



Covenant of Mayors
in Sub-Saharan Africa

CoM SSA SEACAP Toolbox

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The full SEACAP Toolbox is found here: <https://comssa.org/>



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CoM SSA SEACAP Toolbox

2.1: Introduction to Mitigation Pillar

This chapter is one component of the SEACAP Toolbox for the full Toolbox, please visit: <https://comssa.org/>

What you will learn in this chapter:

- What is climate mitigation?
- The planning phase of the mitigation pillar
- How to compile a baseline emissions inventory
- How to report and act upon a baseline emissions inventory

This chapter has been designed for Local Government Officials and partners completing a SEACAP



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The 3 pillars of a SEACAP



Mitigation

Adaptation

Access to sustainable
energy

SEACAP PROCESS

4 Phases

- **Initiation:** Political commitment and key actors engagement
- **Planning:** Assessments and plan elaboration
- **Implementation:** Putting the SEACAP into practice
- **Monitoring and reporting:** reviewing progress

Milestones and time frame

● YEAR 0

Political Commitment
Signature of PCD

Initiation

Political commitment
Mobilize all municipal departments involved
Stakeholders engagement

Planning

Gain better understanding of local emissions, vulnerability to climate change impacts and access to energy services.
Current policy framework

Climate Mitigation

Prepare a **Baseline Greenhouse Gas (GHG)** emissions inventory: The inventory determine baseline emissions, identifying main emission sources and reduction opportunities.

Climate Adaptation

Prepare a **Climate Change Risk and Vulnerability Assessment (RVA)**: Cities conduct an RVA to identify current and future risks to people and assets.

Access to Energy

Produce an **Access to Energy Assessment (AEA)**: as a dashboard, to overviewing the local status of electrification and cooking fuels access.

Establishment of the vision, where do we want to go? > **TARGET**
Elaboration of the plan: how do we get there? > **ACTIONS**
What to consider when designing actions to reach the targets?

Climate Mitigation

Sectors:

- Buildings / Stationary Energy
- Transport
- Waste

Climate Adaptation

Type of hazards:

- Extreme heat/cold
- Extreme precipitation/drought
- Floods
- Sea level rise

Access to Energy

Sectors:

- Electricity
- Cooking fuels

● YEAR 3

Sustainable Energy Access and Climate Action Plan
Submission of the document

Implementation

Deliver practical actions

Monitoring and reporting

Review progress and readjust priorities

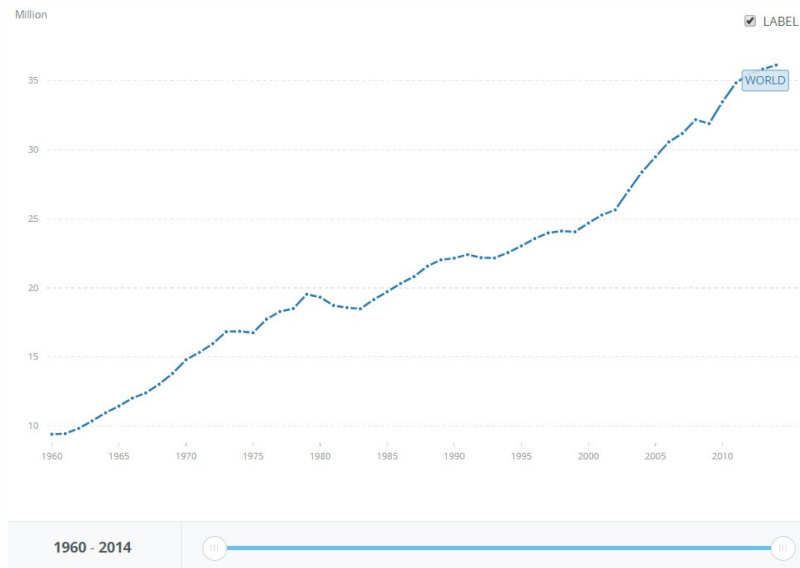
Every 2 years
after submission
local plan

● Progress report
Submission of the document

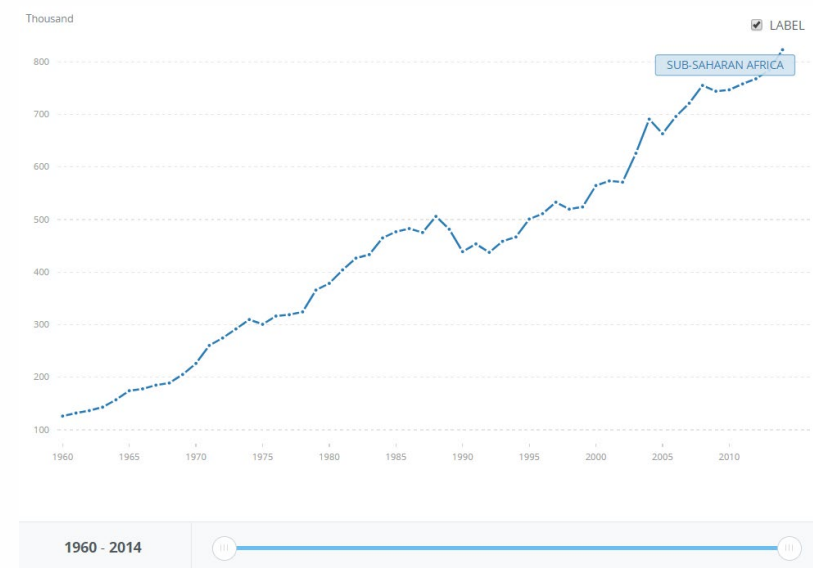
Mitigation

Actions undertaken to reduce the emission of greenhouse gases and their concentrations in the atmosphere

Evolution of GHG emissions: World vs Sub-Saharan Africa



World



Sub-Saharan Africa

Planning phase for the Mitigation pillar

Mitigation

Baseline Greenhouse Gases (GHG)
emission inventory

Elaboration of the plan:
Mitigation actions

Implementation,
Monitoring and reporting



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What is a Baseline Emission Inventory (BEI)?

BEI quantifies the amount of carbon dioxide equivalent (CO₂-eq) emitted due to specific activities in a local government's territory within a calendar year. The BEI enables the municipal authority to select the appropriate actions to reduce greenhouse gas emissions.



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Key Principles of a BEI

- **Simplicity and flexibility:** the approach can be adapted to the specific situation of local authorities (city size, level of expertise, political mandate, budget, etc.) and refined at a later stage;
- **Local Government boundary** (direct emissions and indirect emissions). It coincides with the territory where the final energy is consumed and the one tackled by the SEACAP measures;
- **The main greenhouse gases** to consider for this analysis are: Carbon dioxide (CO₂); Methane (CH₄); Nitrous oxide (N₂O);
- **The main sectors** to be accounted for in the BEI and targeted by SEACAP measures are: Stationary Energy, Transportation and Waste (AFOLU can be taken into account if they represent an important factor of GHG emission);



Which are the source of emissions to be included in the BEI?



- **Stationary Energy**



- **Transportation**



- **Waste**



- **IPPU** (Industrial processes and product use)



- **AFOLU** (Agriculture, forestry and other land use)

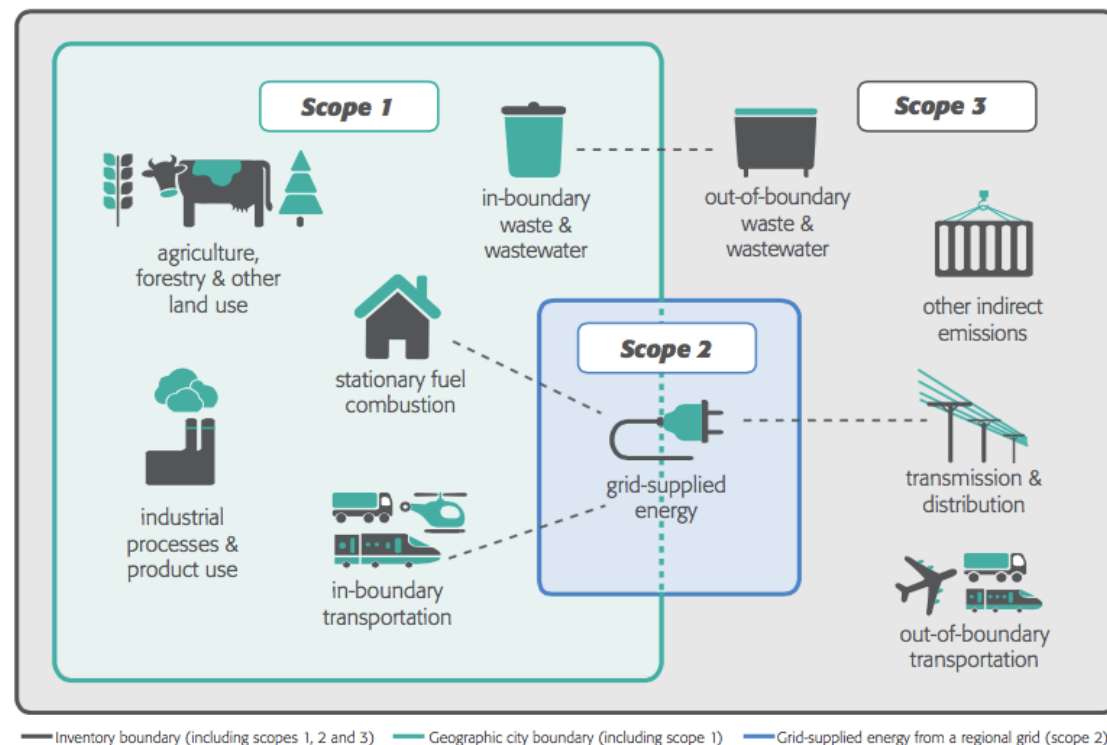
Source: WRI, C40, ICLEI. Global Protocol for Community-Scale Greenhouse Gas Inventories



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What are the sources of emissions to be included in the BEI?

- **Scope 1:** All GHG emissions from sources located within the boundary of the city (e.g. direct fuel use)
- **Scope 2:** All GHG emissions from the use of grid-supplied electricity, steam, heating and/or cooling within the city boundary
- **Scope 3:** All other GHG emissions that occur outside the city boundary as a result of activities within the city's boundary (e.g. landfill emissions when waste generated inside the city but disposed outside)

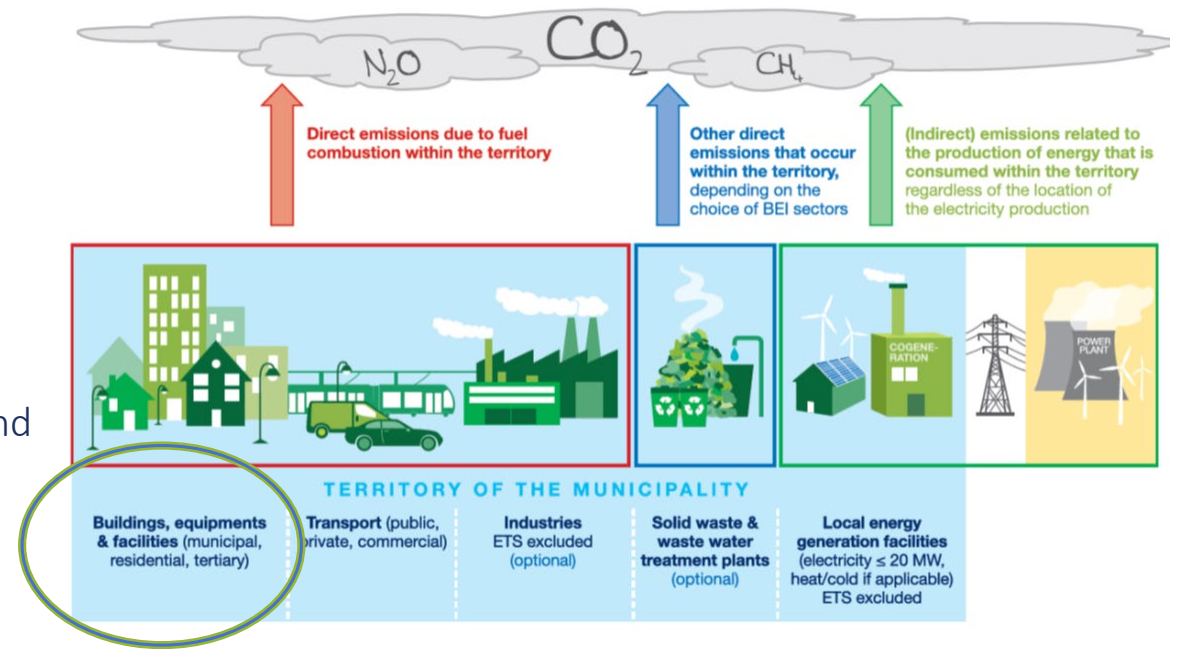


Which are the source of emissions to be included in the BEI?



- **Stationary energy:**

- Residential buildings
- Commercial and institutional buildings and facilities
- Manufacturing industries and construction
- Energy industries
- Agriculture, forestry, and fishing activities
- Non-specified sources
- Fugitive emissions from mining, processing, storage, and transportation of coal
- Fugitive emissions from oil and natural gas systems

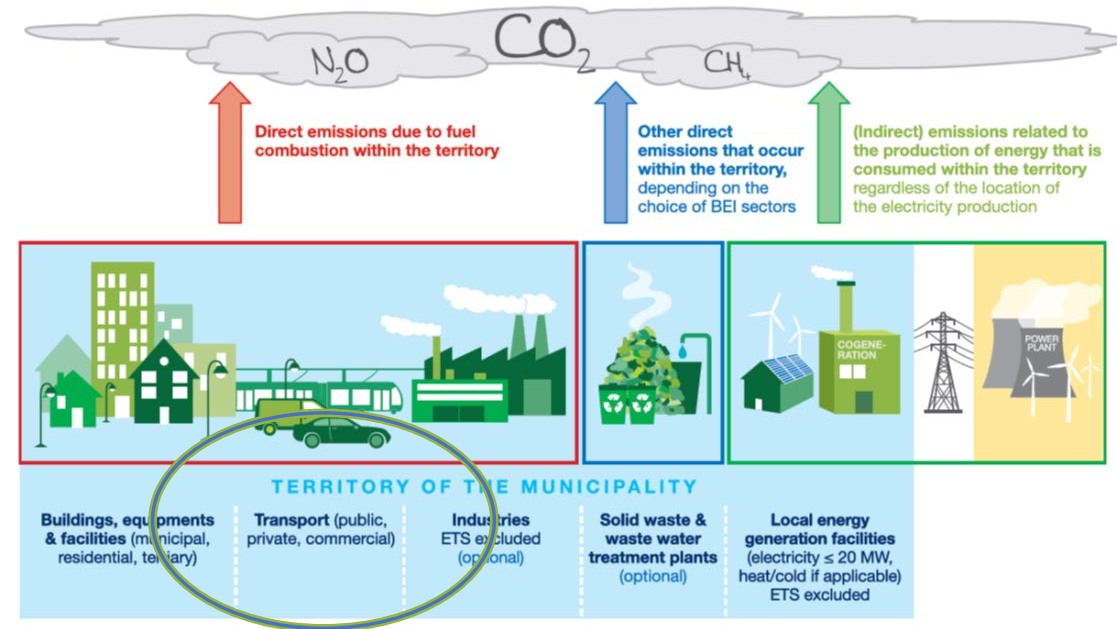


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Which are the source of emissions to be included in the BEI?



- **Transportation:**
 - On-road and rail
 - Waterborne navigation
 - Aviation
 - Off-road



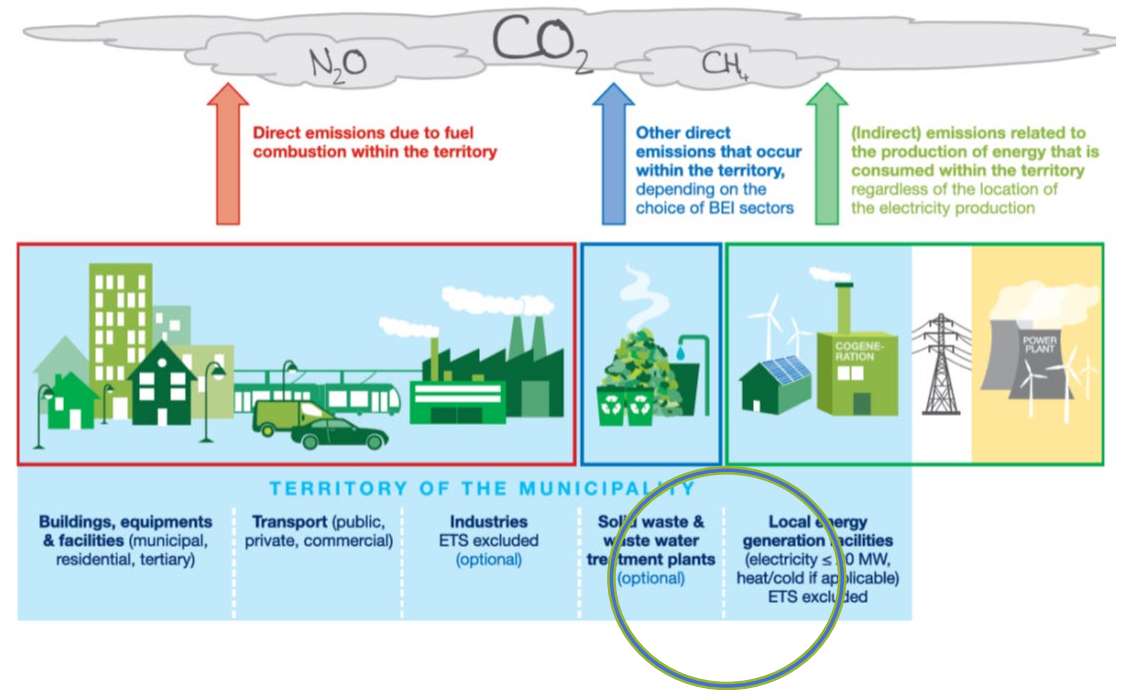
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Which are the source of emissions to be included in the BEI?

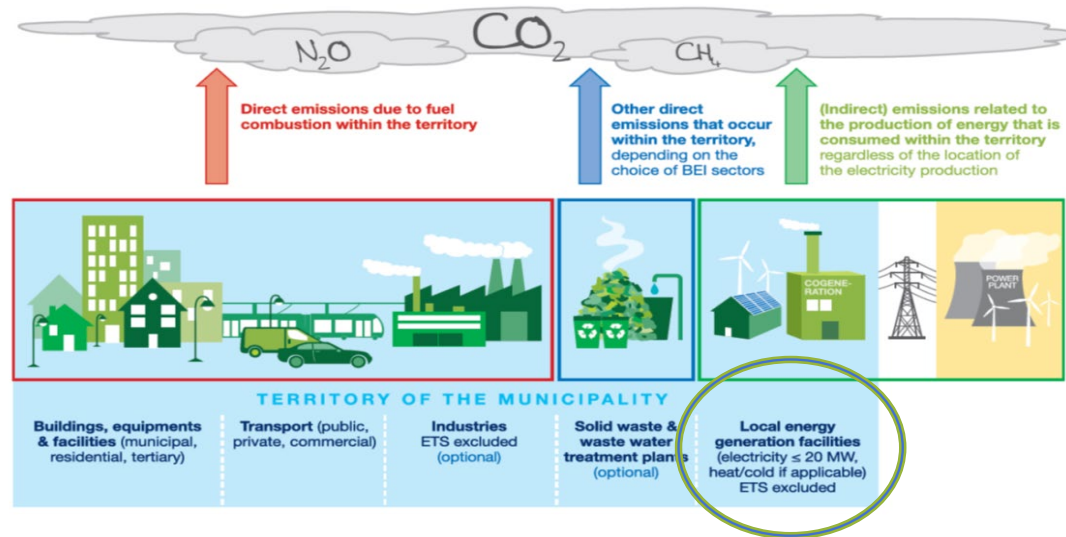


- Waste/ Other non energy related:

- Disposal and treatment of waste
- Wastewater generation



Which are the source of emissions to be included in the BEI?



- **Energy supply:**

- Grid-supplied energy within the local authority boundary
- Grid-supplied energy by facilities owned (full or partial) by the local authority outside the local authority boundary



Reporting BEI on the Joint Research Centre (JRC) template

- The results of the BEI must be reported in the JRC template

Baseline Emission Inventory										
1) Inventory Setup										
GWP (IPCC AR version used)					[Drop-down]					
Types of emissions factors					[Drop-down]					
2) Activity data; Emission Sources and Emissions										
① Please note that for separating decimals DOT (.) is used. No thousand separators are allowed.										
② Please note that in these columns, cities should report multiple rows in each sub-sector for different types of energy or activities.										
③ GHG emissions shall be reported in CO2-eq. CO2 equivalent can be determined										
Sector	Sub-sector	Direct / Indirect / Other	Sub- category	Activity data			Emission factors			
				Type of Activity data	Amount	Unit	Type of GHG gasses	Amount	Unit	Amount
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Institutional buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Subtotal Institutional buildings and facilities				0					
Stationary Energy	Commercial buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Commercial buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Commercial buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Commercial buildings and facilities	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Subtotal Commercial buildings and facilities				0					
Stationary Energy	Residential buildings	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Residential buildings	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Residential buildings	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	
Stationary Energy	Residential buildings	[drop-down]	[drop-down]	[drop-down]	0	[drop-down]	[drop-down]	0	[drop-down]	

Home BEI Mitigation Actions Mitigation Report RVA Adaptation Actions Adaptation planning process AEA Energy Access Actions Annex1 ...

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Elaboration of the plan

3 steps

- Data validation
- Setting emission objectives and targets
- Actions planning



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Setting emission targets – key principles

- **Boundary:** consistent with GHG inventory boundary
- **Target types:** base year; base year intensity; baseline scenario; fixed-level
- **Target year:** the same, or later, as NDC or as set by regional/national chapter (for target years beyond 2030, an interim target between now and 2030 shall be included; if NDC target is before 2030, additional 2030 target should be set)
- **Ambition:** at least as ambitious as unconditional components of NDC (mandatory), higher ambition recommended. If NDC increases, adjustment required within 5 years
- **Units:** percentage reduction from the base year or scenario year (except for fixed level targets)
- Note: target-setting is unpacked in more detail in presentation 2.7



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2.1: Introduction to Mitigation Pillar

This chapter is one component of the SEACAP Toolbox for the full Toolbox, please visit: <https://comssa.org/>

What you learnt in this chapter:

- What mitigation refers to
- The planning phase of the mitigation pillar
- What goes into a baseline emissions inventory (summary)
- How to report and act upon a baseline emissions inventory (summary)

The next chapter is Data Collection:
Greenhouse Gas Emissions



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Thank you



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