiopia	Oxfam partnered with Global Parametrics, a company specializing in climate risk finance, to provide weather index insurance to smallholder farmers in Ethiopia.	Smallholder farmers in Ethiopia are highly vulnerable to droughts and other extreme weather events, which can devastate their livelihoods.	Global Parametrics developed a weather index insurance product that triggers payouts based on specific weather indices, such as rainfall levels. Oxfam helped facilitate the uptake of this insurance among farmers by providing education and support.	This insurance product provided a safety net for farmers, enabling them to recover more quickly from adverse weather events. It also incentivized investment in more resilient agricultural practices, thus enhancing long-term food security and livelihoods.
BIMA and Mobile Health Insurance in Ghana	BIMA, a mobile insurance provider, launched a microinsurance product in Ghana to help low-income populations access health services, thereby increasing their resilience to climate-related health impacts.	Climate change is expected to exacerbate health issues in Ghana, including vector-borne diseases and heat-related illnesses, particularly affecting low-income populations.	BIMA offered affordable health insurance policies through mobile phones, allowing easy access and payment via mobile money. The insurance covers hospital visits, surgeries, and provides telemedicine services.	This initiative increased access to healthcare for vulnerable populations, improving their ability to cope with climate-related health risks. BIMA also expanded its customer base and demonstrated the viability of mobile-based insurance models in LDCs.

African Agriculture Fund and Farm Support Services in Mozambique	The African Agriculture Fund (AAF), a private equity fund, invested in agricultural support services in Mozambique to enhance climate resilience among smallholder farmers.	Smallholder farmers in Mozambique face significant challenges from climate variability, affecting crop yields and food security.	AAF invested in a company that provides inputs, training, and market access to farmers. The company introduced climate-smart agricultural practices, such as drought-resistant crops and improved irrigation techniques.	The investment improved farmers' productivity and resilience to climate change. It also generated returns for AAF, showing that private investment in climate adaptation can be profitable while addressing critical needs.
Zambian Breweries and Water Stewardship in Zambia	Zambian Breweries, part of AB InBev, implemented water stewardship initiatives to secure water resources for its operations and surrounding communities.	Water scarcity, exacerbated by climate change, threatened both the company's operations and the livelihoods of local communities.	Zambian Breweries invested in water conservation projects, including the restoration of wetlands, rainwater harvesting systems, and community education programs on water management.	These efforts ensured a sustainable water supply for the brewery and improved water availability for local communities. The initiative also bolstered the company's reputation and relationship with stakeholders.
Off-Grid Electric (Zola Electric) in Tanzania	Zola Electric, a private company providing off-grid solar energy solutions, expanded its operations in Tanzania to	Many rural areas in Tanzania lack access to reliable electricity, limiting their ability to adapt to climate	Zola Electric offered affordable solar energy systems on a pay-as-you-go basis, enabling households and businesses to	Access to solar energy reduced reliance on polluting and climate-vulnerable energy sources like kerosene. It also improved

	increase energy access and support climate adaptation.	change impacts, such as extreme temperatures and weather-related disruptions.	access clean and reliable electricity. This model also included maintenance and customer support services.	quality of life, economic opportunities, and resilience to climate impacts. The company achieved significant market penetration and demonstrated the viability of scalable, clean energy solutions in LDCs.

These case studies highlight the diverse ways private sector investments can support climate adaptation in LDCs. By leveraging innovative financial instruments, technology, and partnerships, private entities can address critical vulnerabilities, improve resilience, and achieve both social impact and business objectives.

3.8. Practical exercise 3

Respond individually or in group to the three following questions

Questions	Answers
1. What do you think are the challenges to mobilize private investment for climate change adaptation in your country and/or in your sector?	▪ ▪ ▪
2. What should be done, by who, to engage the private sector in financing climate change adaptation?	▪ ▪ ▪
3. What are the entry points?	▪ ▪ ▪

Session Four – Carbon Market Mechanisms for adaptation funding

4.1. Introduction

The history of carbon markets dates back to the late 20th century when concerns about climate change and global warming began to gain prominence on the international stage. In 1997, the Kyoto Protocol, negotiated as an extension of the UNFCCC, sets legally binding emission reduction targets for developed countries (known as Annex I countries) and introduces three flexible mechanisms to help these countries meet their targets: Clean Development Mechanism (CDM), Joint Implementation (JI), and Emissions Trading.

In 2005, the European Union Emissions Trading Scheme (EU ET S) was launched, becoming the world's first major carbon market. The EU ETS covers various industries, including power generation, manufacturing, and aviation, and operates on a cap-and-trade system. In the same year, the Kyoto Protocol entered into force, establishing the first international framework for carbon trading under its flexible mechanisms (CDM, JI, and Emissions Trading).

In 2015, the Paris Agreement adopted carbon markets at COP21 to the UNFCCC, and unlike the Kyoto Protocol, the Paris Agreement is intended to be a more inclusive and flexible framework for addressing climate change, with voluntary emission reduction targets set by each country.

In recent years, carbon markets continue to evolve, with new initiatives emerging at national, regional, and international levels. In practice, efforts are being made to enhance transparency, integrity, and ambition in carbon trading mechanisms to align with the goals of the Paris Agreement. It is now widely accepted that carbon markets can play a crucial role in incentivizing emissions reductions, promoting clean technologies, and mobilizing finance for climate change mitigation and adaptation efforts.

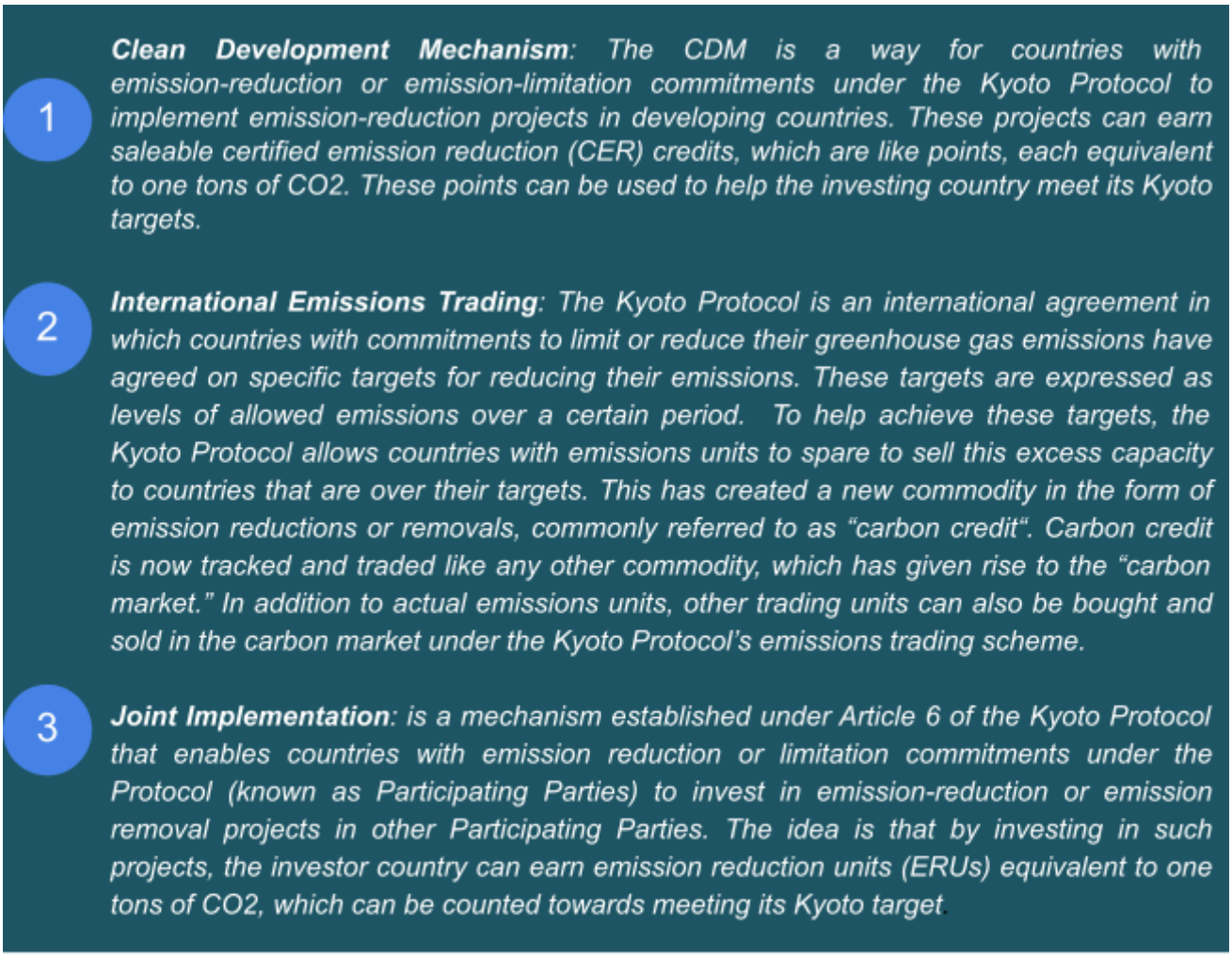
This session on the basis of the recent evolution of carbon markets presents:

- The definition of the concepts related to carbon markets
- The understanding of how carbon markets work
- The state and trends of carbon markets
- The carbon market mechanisms for adaptation funding
- The challenges in implementing markets mechanisms in LDCs

4.2. Learning objective

The learning objective of this session revolves around understanding how carbon market mechanisms can support adaptation efforts in response to climate change impacts. By the end of this session, participants will strengthen their understanding of carbon markets, learn how carbon market mechanisms can contribute to adaptation funding, and understand the policy implications of using

carbon market mechanisms for adaptation funding, including considerations related to equity, transparency, and governance.



4.3. Conceptual framework

This session is designed to ensure knowledge of the definition and difference between key concepts including carbon market mechanisms, carbon offset, carbon credits, and carbon pricing.

Carbon markets are platforms where carbon emissions are bought, sold, and traded with the aim of reducing overall greenhouse gas emissions. The fundamental principle behind carbon

markets is to create economic incentives for businesses and organizations to reduce their carbon dioxide (CO2) and other greenhouse gas emissions.

Carbon market mechanisms, also known as emissions trading mechanisms, are regulatory systems and financial instruments designed to reduce greenhouse gas emissions. They operate by creating a market for trading emission allowances or credits, providing economic incentives for businesses and governments to limit their carbon emissions.

Carbon offsets are defined as a reduction or removal of emissions of carbon dioxide or other greenhouse gasses made in order to compensate for emissions made elsewhere.

Carbon credits are permits that allow the owner to emit a certain amount of carbon dioxide or other greenhouse gasses.

Carbon pricing is an instrument that captures the external costs of greenhouse gas (GHG) emissions. For example, the costs of emissions that the public pays for, such as damage to crops, health care costs from heat waves and droughts, and loss of property from flooding and sea level rise, and ties them to their sources through a price, usually in the form of a price on the carbon dioxide (CO2) emitted.

4.4. How does the carbon market work?

The carbon market process (following figure) operates on the principle of carbon trading, which aims to reduce greenhouse gas emissions by putting a price on carbon. Generally, a carbon market works as describe as follow:

a) **Setting a Cap**: A regulatory body, often a government or an international organization, establishes a limit (or cap) on the total amount of greenhouse gas emissions allowed within a certain jurisdiction, industry, or group of participants. This cap is usually set to gradually decrease over time to encourage emissions reductions.
b) **Allocating Carbon Allowances**: Under the cap-and-trade system, the regulatory body allocates or auctions a specific number of carbon allowances to regulated entities, such as industrial facilities, power plants, or airlines. Each allowance represents the right to emit one metric ton of carbon dioxide or its equivalent (CO2e) into the atmosphere.
c) **Trading Carbon Allowances**: Regulated entities are required to hold a sufficient number of allowances to cover their emissions. If a company emits less than its allocated allowances, it can sell excess allowances on the carbon market to other entities that need them to comply with the cap. This creates a market where the price of allowances is determined by supply and demand dynamics.
d) **Compliance and Penalties**: Entities that fail to surrender enough allowances to cover their emissions face penalties or fines. By contrast, those that reduce emissions below their allocated allowances can profit by selling surplus allowances.
e) **Carbon Offsets**: In addition to trading allowances, participants may also invest in carbon offset projects. These projects aim to reduce or remove greenhouse gas emissions elsewhere, such as through reforestation, renewable energy projects, or methane capture initiatives. Participants receive carbon

offset credits for these projects, which they can use to meet their emissions obligations or sell on the carbon market.

f) **Verification and Monitoring**: To ensure the credibility and integrity of the system, carbon credits and offset projects are subject to rigorous verification and monitoring processes. Independent third-party organizations assess and verify that emissions reductions are real, additional, permanent, and verifiable.

g) **Voluntary vs. Mandatory Markets**: Carbon markets can be either voluntary or mandatory. Mandatory markets are established through government regulations, while voluntary markets operate based on companies' voluntary commitments to reduce emissions or individuals' desire to offset their carbon footprint.

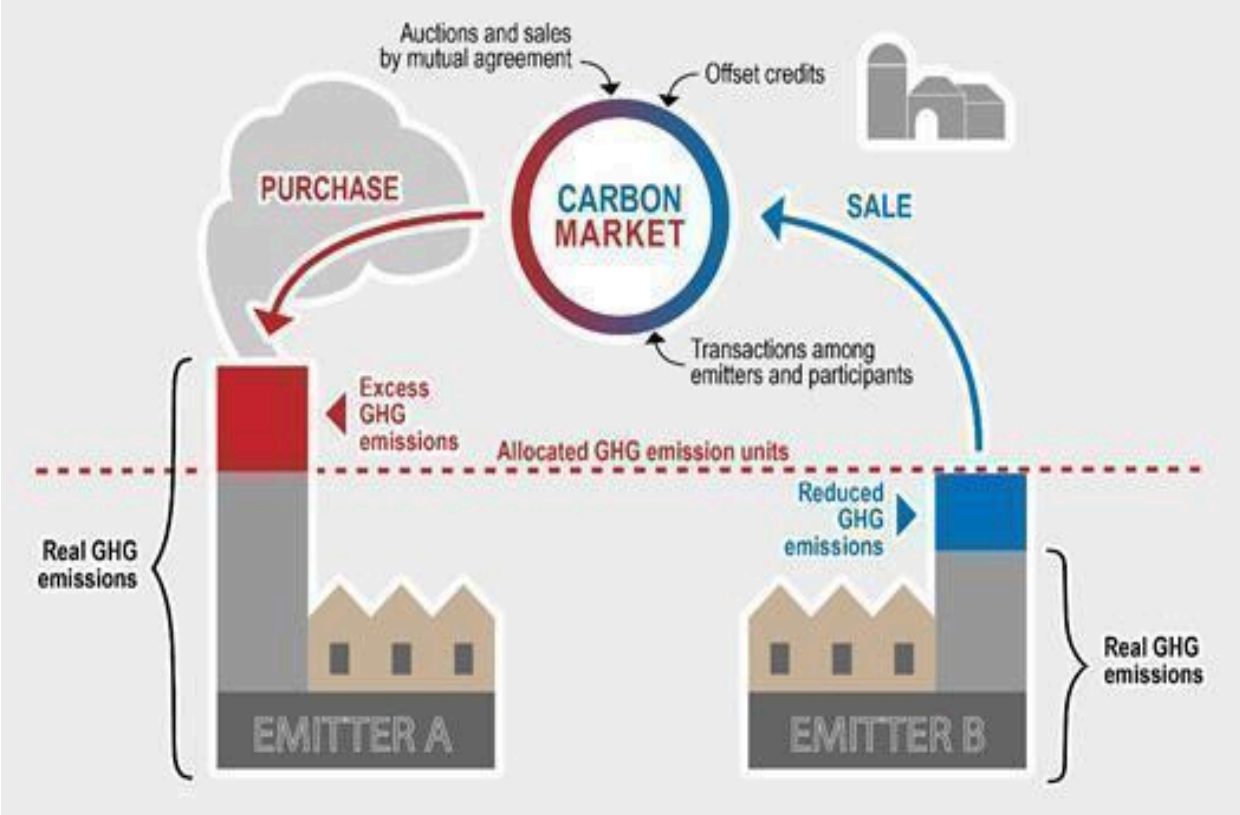


Figure 11. Carbon market process Source: TT Green, 2023

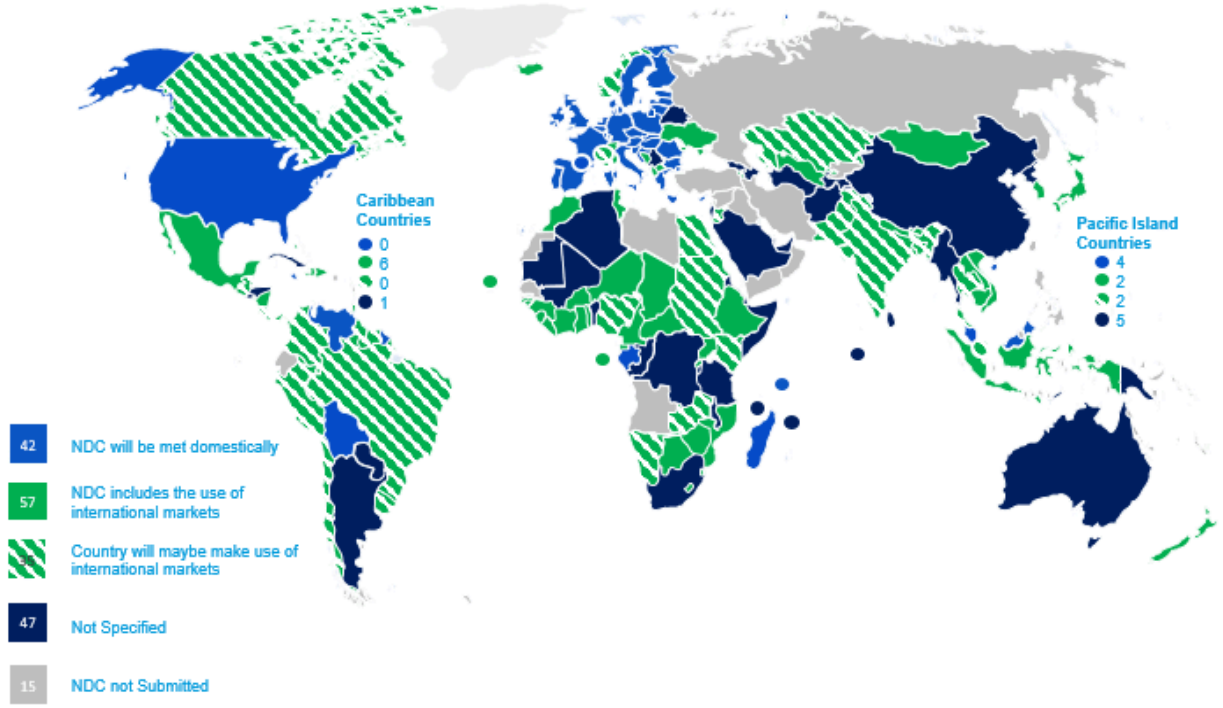
Overall, carbon markets create economic incentives for emissions reductions and promote the transition to a low-carbon economy by encouraging investment in cleaner technologies and practices.

4.5. State and trends of carbon markets

The following figure has shown, based on the review of all NDCs submitted by 2019, that most of the Least Developed Countries (LDC) are willing to consider developing carbon markets as part of their climate policies (as indicated by the green and hashed green countries in the figure below).

This demonstrates that countries view market mechanisms as potential instruments to mitigate climate change and to collect resources to finance their climate action. The following figure presents an overview of the reference to the carbon markets mechanisms in the NDCs in 2019.

Figure 12. NDCs and reference to the use of carbon market mechanisms (2019)



Source: Perspectives Climate Group et al., 2019[2]

However, the figure below shows that the LDCs have a long way to go. In all of Africa, for example, only South Africa has a carbon tax with offsets being designed or in place. Few other countries are implementing Emissions Trading Systems (ETSs). The following point underscores the potential challenges LDCs face, which limit their capacities in establishing this instrument as part of their national and subnational climate actions.

The World Bank has been tracking carbon markets for more than a decade and 2024 is its eleventh annual carbon pricing report. When the first report was released, carbon taxes and Emission Trading Systems (ETS) covered only 7% of the world's emissions. According to the 2024 report, 24% of global emissions are now covered. In 2023, carbon pricing revenues reached a record $104 billion, according to the World Bank's annual "State and Trends of Carbon Pricing 2024" report released on May 21, 2024 (WBG, 2024)[3]. According to the report, there are now 75 carbon pricing instruments in operation worldwide. Over half of the collected revenue was used to fund climate and nature-related programs.

[2] Perspectives Climate Group, Frankfurt School and Climate Focus, (2019). Opportunities for mobilizing private climate finance through Article 6 - Scientific Figure on ResearchGate. Available from: https://www.researchgate.net/figure/NDCs-and-reference-to-the-use-of-market-mechanisms_fig1_333900897 [accessed 28 May, 2024]

[3] World Bank. 2024. State and Trends of Carbon Pricing 2024. Washington, DC: World Bank. http://hdl.handle.net/10986/41544

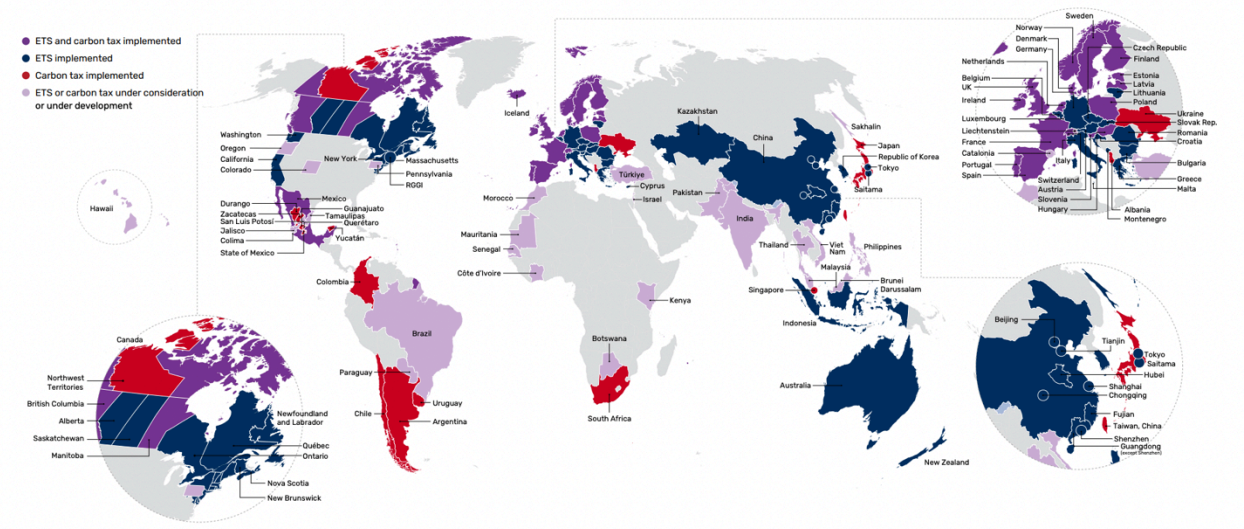


Figure 13. Map of carbon taxes and ETSs in 2024 , Source: WBG, 2024

All series of reports of State and Trends of Carbon Pricing are accessible here: https://hdl.handle.net/10986/13334

4.6. Carbon market mechanisms for adaptation funding

Carbon market mechanisms can play a role in generating funds for adaptation efforts, although their primary purpose is typically to incentivize emissions reductions and promote mitigation activities.

While these mechanisms are not a direct source of funding for adaptation, they can indirectly contribute to adaptation finance in several ways (see figure 14).

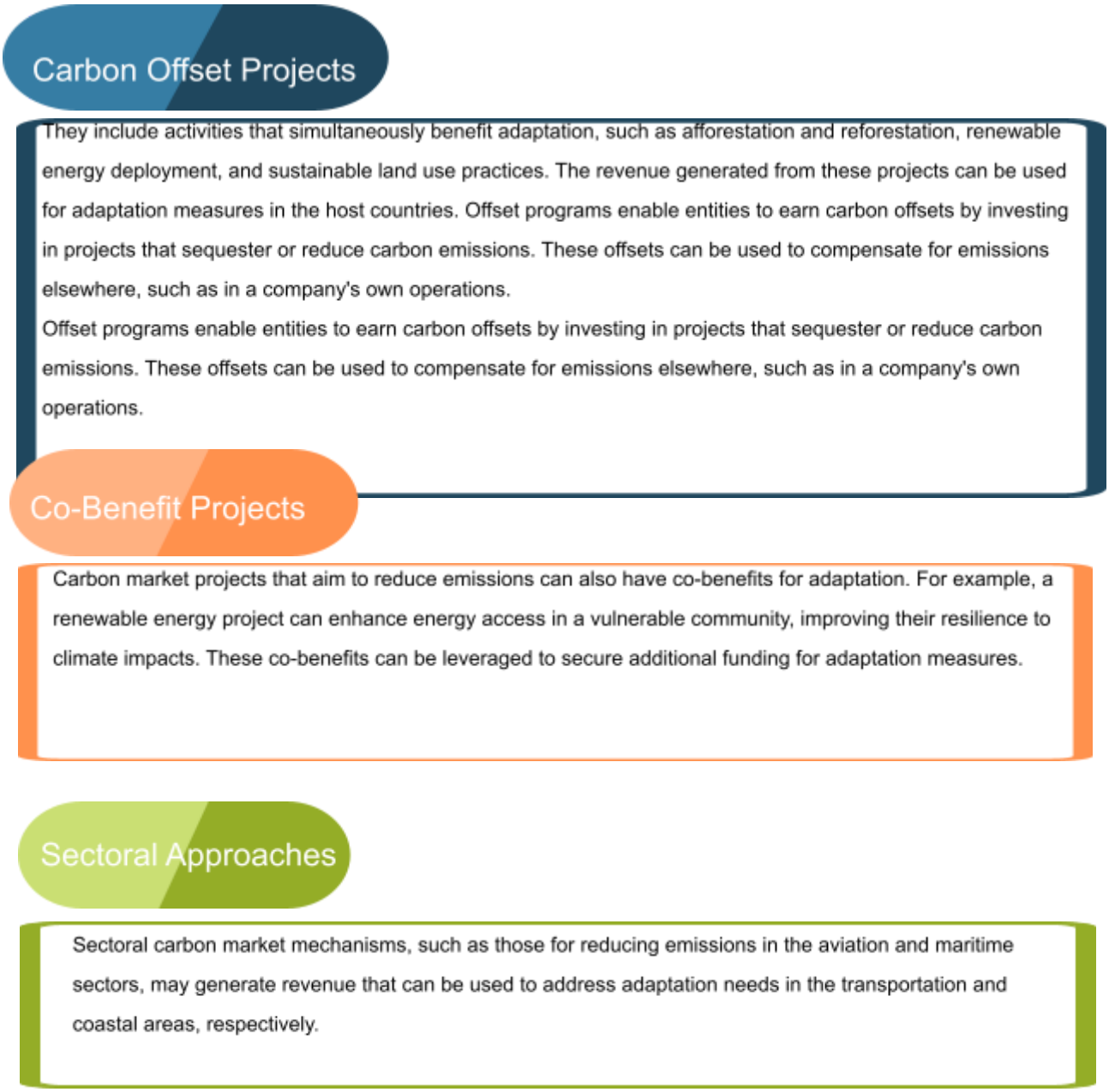


Figure 14. Carbon market mechanisms for adaptation funding

4.7. Challenges in implementing markets mechanisms in LDCs

Implementing carbon markets mechanisms in LDCs can be a complex endeavor due to various challenges. The main challenges to implementing carbon markets mechanisms in LDCs are the following:

Lack of infrastructure

Many LDCs may lack the necessary infrastructure to monitor and verify emissions. Effective carbon markets require accurate data collection and measurement of emissions, which can be challenging in regions with limited resources and infrastructure.

Lack of technical capacity

Developing and operating carbon market systems require technical expertise in areas such as emissions accounting, trading platforms, and market oversight.

Financial resources

Implementing carbon markets often requires significant financial investments, from setting up the infrastructure to supporting compliance and enforcement efforts.

Regulatory frameworks & institutional capacity

Creating a legal and regulatory framework for carbon markets can be complex. LDCs may need to develop or strengthen institutions responsible for overseeing carbon markets, monitoring emissions, and enforcing compliance.

Market Size and liquidity

Carbon markets benefit from a large and liquid trading environment. LDCs may have relatively small emissions profiles, which could limit the effectiveness of a domestic carbon market. They may need to explore options like linking with larger, more established markets.

4.8. Practical exercise 4

Considering the challenges in implementing market mechanisms in LDCs presented in 4.7, conduct an assessment of the relevance of each identified challenge in the context of your country or sector or subnational entity. Please recommend a solution to tackle the most relevant challenge evaluated.

Challenges	Assessments					Recommendation of solution (if applied)
	1	2	3	4	5	
Lack of infrastructure						
Lack of technical capacity						
Limited financial investments						
Gap(s) in regulatory frameworks and institutional capacity						
Relatively small market size						

Session Five – Financing Subnational Climate Adaptation Actions

5.1. Learning objective

The learning objective of this session focuses on financing subnational climate adaptation actions. It will equip the participants with the baseline understanding of key factors and processes necessary to initiate, plan, and implement financing strategies for subnational climate adaptation initiatives. By the end of the session, participants will be better equipped to navigate the complex landscape of financing subnational climate adaptation actions.

5.2. Rationale for subnational adaptation financing

The rationale for subnational adaptation financing lies in the unique and crucial role that local and regional governments can play in addressing climate change impacts and enhancing resilience.

Indeed, climate change impacts are often felt most acutely at the local level, with specific regions facing distinct challenges such as sea-level rise, extreme weather events, and changes in agricultural productivity. Subnational entities are better positioned to understand and address these localized impacts. In addition, subnational governments are closer to the communities most vulnerable to climate change and can more effectively engage with these populations, understand their needs, and implement tailored adaptation measures that directly address local vulnerabilities.

Effective financing at the subnational level is crucial for translating national climate adaptation plans into concrete actions on the ground. The subnational

entities, including cities and municipalities, often serve as incubators for innovative adaptation strategies and can pilot new approaches and technologies that, if successful, can be scaled up or replicated in other regions.

Furthermore, decentralized governance structures allow for more flexible and responsive decision-making processes. Subnational governments can adapt more quickly to changing conditions and emerging needs compared to more centralized systems. Additionally, subnational governments can attract investment from private sector partners and international donors specifically interested in local adaptation projects.

Finally, focusing on subnational adaptation financing can enhance the effectiveness and relevance of climate adaptation efforts, ensuring that they are context-specific, inclusive, and responsive adaptation actions to the unique challenges faced by local communities.

The predominant system of multilateral finance contains high costs as finance flows through intermediaries, along with increasing compliance requirements, compared to financing climate actions/responses directly through local funds through the Devolved Climate Finance (DCF) mechanism (refer to figure below). DCF can provide an innovative model for investing at the local level in developing countries and building sustainable and climate-resilient livelihoods.

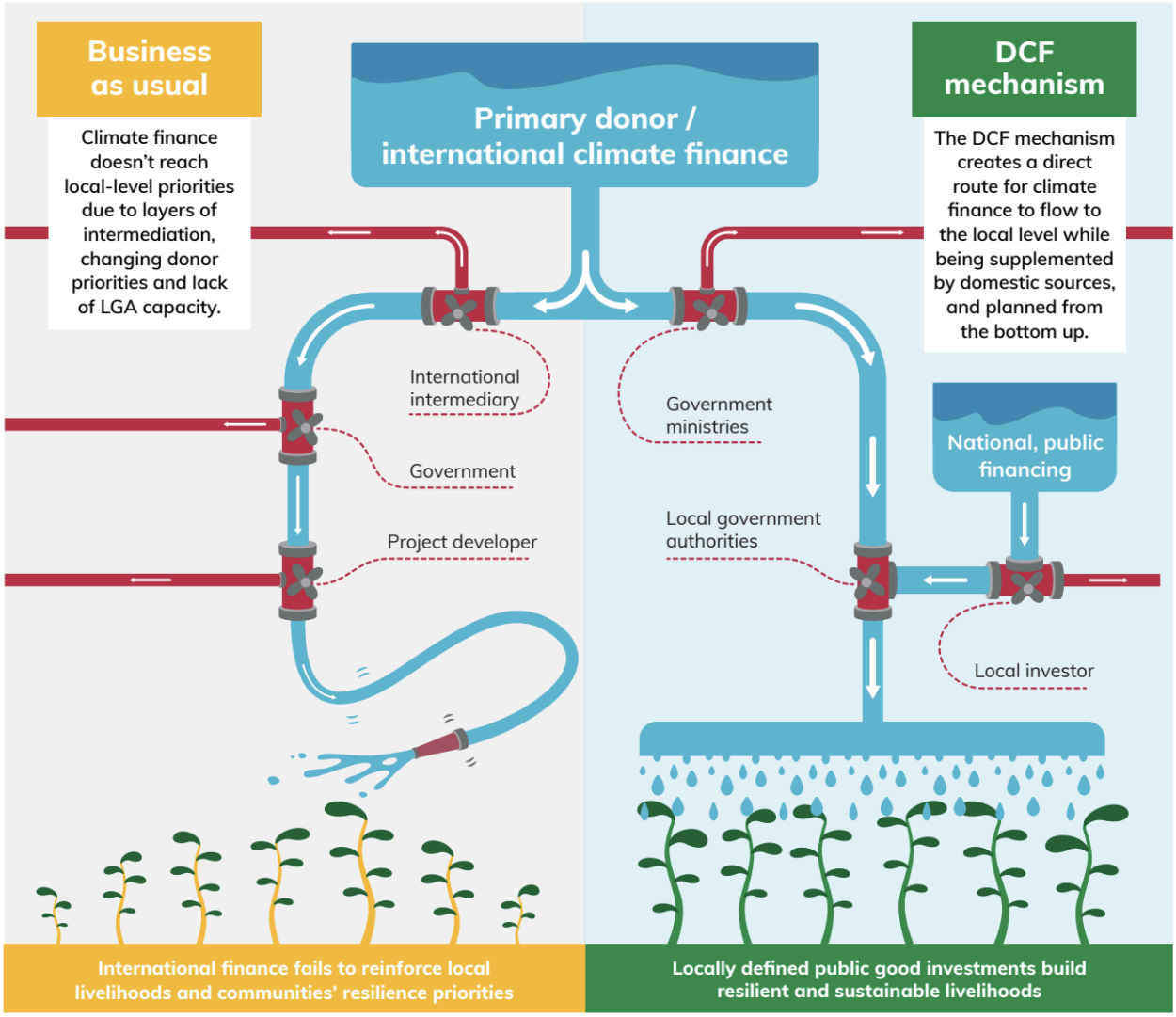


Figure 15. Devolved Climate Finance (DCF) mechanism **Source: DCF Alliance, 2019**

5.3. Barriers to subnational adaptation financing

Financing adaptation to climate change at subnational levels faces several significant barriers. These barriers can be categorized into institutional, financial, technical, and socio-economic challenges.

Table 4. Barriers to subnational adaptation financing

Types of barriers	Description
Institutional	▪ Lack of coordination between different levels of government and between different sectors, which can lead to fragmented efforts and inefficiencies in funding allocation. ▪ Inadequate policies and regulatory frameworks can hinder the flow of funds to subnational levels. ▪ Subnational entities may lack the institutional capacity to design, implement, and manage adaptation projects, which includes limited expertise in accessing and managing funds from various sources.
Technical	▪ Effective adaptation requires robust data and information on climate risks and vulnerabilities, and subnational governments often lack access to relevant and reliable climate data. ▪ There may be a shortage of technical expertise required to design and implement adaptation measures. This includes skills in climate science, engineering, and project management.
Financial	▪ There is a general scarcity of funds dedicated to adaptation compared to mitigation. Subnational governments often have limited budgets and may prioritize immediate development needs over long-term adaptation strategies. ▪ Subnational entities may face difficulties accessing international and national climate funds due to complex application processes and stringent eligibility criteria. ▪ Many subnational governments, especially in developing countries, lack the creditworthiness required to attract private investment or to secure loans for adaptation projects.
Socio-economic	▪ There may be low levels of public awareness and understanding of climate risks and the importance of adaptation, which can lead to a lack of public support for adaptation investments. ▪ Adaptation measures need to be equitable and inclusive, addressing the needs of vulnerable populations. Ensuring this can be challenging due to socio-economic disparities and political dynamics at the subnational level. ▪ Subnational governments often face competing priorities such as poverty alleviation, infrastructure development, and healthcare. These immediate needs can overshadow the long-term benefits of adaptation measures.

According to recent NDC Partnership Insight Brief on Subnational Climate Finance Trends in NDC Partnership Support (NDC-P, 2023)[4], profound structural changes are necessary to achieve this ambitious goal, such as ensuring that subnational governments have access to the finance sources needed to develop and implement climate-aligned projects. These include (i) the inability to borrow as a challenge that varies between countries depending on the organizational structure of each state and the powers delegated at each level of governance, (ii) the fact that sub-national governments must meet certain standards of creditworthiness before gaining access to finance, (iii) the insufficient capacity to prepare projects and pipelines underscores the need for robust multilevel cooperation and partnerships and (iv) the challenge of the unequal flow of resources, which highlights a stark disparity in which large metropoles capture most of the limited international public finance, leaving smaller cities with meager options for financing sustainability projects.

5.4. Measures to address subnational climate finance mobilization barriers

Addressing barriers to subnational climate finance mobilization requires a multi-faceted approach that involves policy reforms, capacity building, innovative financing mechanisms, and enhanced stakeholder engagement.

Indeed, mobilizing climate finance at the required speed and scale for a timely and just climate transition requires local governments and stakeholders to address specific barriers to resource access. Some benchmarks measures include the establishment of clear and consistent legal frameworks that define the roles and responsibilities of subnational governments in climate finance, the strengthening of decentralization policies to give subnational governments more autonomy and capacity to manage climate finance projects, the development of incentive structures for subnational governments to pursue climate-friendly projects, such as tax breaks, grants, or matching funds from the national government.

It is also important to consider the need to design and implement training programs for local government officials on climate finance, project management, and financial planning, as well as the establishment of administrative and financial management procedures. In addition, there are a number of other factors to consider. These include the capacity of local financial institutions to understand and manage climate-related investments, the improvement of data collection and management systems to provide reliable information on climate risks and vulnerabilities, and finally the development of a robust monitoring and reporting frameworks to track the progress and effectiveness of climate finance projects so as to ensure transparency and accountability.

[4] NDC Partnership, 2023. Insight Brief: Subnational Climate Finance Trends in NDC Partnership Support.

5.5. Cases studies and lessons learnt from the Devolved Climate Finance (DCF)

The Devolved Climate Finance (DCF) mechanism is an innovative model for investing at the local level in developing countries and building sustainable and climate-resilient livelihoods. The mechanism builds on the premise that local communities have in-depth knowledge about climate variability and risks.

The process involves integrating flexible, local and often customary planning with formal planning and budgeting processes, to create informed and inclusive governance processes (as shown in the below figure).

The DCF mechanism is structured around four operational components, framed by five conceptual premises, and anchored within existing institutions in Kenya, Mali, Senegal and Tanzania. The originality of the DCF mechanism lies in its approach: enabling formal government planning to make local investments that

enhance the effectiveness of community-led adaptation strategies based on local knowledge, experience and established customary institutions for managing climate variability. The mechanism also creates systems that enhance planning at spatial scales more relevant to natural resource use and the nature of climate impacts.

Figure 16. The Devolved Climate Finance mechanism, Source: DCF Alliance, 2019

Lessons learnt from the DCF pilot mechanisms across countries (Mali, Senegal, Kenya, Tanzania) Source: DCF Alliance, 2019[5]

Lessons	Implications in practice
Community managed funds for public good investments are valuable in areas with high reliance on shared or common resources.	▪ Communities can address immediate development and resource needs, such as water sources, livestock health, and flood prevention. ▪ While communities focus on short-term development deficits, higher level committees must consider long-term climate risks.
Devolving decision making responsibility to local adaptation planning committees widens and enhances participation in decision making and builds understanding of climate challenges. It can also bridge community knowledge and planning with formal local government systems.	▪ Trust has been developed between new actors to make decisions with positive outcomes for men and women. ▪ More work is needed to guarantee that perspectives of marginalized groups are acted upon. This includes challenging traditional social norms and seeking to ensure that people from marginalized groups maintain positions in decision making spaces.
New tools and devolved institutions reduce the cost of government planning while improving accountability and efficiency.	▪ Integrating new tools and institutions can save costs, but training and quality assurance mechanisms take time to lead to changes in existing norms and ways of working. ▪ Working with in-country training institutions can help integrate new skills into government. training programmes and build knowledge of new approaches in-country.
Working through consortia improves problem solving, conflict resolution and builds cross-sectoral relationships.	▪ Consortia take time to build trust and reduce hierarchies that may exist between different types of actors. ▪ Regular consortium meetings where all partners can share perspectives and responsibility for decision making help address these challenges. ▪ Maintaining availability of funding that is flexible enough to support a range of government and civil society partners is essential.

[5] DCF Alliance (2019). The devolved climate finance mechanisms: principles, implementation and lessons from four semi-arid countries. DCF Alliance, Available at https://www.iied.org/g04424

5.6. Selected subnational climate finance mechanisms for LDCs countries

There are various support mechanisms for local climate change adaptation actions. The following table presented a list of selected support mechanisms that can provide technical assistance and/or finance to subnational initiatives. They are different from one to another based on the types of mechanisms, the financial instruments they used and the sectors they financed.

N°	Support mechanism(s)	Source (s) -Domestic -International	Types -Finance -Cap. Dev -Tech. Transfer -Information /Analysis Tool -Research/Academia -Other	Promoted by: -Public -Private -PPP -Nonprofits	Description of the mechanisms and tools	Climate Action: -Adaptation -Mitigation -Cross-cutting	Financial instruments -Grants -Loans -Equity -Results-based Payments -Guarantees -Blended finance	Scale -Micro -Small -Medium -Large	Relevant sector(s)	Links (if available)
1	Subnational Climate Fund (SCF)	International	Finance Cap. Dev. Technology transfer	Public	Global Investments Accelerating Local Action for a Sustainable Future: The Subnational Climate Fund (SCF) is a global blended finance initiative that aims to invest in and scale mid-sized (5 – 75 M $USD) subnational infrastructure projects in the fields of sustainable energy, waste and sanitation, regenerative agriculture and nature-based solutions in developing countries.	Adaptation and Mitigation	Blended finance	Micro Small Medium	Sustainable energy Waste and sanitation Regenerative agriculture Nature-based solutions	https://www.subnational.finance/
2	Global Covenant of Mayors for Climate & Energy	International	Technical Assistance Finance Learning Knowledge sharing	Public Nonprofits	The Global Covenant of Mayors for Climate and Energy (GCoM) is the largest global alliance for city climate leadership, uniting a global coalition of over 13,000 cities and local governments. The cities and	Adaptation Mitigation Cross-cutting	Grants	Micro Small Medium	N/A	www.globalcovenantofmayors.org

	(GCoM) / Covenant of Mayors in Sub-Saharan Africa (CoM SSA)				partners of GCoM share a long-term vision of supporting voluntary action to combat climate change and towards a resilient and low-emission society. GCoM serves cities and local governments by mobilizing and supporting ambitious, measurable, planned climate and energy action in their communities by working with city/regional networks, national governments and other partners to achieve our vision. Led today by UN Special Envoy on Climate Ambition and Solutions Michael R. Bloomberg and the European Commission, the coalition comprises cities across 6 continents and 144 countries, representing over 1 billion people or 13% of the global population.					https://comssa.org/en/
3	The City Climate Finance Gap Fund (Gap Fund)	International	Advisory Technical Assistance	PPP	The City Climate Finance Gap Fund (Gap Fund) provides early-stage technical assistance to cities for low-carbon, climate-resilient urban development plans and projects. The Fund has €105 million in capital that could unlock a potential €4 billion in investment. In operation since September 2020, the Gap Fund is a global partnership that helps cities in developing countries plan, prioritize and deliver projects focused on climate change mitigation and adaptation. The Gap Fund also promotes climate-smart urban development plans.	Cross-cutting	Grants Venture capital	Small Medium Large	Cities Climate-smart urban development plans	https://www.citygapfund.org/

					The Gap Fund provides a range of technical assistance and capacity building to support climate-smart planning and investment in cities in developing and emerging countries.					
4	Transformative Actions Program (TAP) - ICLEI	International	Finance Technical Assistance	PPP Nonprofits	The Transformative Actions Program (TAP) brings together financial institutions, project preparation facilities, and the private sector to assist subnational governments and local businesses in turning their sustainable infrastructure ideas into solid and investment-ready projects. Projects are mobilized trough annual calls. Those that show high transformative potential get increased visibility to potential investors and are connected to project preparation facilities and financial partners.	Cross-cutting	Grants Finance instruments	Small Medium	Energy Transport Water Waste Land use Forestry ICT	https://tap-potential.org/
5	Catalytic Climate Finance Facility (CC Facility)	International	Finance Capacity Development Technology transfer	Private Nonprofits	The CC Facility is focused on scaling sustainable climate finance by providing market acceleration services to early-stage and market-ready financial vehicles in areas severely under-financed in developing countries. It is a partnership between Convergence and Climate Policy Initiative (CPI) to bring a holistic solution to accelerate the implementation of high-impact blended finance vehicles that catalyze private capital. The CC Facility aims to be an ecosystem builder, playing a key role in mainstreaming climate action, with an emphasis on gender responsiveness and local capacity, and increasing the available pipeline of bankable climate	Adaptation and Mitigation	Grants Market acceleration services Equity Blended finance	Micro Small Medium	Energy, encompassing just transition, universal access, and energy efficiency; sustainable cities and resilient infrastructure; sustainable agriculture and land use.	https://www.ccfacility.org/ https://www.convergence.finance/ccfacility

					blended finance solutions. It targets a key obstacle in the development process of such financial vehicles, which occurs in the acceleration stage, when solutions face a critical valley of death, taking longer to resume operations due to a lack of support. Together, Convergence and CPI will offer a full suite of tools to help traverse this valley of death and scale solutions faster, navigate potential pitfalls, and maximize their impact in a changing economic landscape.					
6	Local Climate Adaptive Living (LoCAL) Facility	International	Finance Capacity development Technical Assistance	Public	The Local Climate Adaptive Living (LoCAL) Facility, designed and managed by the UN Capital Development Fund, is a standard internationally recognized mechanism that helps local government authorities in developing and least developed countries access the climate finance, capacity building and technical support they need to respond and adapt to climate change. Local authorities are uniquely positioned to identify the climate change adaptation responses that best meet local needs and typically have the mandate to undertake the small- to medium-sized adaptation investments that are essential for building climate resilience. LoCAL combines performance-based climate resilience grants (PBCRGs), which ensure programming and verification of climate change expenditures at the local level, with	Adaptation	Grants Performance-based climate resilience grants (PBCRGs)	Small Medium	N/A	https://www.uncdf.org/local/homepage

					technical and capacity-building support. LoCAL is designed to re-enforce existing national and sub-national financial and fiscal delivery systems, and it uses the demonstration effect to trigger further flows for local adaptation including national fiscal transfers and global climate finance for local authorities through their central governments.LoCAL promotes climate change–resilient communities and economies by increasing finance and investment in climate change adaptation at the local level.					

5.7. Practical exercise 5

Scenario

Imagine you are a policy advisor for a mid-sized city (population of about 500,000) located in a coastal region that is increasingly affected by climate change. The city is experiencing more frequent and severe flooding, heatwaves, and coastal erosion. Your task is to develop a proposal to support the city's adaptation measures.

Objectives

1. Identify the climate risks and vulnerabilities specific to the city
2. Design a climate impacts chain (highlighting first-order and second-order potential impacts)
3. Propose specific adaptation measures
4. Develop a budget for the proposed adaptation measures
5. Identify potential sources of finance
6. Outline a strategy for securing the necessary funds

Glossary

Term	Definition
Adaptation Fund	It is an international fund that finances projects and programs aimed at helping developing countries to adapt to the harmful effects of climate change. It is set up under the Kyoto Protocol of the United Nations Framework Convention on Climate Change.
Adaptation Finance	Financial resources dedicated to activities that help communities, regions, and countries adapt to the impacts of climate change, such as building resilient infrastructure or supporting climate-resilient agriculture.
Blended Finance	A mix of public and private financing aimed at attracting private investment to projects that contribute to climate adaptation, reducing the risk for private investors.
Climate Change	It is the significant variation of average weather conditions becoming, for example, warmer, wetter, or drier—over several decades or longer. It is the longer-term trend that differentiates climate change from natural weather variability.
Climate Change Adaptation (CCA)	It is the process of adjusting to the effects of climate change. These can be both current and expected impacts.
Climate Finance	It refers to financial resources and instruments that are used to support action on climate change.
Climate Resilience	The ability of communities, ecosystems, or economies to withstand and recover from the effects of climate change, ensuring they can sustain development gains despite climate impacts.
Co-Benefits	Secondary benefits of climate adaptation projects, such as improved air quality, job creation, or biodiversity conservation, beyond the primary aim of reducing climate vulnerability.
Ecosystem-Based Adaptation (EbA)	The use of biodiversity and ecosystem services as part of an overall strategy to help people adapt to the adverse effects of climate change, such as mangrove restoration for coastal protection.
Green Climate Fund (GCF)	It is a fund for climate finance that was established within the framework of the United Nations Framework Convention on Climate Change. Its objective is to assist developing countries with climate change adaptation and mitigation activities.
Insurance Mechanisms	Financial products designed to provide compensation for losses resulting from climate impacts, helping communities recover more quickly and effectively.
Loss and Damage	Refers to the negative impacts of climate change that people have not been able to cope with or adapt to, which require financial compensation or other forms of support.
National Adaptation Plan (NAP)	A strategic planning process that enables countries to identify and address their medium- and long-term adaptation needs, integrating climate resilience into national development planning. The NAP process was established under the Cancun Adaptation Framework (2010) in order to prepare countries for addressing climate risks. The main objectives of the NAPs are to reduce vulnerability to climate change, and to mainstream climate change adaptation in all levels of planning.

Nature-Based Solutions (NbS)	Strategies that involve the protection, sustainable management, and restoration of natural or modified ecosystems to address societal challenges, effectively and adaptively contributing to human well-being and biodiversity benefits.
Private Sector Engagement	Involvement of private businesses and investors in financing and implementing climate adaptation measures, leveraging private sector innovation, efficiency, and resources.
Public-Private Partnership (PPP)	Collaborative agreements between government entities and private sector companies to finance and implement projects, including those related to climate adaptation, which may involve shared risks and benefits.
Resilience Bonds	Financial instruments that allow investors to fund resilience projects, such as infrastructure improvements, and receive returns based on the reduced risk of climate impacts.
Sustainable Development Goals (SDGs)	A collection of 17 global goals set by the United Nations General Assembly in 2015, which include specific targets related to climate action (SDG 13), as well as goals that support climate adaptation through sustainable development.
Technical Assistance	Support provided to countries and organizations in the form of expertise, training, and knowledge transfer to help design, implement, and manage climate adaptation projects effectively.

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