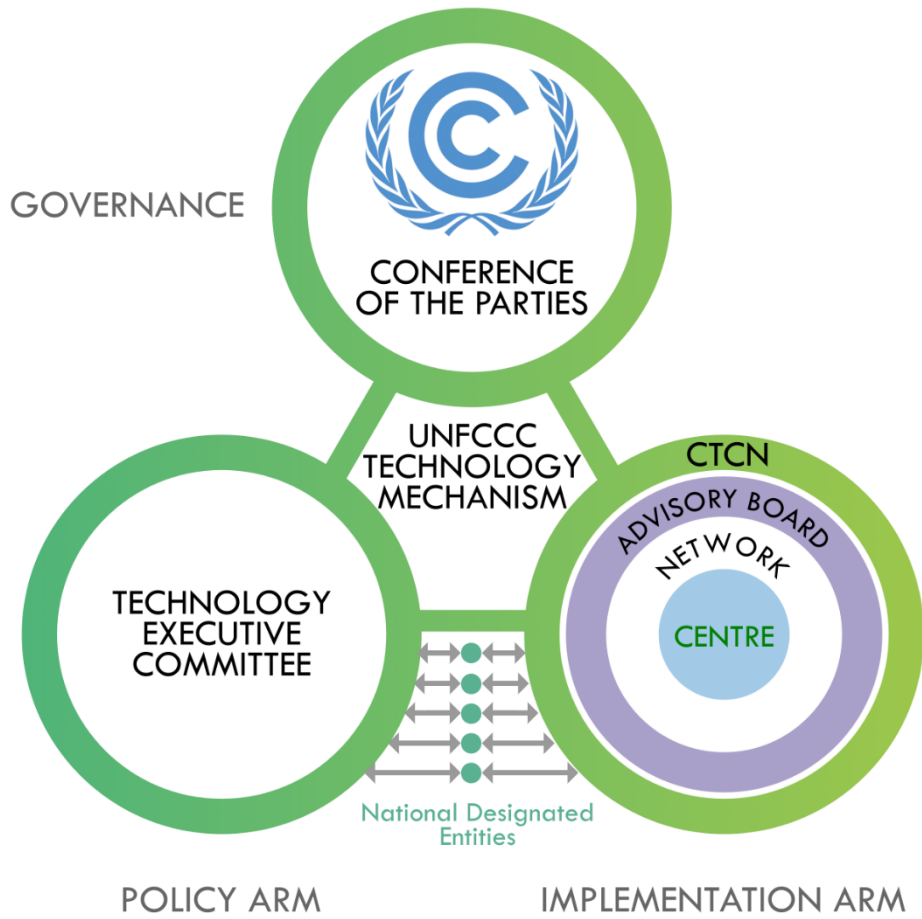


Technical Assistance for Carbon Capture and Storage under the UNFCCC Technology Mechanism

Clarine Ovando

Baku, Azerbaijan, November 2022



What is a TNA and why do one?

- Country-driven initiatives that identify climate technology priorities for mitigation and adaptation, recommend scaling frameworks, and connect projects to financing, addressing policy, finance, and technology barriers.
- TNAs are **action-oriented**, focusing on overcoming barriers to technology adoption and building on existing efforts to address gaps.
- Countries conducting a TNA to explicitly link this process to their NDC commitments
- End goal to create a pipeline of project concepts for investment



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Technology Needs Assessment (TNA) is a set of country-driven activities leading to the identification, prioritisation and diffusion of environmentally sound technologies for mitigation and adaptation to climate change. The TNA project is implemented by the United Nations



copenhagen

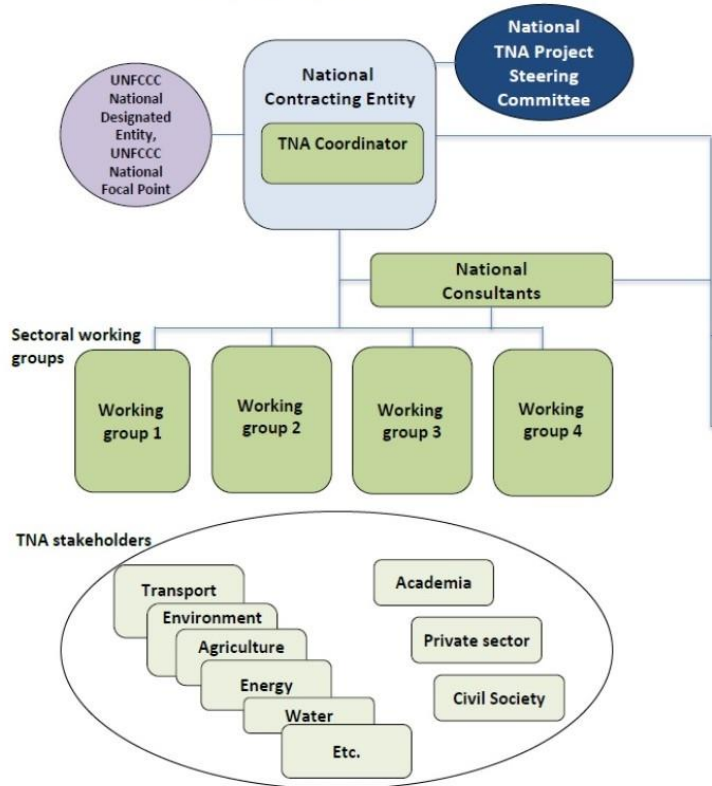
The 3 steps of a TNA (outputs)

1. To identify and prioritise mitigation/adaptation technologies
2. To identify and analyse barriers and an 'enabling framework'
3. Technology Action Plans (TAPs), leading to GCF project concepts

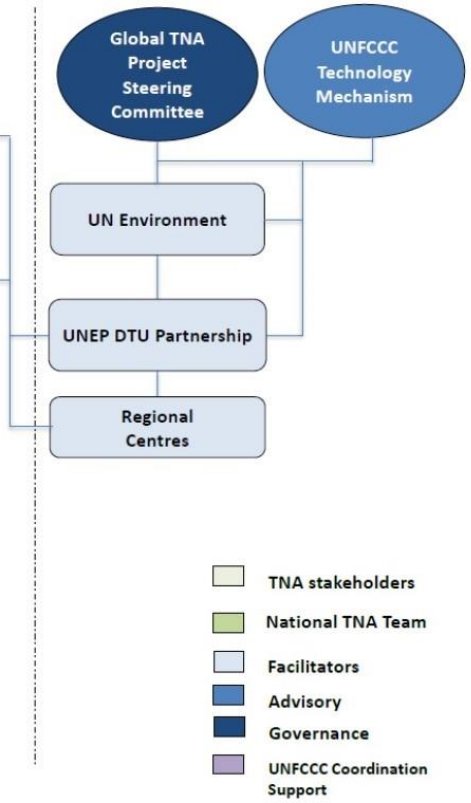




National level



Global level



Step 1. Identification and prioritization

- Trinidad & Tobago launched its first TNA in 2021

Objective	Sector	Technology
Adaptation	Agriculture	<ul style="list-style-type: none">• Pressurized Irrigation System powered by solar.• Caterpillar Tunnels (i.e., greenhouses)
	Water	<ul style="list-style-type: none">• Rainwater harvesting• Water metering
	Health	<ul style="list-style-type: none">• Disease surveillance for climate-related health risks, including vector-borne diseases, waterborne diseases, and extreme heat events
Mitigation	Power Generation	<ul style="list-style-type: none">• Utility scale solar• Energy Audits and Efficiency improvements of the supply side
	Industry	<ul style="list-style-type: none">• Biofuels• Carbon capture and storage technology <p>Targets: Conducting feasibility studies on reservoir capacity and stability, and identifying carbon dioxide sources. Creating the policy and legislative framework for CCS.</p>
	Transportation	<ul style="list-style-type: none">• Electric Vehicle in the transportation system (Public and private vehicles)• ICT for intelligent traffic management systems

Step 2. Barrier Analysis and Enabling Framework

Economic & Financial Barriers

Carbon capture and storage technology

Financial	<ul style="list-style-type: none">• High capital costs make the technology economically challenging.• Limited data for cost estimates and baseline scenarios hinders access to funding.• Retrofitting existing CO₂ point sources (e.g., LNG, natural gas) is expensive.
Measures to address financial barriers: <ul style="list-style-type: none">• Government incentives for investing in CCS .	
Regulatory	<ul style="list-style-type: none">• No clear regulations on storage, monitoring, and CO₂ transport.
Technical/Market	<ul style="list-style-type: none">• Limited storage capacity and geological challenges affecting stability and permanence.
Awareness/ Consumers	<ul style="list-style-type: none">• Low public awareness and understanding, with CCS perceived as high-risk
Environmental/Other	<ul style="list-style-type: none">• Concerns about carbon dioxide leakage during storage or transport.• Operating the capture unit may require extra fossil fuels, potentially increasing emissions.

Measures to address non-financial barriers:

- Develop a framework for long-term CO₂ storage liability | • Add CCS to CEC Designated Activities.
- Update the Pipelines Act to include CO₂ pipelines. | • Strengthen coordination between key entities.
- Use existing CEC processes for short-term liability.