



Instructor's Guide

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

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Overview

This instructor's guide introduces the course, provides context for the material in this course, and emphasises particular key junctures related to explaining and teaching the content.

The instructor's guide also elaborates how the course modules have been structured, how these modules contribute to the overall objectives of the course, and how this course should be taught in the context of providing capacity strengthening on climate finance for government officials, and other experts, who may benefit from the material offered in this course.



Why this course?

The *Public and Private Sector Financing for Climate Change Adaptation* complements Course 1 by providing a detailed examination of public and private sector financing that goes well beyond the multilateral schemes of the GEF, GCF, AF, etc that are detailed in Course 1.

The course is incredibly valuable for several reasons. First of all, climate change impacts are already being felt in LDCs, and while the need for adaptation strategies is becoming increasingly urgent, public and private sectors both have crucial roles to play in financing these strategies. Secondly, public resources alone are not enough to cover the vast costs of adaptation. Private sector investment is essential to bridge the funding gap and ensure sufficient resources for adaptation projects. Thirdly, this course helps to equip participants with knowledge of various financing mechanisms available for climate change adaptation. This includes public funding sources like grants and debt-for-climate swaps mechanisms, as well as private sector investment opportunities like blended finance, private adaptation finance and the markets mechanisms.

What will be achieved by this course?

- 1 Gain a comprehensive understanding of various public and private sector financing mechanisms for climate change adaptation. This could include grants, concessional loans, blended finance, green bonds, and impact investments.
- 2 Understand the policy and regulatory environment that influences public and private sector investments in adaptation.
- 3 Develop knowledge of how public and private sectors can collaborate to develop innovative financing solutions, and learn strategies for engaging diverse stakeholders, including governments, businesses, communities, and NGOs, in adaptation financing processes.

Who is expected to take this course?

This course is targeted at governmental and non-governmental agencies and organisations as well as officials that are involved in resources mobilisation for climate action at national and subnational levels, climate finance strategies and their implementation.

How long is the course?

The total time required to complete the course is estimated to be **three (3) hours**. This course is divided into 5 sections and can be taught over multiple sittings rather than all at once. This course will be delivered as one of the five short courses to be completed on climate adaptation finance.

What to find in this course and where?

The content of the *Public and Private Sector Financing of Climate Change Adaptation* course responds to the objectives and outcomes of the course presented above. The course is made up of four sessions:

Session 1: Mainstreaming Climate Adaptation Finance in Public Budgeting — Tools and Approaches

Session 2: Various debt-for-climate swap schemes

Session 3: Private Adaptation Financing

Session 4: Carbon Market Mechanisms for Adaptation Funding

Session 5: Subnational Climate Adaptation

Structure of the instructor's guide

For the instructor's guide, each of the five sessions is made up of the following:

- **Introduction** that provides an overview of the session and its objectives.
- **Learning objectives** for the session, stating what the participant can expect to learn in the session.
- **Timing:** a breakdown of the specific activities and time allocation for each of them in the session.
- **Guidance on use of slides** provides information that is needed by the trainer in deciphering messages from the slides as well as an indication on which of the slides may need attention or specific action to be taken during engagements.
- **Exercises:** this section indicates the type of exercises to be taken for the session and possible answers, as well as indications of where they can be placed during the session.

Modalities of course delivery

This course employs a diversity of methods, including lectures (PowerPoint and informal engagement) and participatory sessions (e.g. group work, pair work and discussions, brainstorming and exercises).

1. Plenary lectures

The plenary sessions are designed to be structured around the PowerPoint presentation, which is in-turn structured around the course workbook. During lectures, the facilitator should encourage active participation and discussion around the introduced concepts and topics, and is encouraged to elicit discussion and field questions. In addition to presenting course content, the plenary sessions are meant to encourage participants to brainstorm and debate on concepts and issues extensively as a precursor to any presentations that are given.

2. Exercises

Exercises are designed to elicit participation in small-group work or paired work, as well as individual reflection moments, that serve to unpack key concepts. In some cases, the exercises will be questions, in other cases they will be discussion questions for exploration that provide a sense of the level of understanding gained from the session. In addition to guiding the participants through the exercises, the facilitator should also be able to address any misconceptions and misunderstandings of the concepts.

3. Group work

Group engagements during the sessions are designed to encourage deeper exploration and investigation on focus areas arising from the facilitator. Group work engagement should be designed to enable an environment of critical thinking as well as sharing of lessons from different contexts.

Sessions

SESSION ONE: MAINSTREAMING CLIMATE ADAPTATION FINANCE IN PUBLIC BUDGETING — TOOLS AND APPROACHES

Slides 5–18 of the PowerPoint and pages 9–20 of the workbook

Note: It is recommended that the instructor review the relevant workbook pages prior to conducting the training session.

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).

Learning objectives

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 utilised in ways that enhance the resilience of communities, economies, and ecosystems to the impacts of climate change.

Session approach

The session will largely employ PowerPoint presentations to explain the concepts and existing tools and approaches to mainstreaming climate adaptation finance in public budgeting systems.

Case studies from LDCs are benchmarks and shared with the participants to guide their thoughts, processes and adoptions of best practices.

Timing

PowerPoint presentation: 30 minutes

Plenary discussion: 15 minutes

Practical exercise (*optional*): 60 minutes

Guidance on the use of slides

The resource material for these slides can be found in the workbook version of the course. That information is intended to aid the instructor in expanding on messages from the slides. Brief explanations of key talking points (take-home messages) of select slides are included below; these are the slides for which more explanation is needed.

Slide 7: It is recommended to the facilitator to explain to the participants why budget is an important instrument in financing climate adaptation in the context of the Least Developed Countries. Indeed, budgeting is the cornerstone of effective climate adaptation in Least Developed Countries (LDCs). It's the mechanism that translates policy commitments into tangible actions.

Budgets determine where limited resources are directed. By prioritising climate adaptation projects, LDCs can allocate funds to the most pressing needs, such as early warning systems, disaster preparedness, and sustainable agriculture. So, effective budgeting ensures that funds are used optimally, avoiding wastage and maximising impact.

Slide 10: Mainstreaming climate adaptation into budgeting processes ensures that financial resources are allocated effectively to enhance resilience against climate impacts. This slide presents key considerations for integrating climate adaptation into budgeting processes. Mainstreaming climate adaptation into budgeting processes involves integrating climate considerations into regular financial planning and decision-making. Here are the key entry points:

First, at the budget formulation stage, incorporating climate change risks and vulnerabilities into the budget formulation process, allocating resources to climate-resilient projects and programs, and considering the long-term costs and benefits of climate adaptation measures.

Second, at budget allocation, distributing funds across sectors to address climate change impacts, such as agriculture, water, health, and infrastructure, creating dedicated budget lines for climate adaptation initiatives, and allowing for reallocation of funds in response to changing climate conditions.

Third, at budget execution and monitoring, developing indicators to track the progress of climate adaptation projects, regularly assessing the impact of climate change on budget implementation, and monitoring climate-related expenditures to ensure efficient use of resources.

Slides 11 & 12: The Climate Budget Tagging (CBT) is a new tool and needs deeper explanation to the participants. It is a financial management tool used by governments to track and monitor climate-related expenditures within their national budgets. It essentially involves identifying, classifying, and reporting on public spending that contributes to climate change mitigation (reducing greenhouse gas emissions) and adaptation (building resilience to climate impacts). The report "Climate Change Budget Tagging: a Review of International Experiences" is likely a valuable resource for understanding the current state of CBT around the world. In the global list of the evolution of Climate Change Budget Tagging 2011-2021 presented in **Slide 12**, highlight the case studies from the LDCs countries.

Slide 18: In the case studies of climate adaptation mainstreaming in budgeting systems, explain the lessons learnt from the context, implementation and outcomes of each of the case studies with the participants and how they can learn from those case studies.

SESSION TWO - VARIOUS DEBT-FOR-CLIMATE SWAP SCHEMES

Slides 19–26 of the PowerPoint and pages 21–27 of the workbook

Note: It is recommended that the instructor review the relevant workbook pages prior to conducting the training session.

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.

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.

Learning objectives

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.

Session approach

This session will begin by a storytelling on the history of the traditional Debt Facility vs Debt-For-Nature agreement. After it has been presented the DFC swaps contribution to the Paris

Agreement. The facilitator will focus the presentation of the session on the case studies and Challenges to DFC swaps conception and implementation.

Timing

PowerPoint presentation: 30 minutes

Plenary discussion: 15 minutes

Practical exercise (*optional*): 60 minutes

Guidance on the use of slides:

The resource material for these slides can be found in the workbook version of the short course 2.

Slide 21: A traditional debt facility is a financial arrangement where a lender provides funds to a borrower in exchange for a promise of repayment with interest. This is a standard financial transaction used by governments, corporations, and individuals. Key characteristics of this traditional facility include:

- Lender provides funds
- Borrower promises repayment with interest
- Standard financial transaction

A debt-for-nature agreement is a financial mechanism where a portion of a developing country's external debt is forgiven or repurchased in exchange for the country's commitment to undertake environmental protection measures. It's a tool to alleviate debt burdens while promoting conservation. Key characteristics of this new facility include:

- Debt relief or repurchase
- Commitment to environmental protection
- Focus on developing countries

The following table summarises the key differences between traditional debt facility and debt-for-nature agreement.

Feature	Traditional Debt Facility	Debt-for-Nature Agreement
Purpose	To provide funds for economic development	To reduce debt burden and promote environmental protection
Parties involved	Lender and borrower	Lender, borrower, and environmental organization
Outcome	Repayment of debt with interest	Debt relief and environmental conservation

In essence, a traditional debt facility is a straightforward financial transaction, while a debt-for-nature agreement is a more complex arrangement that links debt relief to environmental actions. The latter is a relatively newer approach that seeks to address both economic and environmental challenges simultaneously.

Slide 22: Debt-for-Climate Swaps (DFCs) offer a promising mechanism to contribute to the goals of the Paris Agreement. By reallocating financial resources from debt servicing to climate action, DFCs can help developing countries:

Increase Climate Ambition	<ul style="list-style-type: none"> ● Freeing up fiscal space: By reducing debt burdens, DFCs allow countries to invest more in climate mitigation and adaptation projects. ● Supporting Nationally Determined Contributions (NDCs): The freed-up funds can be directed towards achieving more ambitious climate targets outlined in NDCs.
Accelerate Climate Action	<ul style="list-style-type: none"> ● Funding climate projects: DFCs can provide direct financing for climate-related initiatives, such as renewable energy, sustainable agriculture, and ecosystem restoration. ● Leveraging additional resources: These swaps can attract further private and public investments in climate action.
Build Climate Resilience	<ul style="list-style-type: none"> ● Investing in adaptation: DFCs can support projects that enhance resilience to climate impacts, such as early warning systems, disaster preparedness, and sustainable infrastructure. ● Protecting vulnerable communities: By reducing debt burdens, countries can better protect vulnerable populations from climate-related risks.
Promote Sustainable Development	<ul style="list-style-type: none"> ● Balancing economic and environmental goals: DFCs can contribute to sustainable development by addressing both debt challenges and climate change. ● Creating green jobs: Investments in climate action can generate employment opportunities and stimulate economic growth.

Strengthening International Cooperation	<ul style="list-style-type: none"> ● Demonstrating solidarity: DFCs can signal a commitment to global cooperation on climate change. ● Encouraging debt relief: These swaps can promote broader discussions on debt sustainability and relief for developing countries.
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By aligning debt relief with climate action, DFCs can be a valuable tool for supporting the implementation of the Paris Agreement and building a more sustainable future.

Slide 24: Debt-for-Adaptation (DFA) swaps offer a unique opportunity for Least Developed Countries (LDCs) to address both debt burdens and climate change vulnerabilities. In converting a portion of their external debt into funds for climate adaptation projects, LDCs can achieve several positive outcomes. The DFAs can help LDCs tap into new sources of climate finance and build capacity to access and manage these funds, and to implement adaptation projects and strengthen governance and institutional capacity in climate-related areas. It can also serve as a tool to leverage private sector investment and can create opportunities for public-private partnerships to finance and implement adaptation projects. Overall, Debt-for-Adaptation swaps have the potential to make a significant contribution to climate change adaptation in LDCs by providing critical financial resources, building resilience, and promoting sustainable development.

Slide 25: It is recommended to the facilitator to not limit the cases studies to the ones of Seychelles (2018) and Belize (2021) presented in the slides. A quick literature review should be conducted at the moment of the course presentation, to consider emerging case studies and best practices to be shared with the participants.

Slide 26: While Debt-for-Climate Swaps offer a promising avenue for LDCs to address climate change, several challenges hinder their effective implementation. First, a significant portion of LDC debt is owed to private creditors, making it difficult to negotiate swaps. So, strict eligibility criteria for DFCs can exclude many LDCs. Second, the amount of debt relief generated through DFCs may be insufficient to significantly impact LDC fiscal space, so some Governments might prioritise other, potentially more lucrative, sources of financing. Third, many LDCs lack the institutional capacity to design, implement, and monitor climate adaptation projects, and they need technical assistance in identifying suitable climate adaptation projects can be challenging. Fourth, the process of negotiating DFC can be complex and time-consuming, involving multiple stakeholders, and setting up the necessary legal and financial structures can be expensive. Finally, DFCs might lead to a reduction in traditional aid flows to LDCs. So, overreliance on DFCs could create dependency and hinder the development of sustainable financing mechanisms.

Practical exercise

It is recommended to the facilitator to brainstorm with the participant on the DFC mechanism and understand how they perceive the potential of such a mechanism for their country and its potential to contribute to financing adaptation actions at national, local and sectoral levels.

So, it can be discussed 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	<ul style="list-style-type: none">▪▪▪
Three (3) key challenges to Debt-For-Adaptation Swaps in your country, sector or Subnational entity	<ul style="list-style-type: none">▪▪▪

SESSION THREE - PRIVATE ADAPTATION FINANCING

Slides 27–35 of the PowerPoint and pages 28–37 of the workbook

Note: It is recommended that the instructor review the relevant workbook pages prior to conducting the training session.

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 mobilising resources, leveraging investments, and fostering innovation and collaboration, adaptation finance can help ensure a sustainable and climate-resilient future for all.

This session present 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.

Learning objectives

The learning objective of Private Adaptation Financing is to equip participants with the knowledge and skills necessary to effectively mobilise and manage 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, the options to leveraging private sector investment for adaptation and also some case studies.

Session pedagogic approach

The session will largely employ a PowerPoint presentation that provides visual graphs and figures to show the rationale and challenges to private adaptation financing in LDCs. The second part of the session focuses on the presentation of various case studies of private adaptation finance through the presentation of their context, problem, solution and impact.

Timing

PowerPoint presentation: 30 minutes

Plenary discussion: 15 minutes

Practical exercise (*optional*): 60 minutes

Guidance on the use of slides

The resource material for these slides can be found in the workbook version of the short course 2.

Slide 30: The private adaptation finance faces several significant hurdles.

- adaptation projects have long-term payoffs, making them less attractive to investors seeking short-term returns. Predicting the exact financial returns of adaptation projects is challenging due to the uncertain nature of climate change.
- Adaptation projects are often seen as high-risk investments due to their exposure to climate-related hazards. Limited insurance coverage for climate-related risks can deter investors.
- There's often a lack of reliable data and information on climate risks and adaptation opportunities. Many adaptation benefits are public goods, making it difficult to capture full returns through private investment.
- Lack of supportive policies and regulations can hinder private sector involvement in adaptation. Bureaucratic hurdles can increase project costs and delays.
- There's a shortage of financial instruments tailored to adaptation projects. While carbon markets can incentivize mitigation, they often overlook adaptation.
- Many businesses and investors lack the knowledge and skills to assess adaptation opportunities. Insufficient support is available to help businesses develop adaptation projects.

Addressing these challenges requires a combination of public and private sector efforts, including policy reforms, risk mitigation strategies, innovative financial instruments, and capacity building initiatives.

Slide 33 & 34: Take some time to demystify the private sector contribution to adaptation financing. Insist on the fact that the private sector contribution to adaptation financing is significant and fills a critical gap in funding the total cost of climate change adaptation. Explain how de-risking adaptation opportunities is crucial to attract private investment, by sharing some practical cases on financial de-risking, policy de-risking, knowledge and capacity building and market development.

	Benchmarking
Financial De-risking	<ul style="list-style-type: none"> ● Government or institutional guarantees can mitigate investment risks. ● Climate insurance products can protect against losses due to climate-related events. ● Combining public and private capital can reduce risk for investors. ● Distributing risk among multiple parties can make investments more attractive.
Policy De-risking	<ul style="list-style-type: none"> ● Clear and stable policies can reduce uncertainty for investors. ● Tax breaks, subsidies, or grants can encourage private sector involvement. ● Streamlining administrative procedures can reduce project timelines and costs.
Knowledge and capacity Building	<ul style="list-style-type: none"> ● Providing support for project development and implementation can enhance investor confidence. ● Improving data availability on climate risks and adaptation opportunities can reduce uncertainty. ● Training investors and project developers on climate adaptation can increase their expertise.
Market Development	<ul style="list-style-type: none"> ● Developing standardized project structures can facilitate investment. ● Creating platforms to connect investors with suitable projects can improve efficiency. ● Establishing clear metrics for measuring adaptation impact can enhance investor trust.

As examples of de-risking in climate action, the Green Climate Fund provides grants, loans, and equity investments to support climate projects. The African Risk Capacity (ARC) offers sovereign risk insurance against extreme weather events. The Climate Bonds Initiative develops standards for green bonds to attract climate-conscious investors.

Practical exercise

Respond individually or in group to the three following questions

Questions	Answers
1. What do you think are the challenges to mobilise private investment for climate change adaptation in your country and/or in your sector?	<ul style="list-style-type: none">▪▪▪
2. What should be done, by who, to engage the private sector in financing climate change adaptation?	<ul style="list-style-type: none">▪▪▪
3. What are the entry points?	<ul style="list-style-type: none">▪▪▪

SESSION FOUR - CARBON MARKET MECHANISMS FOR ADAPTATION FUNDING

Slides 36-45 of the PowerPoint and pages 38-47 of the workbook

Note: It is recommended that the instructor review the relevant workbook pages prior to conducting the training session.

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 ETS) 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 was adopted at the 21st Conference of the Parties (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 made to enhance transparency, integrity, and ambition in carbon trading mechanisms to align with the goals of the Paris Agreement. It is now accepted by the vast majority that carbon markets have played a crucial role in incentivizing emissions reductions, promoting clean technologies, and mobilising 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 the carbon market works.
- The state and trends of carbon markets.

- The carbon market mechanisms for adaptation funding.
- The challenges in implementing market mechanisms in LDCs.

Learning objectives

The learning objective of carbon market mechanisms for adaptation funding session revolves around understanding how the market mechanisms can support adaptation efforts in response to climate change impacts. By the end of the session, participants will strengthen their capacities in understanding 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.

Session pedagogic approach

The session will start with a Brainstorming on a simple question: **WHAT DO YOU UNDERSTAND BY CARBON MARKET MECHANISMS?**

After, the facilitator should spend time explaining how the Carbon market works, the state and trends of carbon markets, Carbon market mechanisms for adaptation funding and the challenges in implementing market mechanisms in LDCs.



Timing

PowerPoint presentation: 30 minutes
 Plenary discussion: 15 minutes
 Practical exercise (*optional*): 60 minutes

Guidance on the use of slides

The resource material for these slides can be found in the workbook version of the short course 2.

Slide 37-42: The carbon market functions as a platform for trading **carbon credits**, which essentially act like permits to emit a certain amount of greenhouse gas (GHG), typically one ton of carbon dioxide equivalent.

Generally, a carbon market works as describe as follow:

- a) **Setting a Cap:** A regulatory body, often a government or an international organisation, 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.

Slide 43: The involvement of Least Developed Countries (LDCs) in carbon markets is a complex issue with both opportunities and challenges.

- Currently, LDCs have limited participation in established compliance carbon markets due to various factors. These include:
- Setting up and managing a carbon pricing system requires robust institutions and technical expertise, which may be lacking in some LDCs.
- LDCs are often more focused on adapting to the impacts of climate change rather than mitigation efforts through carbon markets.
- Reliable data on emissions and emission reduction potentials is often scarce in LDCs, making it difficult to design and implement effective carbon pricing schemes.

Practical exercise

Considering the challenges in implementing market mechanisms in LDCs presented during the training, 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

Slides 44-48 of the PowerPoint and pages 48-60 of the workbook

Note: It is recommended that the instructor review the relevant workbook pages prior to conducting the training session.

Introduction and rationale

The rationale for subnational adaptation financing lies in the unique and crucial role that local and regional governments 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 localised 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, decentralised 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 centralised 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 current system features 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 (following figure), which is an innovative model for investing at the local level in developing countries and building sustainable and climate-resilient livelihoods.

Learning objectives

The learning objective of this session on financing subnational climate adaptation actions will equip the participants with the knowledge and skills necessary to understand, plan, and implement effective financing strategies for subnational climate adaptation initiatives. By the end of the session, participants would be better equipped to navigate the complex landscape of financing subnational climate adaptation actions and contribute to building climate-resilient communities and drive sustainable development.

Session pedagogic approach

The session will largely employ a PowerPoint presentation through visual graphs and figures to explain the rationale and barriers to subnational adaptation financing, the case studies and lessons learnt from the Devolved Climate Finance (DCF) and a benchmarking result on subnational climate finance mechanisms for LDCs.

Timing

PowerPoint presentation: 30 minutes

Plenary discussion: 15 minutes

Practical exercise (*optional*): 60 minutes

Guidance on the use of slides

The resource material for these slides can be found in the workbook version of the short course 2.

Slide 46-48: This session of the course focuses on the rationale, opportunities and barriers to subnational adaptation financing in the context of the LDCs. At the top of the presented mechanisms in the workbook, it is asked the facilitator to explore and share other existing instruments at national or local levels.

Subnational governments are on the frontline of climate change impacts. They possess a deep understanding of local vulnerabilities and have the capacity to implement tailored solutions. Thus, subnational climate adaptation financing is crucial for several reasons. The Subnational governments have first-hand knowledge of local climate risks, vulnerabilities, and adaptation needs. They can effectively engage with communities to identify priorities and implement solutions. Also, shorter decision-making processes often lead to quicker project implementation, and subnational financing can help address regional inequalities in climate vulnerability and adaptation capacity. It can support initiatives that benefit marginalised groups often overlooked in national-level planning. In addition, subnational governments can serve as

laboratories for testing innovative adaptation strategies, and successful local initiatives can be scaled up to national or regional levels.

The facilitator should consider highlighting the existing mechanisms for subnational climate actions in the workbook. There are also innovative mechanisms which are emerging to support subnational adaptation. These include: (i) **Performance-Based Grants:** These grants reward subnational entities in LDCs for achieving specific climate goals, such as reducing emissions or increasing climate resilience. (ii) **Climate Bonds for Subnational Entities:** This is an emerging area where LDC subnational governments may be able to issue bonds to raise capital for climate projects. However, institutional capacity and creditworthiness can be challenges.

The facilitator should also consider mapping and sharing on existing mechanisms and national and local levels.

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.