CLIMATE TECHNOLOGY CENTRE & NETWORK

PROGRAMME OF WORK 2023-2027

21 October 2022

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ACRONYMS AND ABBREVIATIONS

1. AB: Advisory Board
2. BINGO: Business and industry non-governmental organizations
3. COP: Conference of the parties (under the UNFCCC)
4. CTCN: Climate Technology Centre & Network
5. Danida: Danish international development assistance, Denmark
6. EU: European Union
7. GCF: Green Climate Fund
8. GEF: Global Environment Facility
9. GHG: Green House Gas
10. IPCC: Intergovernmental Panel on Climate Change
11. KMS: Knowledge Management System
12. LDC: Least Developed Country
13. MRV: Measurement, reporting and verification
14. NAMA: Nationally Appropriate Mitigation Actions
15. NDA: National Designated Authority
16. NDE: National Designated Entity
17. NDC: Nationally Determined Contribution
18. NGO: Non-Governmental Organization
19. RINGO: Research and independent non-governmental organisations
20. RE: Renewable Energy
21. Sustainable Development Goals (SDG)
22. SIDS: Small Island developing states
23. TA: Technical assistance
24. TAP: Technology Action Plan
25. TEC: Technology Executive Committee
26. TNA: Technology Needs Assessment
27. ToC: Theory of Change
28. UNEP: United Nations Environment Programme

1 INTRODUCTION

1.1 THE UN CLIMATE TECHNOLOGY CENTRE AND NETWORK

The UN Climate Technology Centre and Network (CTCN) is the implementation arm of the Technology Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC). The CTCN promotes technology transfer at the request of developing countries as they seek to meet their Nationally Determined Contribution (NDC) targets and Paris Agreement commitments.

Technologies are considered vital to building climate-resilient societies, transitioning to low-carbon economies, and bridging an ever-expanding reliance on modern technical know-how to create green jobs and compete in the global marketplace. An overwhelming number of developing countries' Nationally Determined Contributions indicate a requirement for technology support and capacity development in order to implement their commitments. Many of the necessary technologies exist already. The real challenge is to get them where they are needed, to adapt them and to scale up.
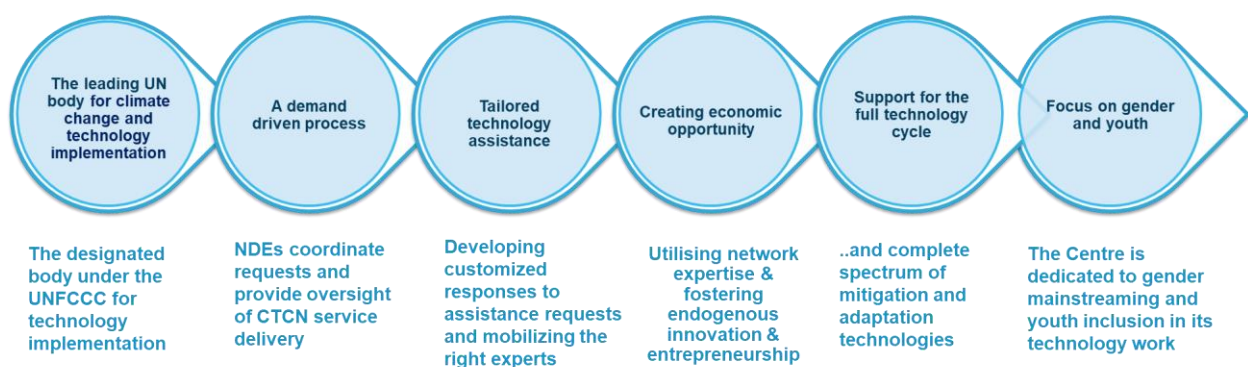
The Climate Technology Centre is a unique demand-driven organisation that has been created specifically to meet these needs. Since its inception in 2014, the CTCN has served over 108 developing countries, providing access to over 390 targeted mitigation and adaptation technologies that enable countries to achieve their NDCs and commitments under the Paris Agreement. The CTCN accomplishes this by serving as a trusted matchmaker, delivering technology solutions by mobilizing the public and private sector and technology actors.

1.2 THE CTCN VALUE PROPOSITION

According to the findings of the second independent review of the CTCN commissioned by the UNFCCC and conducted by Ernst & Young (2021), "*The CTCN operates in a very specific space without real competition from similar centres. It is therefore well-positioned to help countries meet their Nationally Determined Contributions and Sustainable Development Goals*".

The CTCN's value proposition (Figure 1) sets out its competitive advantage and seeks to articulate the value that is delivered through the CTCN's services.

Figure 1: The CTCN value proposition

The leading UN body for climate change and technology implementation	A demand driven process	Tailored technology assistance	Creating economic opportunity	Support for the full technology cycle	Focus on gender and youth
The designated body under the UNFCCC for technology implementation	NDEs coordinate requests and provide oversight of CTCN service delivery	Developing customized responses to assistance requests and mobilizing the right experts	Utilising network expertise & fostering endogenous innovation & entrepreneurship	..and complete spectrum of mitigation and adaptation technologies	The Centre is dedicated to gender mainstreaming and youth inclusion in its technology work

There are several characteristics that distinguishes the CTCN from other organisations including:

- ✓ **The CTCN has an official mandate from the UNFCCC and the Paris Agreement to support the implementation of climate technology development and transfer:** The CTCN supports developing countries at their request to develop and deploy technologies as they seek to meet their climate change and sustainable development goals. The CTCN also offers the world's largest online source of cleantech information (www.ctc-n.org) with access to mitigation and adaptation descriptions, case studies, publications, technology service providers, tools, and webinars.

- ✓ **The CTCN follows a demand-driven process:** National Designated Entities (technology representatives selected by each country's government) coordinate requests from local communities, civil society, the private sector, and public institutions, ensuring alignment with NDCs and national climate change priorities in-country. To August 2022, the CTCN has received 398 requests for technical assistance from 108 countries. The ability to respond to the diverse range of requests and provide customised services is made possible through a continuously growing number of technology service providers in the CTCN members (over 700 globally), who are contracted to provide technical assistance and capacity building to developing countries on environmentally sound technologies.

- ✓ **The CTCN delivers tailored technology assistance:** CTCN experts provide one on one support to National Designated Entities to identify and implement appropriate environmentally sound technologies that suit their national circumstances, ensuring all developed and implementing technical assistance is adapted to local conditions, socially and environmentally sound, gender responsive and accessible for all.

- ✓ **The CTCN creates economic opportunities:** New opportunities are created. by fostering endogenous innovation and entrepreneurship for environmentally sound or green technologies.

- ✓ **The CTCN's technical assistance is across the full technology cycle and complete spectrum of mitigation and adaptation technologies:** The CTCN delivers technical assistance, capacity building and knowledge sharing for a full range of technology priorities, from needs assessment and innovation to identifying financing sources for upscaling. The Centre also strengthens the underlying technology structures which enable technology development and deployment, such as policies, regulatory structures, and market creation.

- ✓ **The CTCN is dedicated to gender mainstreaming and youth inclusion in its technology work.** The CTCN co-hosts the global Gender-Just Climate Solutions capacity building programme and operates Youth Climate Innovation Labs, and an online Gender Hub providing hundreds of gender-related publications, tools, and case studies.

The approach to this 3rd Programme of Work involves building on the CTCN's success of the first 10 years and adding additional focus to future opportunities. The background to the CTCN that informed the development of this 3rd Programme of Work is in Annex A.

The focus of the 2022 Operational Plan for the CTCN was on 'Supporting developing countries to implement NDCs and scale-up transition to ambitious low emission, resilient pathways'.[1] It recognised how the number of countries announcing pledges to achieve net-zero emissions over the coming decades continues to grow. Given the call for enhanced NDC ambition, the CTCN's focus over the coming five years is on supporting developing countries to close the gap between stated technology needs and actual implementation. This Programme of Work looks to build on its success in delivering technical assistance to countries. Such successes are building on its work in energy systems (including energy efficiency and district heating), electro mobility, adaptation and agro-forestry. These are examples of the systems wide transformations that the CTCN will build on in the coming five year programme of work and examples of such technical assistance includes:

- Supporting Jamacia, Sudan and Vietnam to harness innovation & RD&D through technical assistance, including earth observation tools and the application of marginal abatement cost curves
- Assisting Pakistan to develop its energy efficiency law, including supports through the development of a national certification system for energy auditors and energy managers
- Delivering the Adaptation Fund Climate Innovation Accelerator across Agriculture, Rural Development (resilience), Food Security, Water management sectors, involving the implementation of 25 TA projects (valued at up to $250,000 USD each)

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[1] https://www.ctc-n.org/sites/www.ctc-n.org/files/AB_2021_18_18.1%20Annual%20Operating%20Plan%20and%20Budget%20for%202022_0.pdf

- Engaging with the private sector, creating linkages to providers and matchmaking services through the delivery of SME Technology Clinics in Africa and Asia Pacific, increasing efficiency and business competitiveness in Kenya, Tanzania and Thailand
- Developing Agro-Forestry Policies for Kenya, Belize and Nepal
- Collaborating with Tonga on drafting and adopting its Energy Efficiency Masterplan, aiming to reduce energy use in transport and buildings by more than 50% by 2030
- Developing e-mobility policies for Ghana and Zimbabwe, including and assessment of the market readiness to deploy electric transportation systems and drafting the e-mobility implementation roadmap and framework for charging infrastructure
- Advising Bosnia on its district heating plan through a city-wide mapping of the energy flows and the identification of leaks using aerial drones and thermal imagery
- Piloting innovative tools and mechanisms for financing climate adaptation technologies and build relationships between the municipalities, private sector and financial markets and infrastructure funds in Nelson's Dockyard National Park in Antigua and Barbuda, Chokwe in Mozambique and Kaysone Phomvihane City in Laos
- Strengthening engagement with Youth, Women and Indigenous groups through initiatives including a Youth Knowledge Exchange programme, Climate Innovation Labs & Academies, stakeholder mapping of gender groups
- Building on twenty-nine GCF readiness projects implemented by the CTCN, totaling almost 10 million, USD 178 million USD could be leveraged from concept notes developed as deliverables in 2021

A selection of the most successful dimensions of the CTCN value created in the past 10 years is outlined in Figure 2 below:

Figure 2: Building on previous CTCN successes
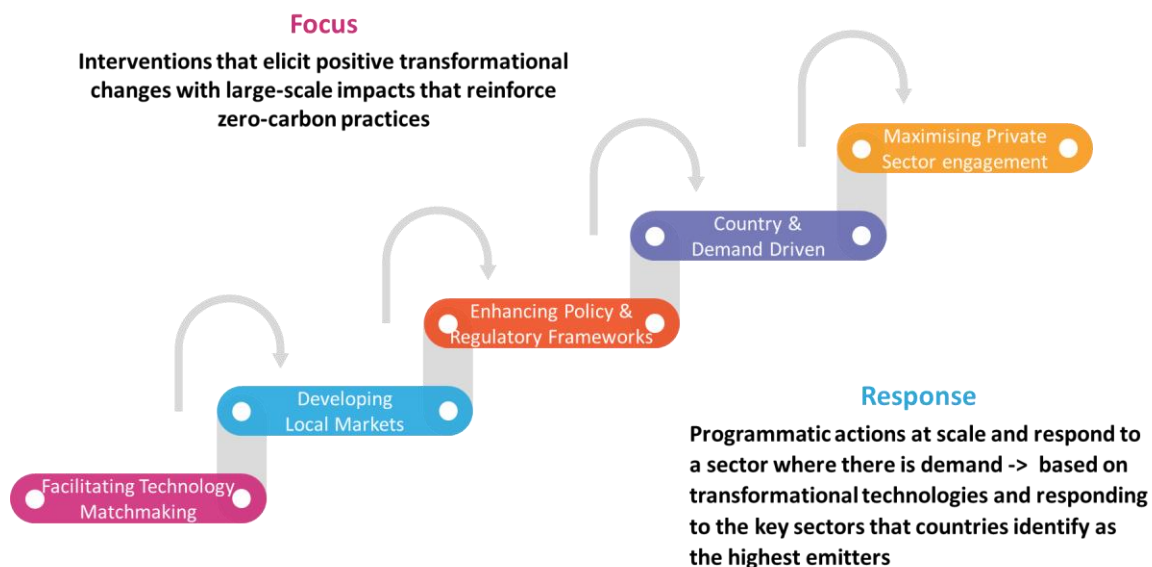
The CTCN's value proposition is informed by its 10 years of implementation experience and is also shaped by the intelligence and experience gained in engaging with parties in the acceleration of technology transfer. Lessons learned are informing and guiding the overall Programme fo Work for the next five years. Such lessons include applying recommendations from independent reviews, to learning from TA processes, to delivering new implementation and business models to build scale and respond to needs, to listening to core stakeholders through a comprehensive stakeholder consultation exercise.

The development of new applications of the transferred technology signifies an important step in the growth of innovation capacity of a country. It is based on an acknowledgement that there is a large appetite and need for adaptation and mitigation-related technical assistance in developing countries. It recognizes that developing

countries continue to need support to articulate their adaptation and mitigation technology demands. The ability to learn, use and adapt the acquired technology remains critical to successful implementation. The implementation of the 3rd Programme of Work further acknowledges that developing countries are seeking initiatives to improve their capacity to identify and assess innovative adaptation and mitigation practices, products, and technologies. It is further informed by an approach that includes the following 4 dimensions:

Figure 3: CTCN Delivering Value for countries in delivering their NDCs, TNA and TAPs across this Programme of Work
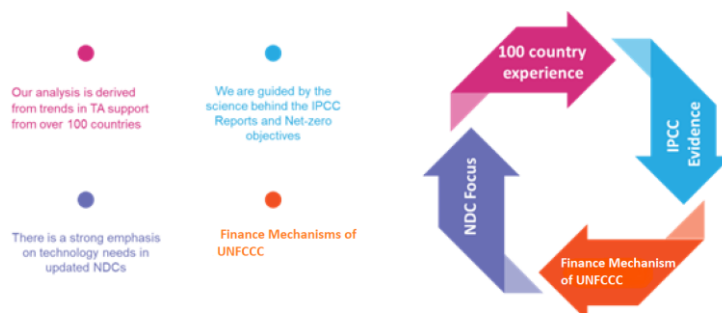
1.3 APPROACH TO THE DELIVERY OF THE 3RD PROGRAMME OF WORK

The CTCN's approach to delivery of its Programme of Work for the period 2023-2027 is based on three components:

- **Enhancing collaboration with the Technology Executive Committee:** The CTCN acknowledges the importance of collaboration with bodies and constituency groups both under and outside the Convention. This Programme of Work seeks to enhance its coordination with the Technology Executive Committee (TEC) to achieve the goals of the Technology Mechanism.

- **Demand driven approach to meet requests from countries**
  The CTCN serves as a demand driven and trusted technology partner matching developing country needs for climate change-related equipment, methods, and capacity development. Climate challenges and opportunities are dependent on various factors which includes local conditions, size of market, levels of economic development and absorptive capacities. Climate change is an amplifier of existing climate variation and will affect diverse communities, regions, and industries in different ways, presenting both opportunities and risks. For example, Small Island Developing States (SIDS) face unique challenges due to their limited geographical area and particular exposure to rising sea levels and extreme weather events. At the same time, SIDS are heavily dependent on imported oil and other fossil fuels to meet their energy needs, which poses economic and energy vulnerability to the islands. By working closely with NDEs the CTCN can ensure that support to climate technology adoption, development, and transfer is available in response to the challenges. In addition, the CTCN will focus on to strengthen collaboration with the owners of technologies through its network of institutions including the financial institutions, research institutions, consortium members, NDEs and all key stakeholders.

- **2 Enablers that shape 5 system transformations:** This Programme of Work is building on achievements to date and is introducing two enablers (National Systems of Innovation and Digitalisation) that shape 5 system transformations. It acknowledges that many essential technologies already exist — the challenge is to get them deployed where they are needed, and to build the enabling environments to support technology innovation, adaptation and scale-up implementation. The past 10 years of technical assistance has reflected how countries are seeking system wide transformations in areas such as water-energy-food nexus, sustainable-mobility, buildings and infrastructure, energy systems, and business and industry.

The collaboration would be reinforced through:

a. **Facilitation of information sharing across countries via south- south and triangular collaboration**: Collaboration and knowledge sharing are central pillars of the CTCN. The CTCN aims to reinforce the capacity of countries to facilitate information-sharing, collaboration, and networking. This will enable the exchange of best recommended practices, experience and knowledge on technology development and transfer and on endogenous technologies. This also involves strengthening the capacity of countries and communities to be more resilient and to cope better, in terms of skills and the ability to access suitable finance for scale up and replicative actions. This will build on the CTCN's existing efforts to implement gender mainstreaming in all its activities (guided by its Gender Policy and Action Plan) and its capacity building and mentoring support.

b. **Creating markets through removal of institutional and regulatory barriers:** The barriers that are often encountered, and the tools to enable climate technology transfer, differ significantly across countries. They often include regulatory barriers, inadequate information, policy uncertainty, and size of markets. Through this Programme of Work the CTCN would facilitate the implementation of mitigation and adaptation actions, including the use of planning tools and processes such as NDCs, technology needs assistance (TNAs), national adaptation plans (NAPs) and technology road maps, development of standards, regulations and enabling policies. It also involves developing market-based financial mechanisms through private sector engagement and aggregation of markets through regional standards using a multi-country approach. The CTCN can also serve as a technology broker, connecting countries' needs to partner that can provide the technologies, capacity building, knowledge and finance they seek.

c. **Multi-country programmatic approach:** The CTCN approach uses a common framework of activities based on a theme or focus area adapted to different national circumstances, and can be used across a subregion, region, or continent. The CTCN will continue to replicate its multi-country and programmatic approaches in implementing technical assistance activities. Multi-country projects promote capacity building, analysis and research at a regional level that permeate direct support at country level. Efficiency gains will be achieved through learnings captured from previous CTCN implemented technical assistance requests where programmes can be delivered based on learning from similar NDE submissions. They also present several efficiency gains such as lower transactional costs and harmonization of policies and regulations across a region. The new programme will build on initiatives, utilising the multi-country technical assistance requests. A case example being the assessment of bioenergy potential across 15 countries in Africa that identified market opportunities for the private sector to bypass the exploitation of traditional biomass. There is large potential for harmonization of policies and market consolidation, enhanced stakeholder engagement, scalable impacts, and north-south, south-south and triangular collaboration.

d. **Engagement with Finance Mechanism of the UNFCCC**: Such engagement includes interaction with Adaptation Fund, Green Climate Fund and the Global Environment Facility as follows:

The Adaptation Fund: The new mid-term strategy (2023-27) of the Adaptation Fund places a strategic emphasis on locally led adaptation action as a cross-cutting theme. This will allow for continuity of the Fund's work under the newly launched funding windows and grant modalities, such as innovation for adaptation technologies. The CTCN will continue to work with the Adaptation Fund to scale up innovative technologies for adaption as well as take up new opportunities for engaging with the Fund's readiness grant funding and support for Direct Access Entities (DAEs). The Adaptation Fund launched the Adaptation Fund Climate Innovation Accelerator (AFCIA) with an announcement of $10m in support to UNEP-CTCN and UNDP to foster innovation in adaptation in developing countries at COP25 in Madrid. Two of the Adaptation Fund's accredited Multilateral Implementing Entities (MIEs), the United Nations Environment Programme (UNEP) and the United Nations Development Programme (UNDP), have been selected as implementing entities of the AFCIA. The CTCN works in conjunction with UNEP, receiving USD 5 million to administrate and aggregate 25 micro-grants projects (up to USD 250,000 each). The primary objective of the AFCIA, administered by UNEP-CTCN, is to support developing countries to test, evaluate, roll out and scale up innovative adaptation practices, products and technologies. Moreover, the AFCIA will facilitate knowledge sharing and the exchange of best practices, strengthening opportunities of South-South and triangular cooperation on innovation in adaptation among the countries.

The Green Climate Fund: The CTCN continues to collaborate with the CTCN on its Readiness and Preparatory Support Programme, especially in terms of developing and updating technology needs assessments and technology action plans to support the implementation of NDCs. By mid 2021, 32

requests were submitted by the UNEP-UNIDO-CTCN to the GCF Readiness and Preparatory Support Programme and the GCF had committed USD 10.2 million for 30 grants. The GCF Secretariat is currently developing the draft strategic plan for 2024-2027, guided by the Board. The CTCN envisages future collaborative planning with the GCF and to work with parties and help prepare their readiness projects including the PPF for GCF support. At the March GCF 2022 meeting reconfirmed the GCF commitment to continue engaging with CTCN and TEC guidance with view to promoting technology innovation, incubation, acceleration, growth, transfer, deployment, and gender mainstreaming through its 2022 Workplan.[2] The GCF continues to engage and consult with the CTCN and TEC in supporting incubators and accelerators

The Global Environment Facility: The CTCN will continue its engagement with the GEF and explore opportunities for accessing the GEF 8 funding cycle. The CTCN continues to engage with the GEF and its regional centres in supporting developing countries on technology-related needs and activities for enhanced climate action. The project *Piloting Innovative Financing for Climate Adaptation Technologies in Medium-sized Cities* (approved in 2020 as part of the GEF Challenge Program for Adaptation Innovation), is executed by the CTCN. This is a 5-year pilot grant innovation programme (2020-2025) involving the implementation of 25 TA projects (valued at up to $250,000 USD each). This project develops a methodological approach and financing toolkit for medium sized cities and conducts on-the-ground pilot projects in three cities in Mozambique. This project will support selected cities in adopting a systematic approach to prioritizing infrastructure needs, identifying key investment projects and matching with private financiers, leveraging the CTCN network for climate change technology data.

To achieve success, the CTCN must continue to work collaboratively with stakeholders in the delivery of the Programme of Work and secure /ensure that the financial and technical parameters are in place. Additional information on the long-term sustainability of such CTCN interventions is presented in Annex C.

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[2] https://www.greenclimate.fund/sites/default/files/document/gcf-b31-08.pdf

2 PRIORITY AREAS

2.1 THE DELIVERY STRATEGY

Integral to the CTCN's 3rd Programme of Work is the continuation of the delivery of its mandate to respond to country-driven requests for services with a focus on building and strengthening developing country capacity to address technology challenges and opportunities for adaptation and mitigation.

The Climate Technology Centre and Network has benefited from the strategic and technical guidance provided by the Advisory Board, delivering on the mandate provided by the COP. This has enabled the CTCN to respond to the guidance and integrate findings from independent reviews into its annual operating plans and through its Programme of Work.

The CTCN's 3rd Programme of Work involves maintaining the country and demand driven approach while building on its value proposition and differentiator in terms of international technology transfer. CTCN implementation will promote participatory, inclusive approaches that ensure social and gender justice.

2.2 OBJECTIVES

The goal of this Programme of Work is to enable the CTCN to fulfil its mandate from COP. In doing so, it frames the activities required to deliver on functions including action on mitigation and adaptation and enhancing low emissions and climate-resilient development. It is placed in the context of countries presenting and reviewing their nationally determined contributions (NDCs) with the overall intention of enhancing their ambition and align to commitments under the Paris Agreement. In facilitating a country driven response, the CTCN will help to utilise planning tools and processes such as technology needs assessments (TNAs) and enable the implementation of their results (particularly technology action plans and project ideas). It builds on previous CTCN capacity-building related to TNAs; and assistance to shape national adaptation plans, technology road maps, and enhanced enabling environments.

Throughout its first two programmes of work the CTCN provided technical assistance and enhanced capacity-building for climate technology development and transfer at the request of Parties.

This 3rd Programme of Work builds on the CTCN achievements of the past eight years. Continuing its demand-driven approach, it builds on the achievements of the past two programmes and 10 years of providing technical assistance. This new approach aims to take the CTCN's programme further with a focus on system transformations.

This Programme of Work objective is to:

Support Parties to achieve their commitments to the Paris Agreement through technology development and transfer and to implement their NDCs, improve resilience to climate change impacts and mitigate climate change.

The 2023-2027 Programme of Work responds to the need to rapidly accelerate the shift towards climate resilience and emissions reduction.

It aims to facilitate the implementation of mitigation and adaptation action, delivering transformational change and achieving sustainable outcomes and impacts.

It will focus on a suite of activities that contribute to the development, strengthening, and enhancement of countries' capabilities to take effective climate action in the context of the Paris Agreement and associated Technology Framework.

A core dimension of this strategy includes the CTCN facilitating a network of national, regional, sectoral and international technology networks, organizations and initiatives with a view to implementing technical assistance in a resource efficient manner while promoting participatory, inclusive approaches ensuring social and gender justice.

2.3 ENABLERS & SYSTEM TRANSFORMATIONS

The Programme of Work identifies two enablers to focus effort on, allowing it to respond more quickly and effectively to the needs of developing country parties and build the scale of its interventions.

The development of two enablers within this Programme of Work is in response to the Conference of Parties calls for programmatic, multi-country, and transformational work, incorporating findings from independent reviews and in response to the intensive stakeholder engagement that informed the development of this Programme of Work. This approach complements the country and demand-driven approach, increasing the efficiency and impact of CTCN interventions and investments.

The round of consultations also informed the development of this Programme of Work, specifically identifying the outcomes the CTCN's stakeholders wish to achieve over this five-year period. In determining how best to achieve these intended outcomes stakeholders identified two enablers (National Systems of Innovation, Digitalisation) that can assist countries in terms of their NDC implementation. In addition to the enablers, the regional consultations with the NDEs also identified five system transformational areas to complement CTCN's demand driven delivery model.

The selection of enablers and system transformations is informed by the consultation exercise but also guidance provided by the IPCC: *'Policies addressing innovation systems have helped overcome the distributional, environmental, and social impacts potentially associated with global diffusion of low-emission technologies. Innovation has lagged in developing countries due to weaker enabling conditions. Digitalisation can enable emission reductions, but can have adverse side-effects unless appropriately governed'* (IPCC AR6 B4 Summary for policymakers, p13)

Figure 4 frames the enablers and system transformations.

Figure 4: Introducing the CTCN's enablers and system transformation areas to contribute to system wide transformation:
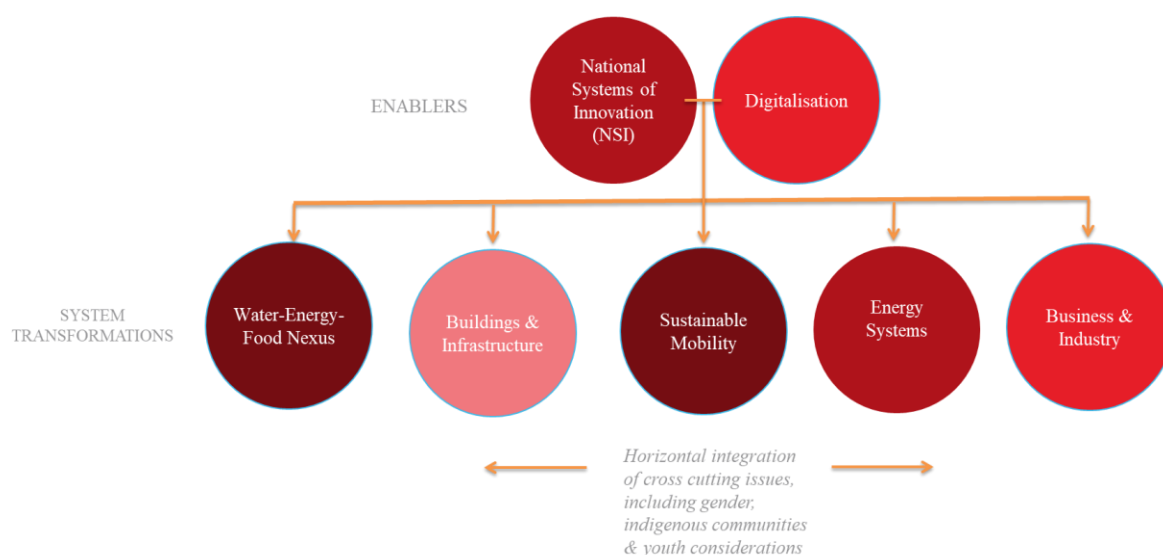
National Systems of Innovation enabler: The CTCN will support the development of national systems of innovation to support collaborative approaches to climate technology research, development, and demonstration (RD&D); the creation and promotion of relevant enabling policy to incentivize and nurture a supportive environment for innovation; and the active engagement of the private sector and closer collaboration between the public and private sector.

The Technology Executive Committee describes a National Systems of Innovation as 'a network of actors, institutional contexts and linkages that underlie national technological change'[3].

There has been an emergence of a greater understanding of, and emphasis on, the role of innovation systems (at a national, sectoral, and technological level) to help developing countries with the climate technology transition. (TEC 2015; IPCC, AR6, p2746). The Programme of Work cites examples of innovation as approaches that include support to policy, institutional and regulatory framework development and planning processes, and the development of technology transition pathways that stimulate the uptake of climate technologies.

With a focus on national systems of innovation as an enabler, the CTCN's Programme of Work aligns with the innovation, implementation. collaboration and enabling environment themes of the Technology Framework. It also builds on IPCC's findings (AR6) that *'Support to strengthen technological innovation systems and innovation capabilities, including through financial support in developing countries would enhance engagement in and improve international cooperation on innovation'*

Digitalisation enabler: Digitalisation as an enabler entail taking advantage of digital tools to accelerate and amplify impact across the 5 system transformation areas. CTCN will also focus on digital solutions which drive resilience in communities and promote Low Emissions Development Strategies (LEDs). It will explore how digital technologies and circular design can bring significant potential in reductions in the global carbon footprint. In this regard, CTCN could focus on promoting access to digital public goods (such as freely available and open-source software, data, and standards) that will enable the design of policies, that support climate risk assessments, planning for adaption and resilience at country level, promotion of low emission pathways and informing climate investment decisions.

The IPCC AR6, identifies Digitalisation as one of the reasons to expect a fast energy transition (p.369), cited as one of 3 megatrends that are transforming delivery of the services in innovative ways – digitalisation, the sharing economy, and the circular economy (p787). Governance can ensure that digitalisation not only reduces GHG emissions intensity but also contributes to reducing absolute GHG emission, constraining run-away consumption. Digital technology supports decarbonisation only if appropriately governed (high confidence). (IPCC AR6, p14).

The Programme of Work cites examples of digitalisation and data as supports to enhance system transformation in areas such as Early warning systems, Nature based solutions and digital technologies to support off grid energy systems, such as blockchain technologies for urban transport and buildings

With a focus on digitalization as an enabler, the CTCN's Programme of Work aligns with the innovation, implementation, and enabling environment themes of the Technology Framework. It also builds on IPCC's call (AR6) to *'deliver services in more efficient, timely, intelligent, and less resource-intensive ways through the use of increasingly interconnected physical and digital systems in many facets of economies'*.

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[3]https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TEC_documents/5be1bf880cc34d52a4315206d54a711b/60d1580f741a4bc783da5a00cf64a879.pdf).

Figure 5: Examples of technical assistance linked to the enablers to achieve systems transformation and placed in context of drivers for technology development and transfer

Enablers & system transformations	Examples of technical assistance, capacity building and knowledge sharing activities	Context
1. National Systems of Innovation 2. Digitalisation	**1. Water-energy-food nexus** 1.1 Sensor deployment to aid food and crop resilience 1.2: Improved water management, accounting, and productivity 1.3 Enhanced platforms and tools for collaboration and learning on agri-food technology development and transfer, supporting the development of national strategies	1. Countries have placed importance on the conservation, restoration, and enhancement of marine and terrestrial ecosystems as well as the area of food security given climate temperature impacts.
	2. Sustainable mobility 2.1: Shared mobility regulation development 2.2: Deployment of low emissions vehicles 2.3 Using digital technologies and data to enhance urban transport and buildings	2. Countries have identified strengthened support for interventions with transformational impact, responding to cross sectoral challenges that improve quality of life and provide equitable access to education and employment
	3. Building and infrastructure 3.1: Building standards, new energy efficiency business models 3.2 Early warning systems 3.3 Nature based solutions and ecosystem-based approaches 3.4 Using digital technologies to support off grid energy systems, including approaches to utilise blockchain technologies to facilitate innovative technology that promote trust and transparency	3. Countries have requested support to respond to chronic and transitional risk to infrastructure resulting from climate change impacts.
	4. Energy systems 4.1 Energy efficiency for industry applications, certification 4.2: Countries assisted in developing national institutional, legal, and regulatory frameworks in support of TNAs, TAPs, NDCs, and NAPs, encouraging just transition and gender responsiveness approaches 4.3: Investigation of emerging technology, policy, demographics, and economics reshaping the energy supply and demand, (for example platforms for peer-to-peer renewable energy trading) 4.4 Decarbonisation initiatives investigating technology options, energy flows, materials flows, life-cycle emissions, costs, policies	4. Countries recognise that new and innovative instruments are required to accelerate the transition and align with ambition of NDCs, TNAs, TAPs, and NAPs implementation.
	5. Business and industry 5.1: Decarbonization initiatives for carbon intensive business and industry, optimizing materials flow and reducing life-cycle emissions, costs, policies 5.2 Active partnerships facilitated by CTCN and TEC collaboration that provides match making services (between scientific community, private sector, co-operatives and financial institutions) through regional forum to assist beneficiaries on new and innovative technologies/solutions/business models 5.3: Capacity building to develop Youth-entrepreneurship initiatives, and support frameworks, policies, and programmes for early-stage innovation	5. Countries have requested support such as information-sharing, collaboration, and networking to exchange best practices, experience and knowledge on technology development and transfer and on endogenous capacity building activities. Such collaboration could involve cross-cutting themes of gender, youth, and indigenous people.

2.4 OVERVIEW OF THE PROGRAMME OF WORK

Table 1 presents the CTCN Programme of Work 2023-2027, aligned to the Technology Framework themes and the CTCN mandate.

Table 1: Programme Framework

2023-2027 Programme structure					System Transformations				
Technology Framework Theme	Mandate/ Service Area	Actions & Activities	Intended Outcome(s)	Key Performance Indicators	Water-Energy-Food Nexus	Sustainable Mobility	Buildings & Infrastructure	Energy Systems	Business & Industry
Innovation	Technical Assistance (TA), including managing requests and responses in the technology cycle)	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)	1. Countries can accelerate innovation at different stages of the technology cycle through collaborative approaches. 2. Countries have clear pathways and options to enhance inclusive, gender responsive, technology development and transfer, including endogenous and indigenous technologies	#Technical Assistance projects focusing on NSI and knowledge flows enhanced (for example, building capabilities of institutions and actors at a national level, creation of R&D policies, Incremental improvements in processes, inputs, or equipment to adapt products and processes to the local environment) # Policies, strategies, plans, legal frameworks, agreements, or regulations proposed, adopted, or implemented under TA # Living labs created with a focus on engaging youth to scale up innovation					
	Technical Assistance that entails, among others, Feasibility assessment; ranking of alternatives; design of projects; collaborative engagement; implementation plan	1.2 Develop technological transition pathways and options for uptake of climate technologies		# TAs completed #TAs completed with digitalization and/or NSI elements # TAs that are followed up with GEF, GCF and/or Adaptation Fund proposals, or inform/modify policies, plans					
	Capacity building, including strengthening networks, partnerships, and capacity building	1.3 Promote collaboration and partnerships in climate technology RD&D activities. Incorporate gender, youth and indigenous peoples' needs and priorities into decision making, especially within the NDC processes and through engagement with NDEs		# Participants engaged via webinars (gender and youth disaggregated) # Matchmaking events delivered #NDE forums delivered, impacting developing countries Increased Participation in meetings of NDEs at regional, global levels # Specific action plans developed and implemented					

				#Regional training programmes for NDEs, gender disaggregated					
Implementation	Foster design & implementation of feasible projects and project ideas. Catalyse; accelerate; upscale implementation of adaptation & mitigation actions on the ground Foster scaling up of implementation of supported climate projects Knowledge management, including fostering collaboration to accelerate technology transfer	2.1 Prioritize climate technologies and facilitate the development, implementation of NDCs, TNAs, roadmaps and pilot studies and alignment with NAPs		# Multi-country TA completed. Seek to increase multi-country opportunities for such projects # Programmes generated to assist in the preparation and implementation of the TNAs and NAP process # TA provided that include components related to enhanced and equitable digitalisation # TNA outcomes that are fully implemented #CTCN interventions aiding TNA/NAPs implementation # Events and trainings co-organized with entities of Financial Mechanism # Technology proposals developed through CTCN					
	Knowledge Management	2.2 Identity and develop recommendations on approaches, tools and means, for the assessment of technologies at national level		Assessments and implementation of transformative technologies through joint and collaborative arrangements # Information resources, national plans, contributing to national processes					
Collaboration & Stakeholder engagement	Involve stakeholders in identification, development & implementation including matchmaking and broad-based support	3.1 Design policies, regulations and standards that create enabling environments for climate technologies and deliver capacity-building		# Knowledge resources developed # Stakeholders engaged in sharing knowledge on existing technologies Measured increases in capacity (increased awareness)					
	Knowledge Management	3.2 Enhance the capacity of the NDEs to plan, monitor and achieve technological transformation	3. Stakeholders are actively engaged and have strengthened capacity to implement climate action through collaboration	# Active partnerships established # Collaborations in access of funds/ in mobilisation of funds #TA supported by entities of the Financial Mechanism or other international financial entities Dissemination of materials to stakeholders through electronic and print media Increased visibility of NDEs and CTCN					
	Capacity building for ultimate implementation	1.3 Promote collaboration and partnerships in climate technology RD&D activities. Incorporate gender, youth and indigenous peoples' needs and priorities into decision making,		# Participants engaged via webinars (gender and youth disaggregated) # Matchmaking events delivered					

		especially within the NDC processes and through engagement with NDEs		#NDE forums delivered, impacting developing countries Increased Participation in meetings of NDEs at regional, global levels # Specific action plans developed and implemented #Regional training programmes for NDEs, gender disaggregated					
Enabling environment and capacity building	Technical Assistance to ensure ultimate implementation	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)*	4. Countries have enhanced enabling environments, including policy and regulatory environments and participatory processes to develop, transfer and deploy climate technologies.	#Technical Assistance projects completed with a focus on NSI and knowledge flows enhanced (for example, building capabilities of institutions and actors at a national level, creation of R&D policies, Incremental improvements in processes, inputs, or equipment to adapt products and processes to the local environment) # Policies, strategies, plans, legal frameworks, agreements, or regulations proposed, adopted, or implemented under TA # Living labs created with a focus on engaging youth to scale up innovation					
	Knowledge Management	4.1 Strengthen knowledge and engagement in an inclusive manner and facilitate collaboration among relevant international organizations, the private sector, academia, and civil society	5. Countries have access to Technical Assistance and financial support to enhance development and transfer of gender responsive technologies	# Private sector collaborations # Citizen(s) led, community-based initiatives # University exchange programmes focussing on youth					
Support	Technical Assistance to ensure ultimate implementation	5.1 Facilitate access to Financial Mechanism of the UNFCCC and mobilize various types of support including pro-bono and in-kind support		Increased generation of technical and financial support. # Capacity Building and Training Workshops, such as TNAs, TAPs, topics informed by technical expert meetings for public, non-government and private sector Increased collaboration with UNEP to foster additional support # Private sector and philanthropic funding opportunities # Proposals to financial institutions that stimulate technology flow					

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3 MONITORING, REPORTING & EVALUATION

3.1 RESULTS BASED MANAGEMENT

The monitoring and reporting of CTCN Technical Assistance to developing countries is carried out through a result-based framework that was approved by the 6th Advisory Board Meeting.[4]

The Programme of Work's monitoring and reporting consists of the following:

1. The CTCN's monitoring and evaluation system is the key internal management tool used by the CTCN to collect, analyse, and report on the performance data that forms the basis for monitoring and evaluation functions. It includes the Performance Measurement Framework of the CTCN which is aligned with reporting on the implementation of the Technology Framework under Article 10, paragraph 4, of the Paris Agreement under the UNFCCC. The CTCN's performance measurement framework presents specific budgeted activities, outputs, outcomes, and intended outcomes, and includes indicators from all CTCN service areas to be reported on by CTCN Secretariat and technical assistance implementers.

2. The key performance indicators for this Programme of Work measurement are identified in Section 3.3. This approach is aimed at achieving impact and scale of CTCN from 2023-2027. Intended outcomes are identified in Section 3.4.

3. This Programme of Work's theory of change (Section 3.5) is guided by the COP decisions that informed CTCN's mandate, the Technology Framework and CTCN Programme of Work. It provides a strategic overview of the CTCN activities and illustrates the main anticipated outputs, outcomes and impacts to be achieved by the CTCN over the life of this programme.

4. The indicative resource allocation and financial plan is presented in Section 4.

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[4] https://www.ctc-n.org/sites/www.ctc-n.org/files/resources/ctcn_me_system.pdf

3.2 CTCN INTERVENTIONS TO BUILD SCALE & IMPACT

Table 2: Interventions by Year

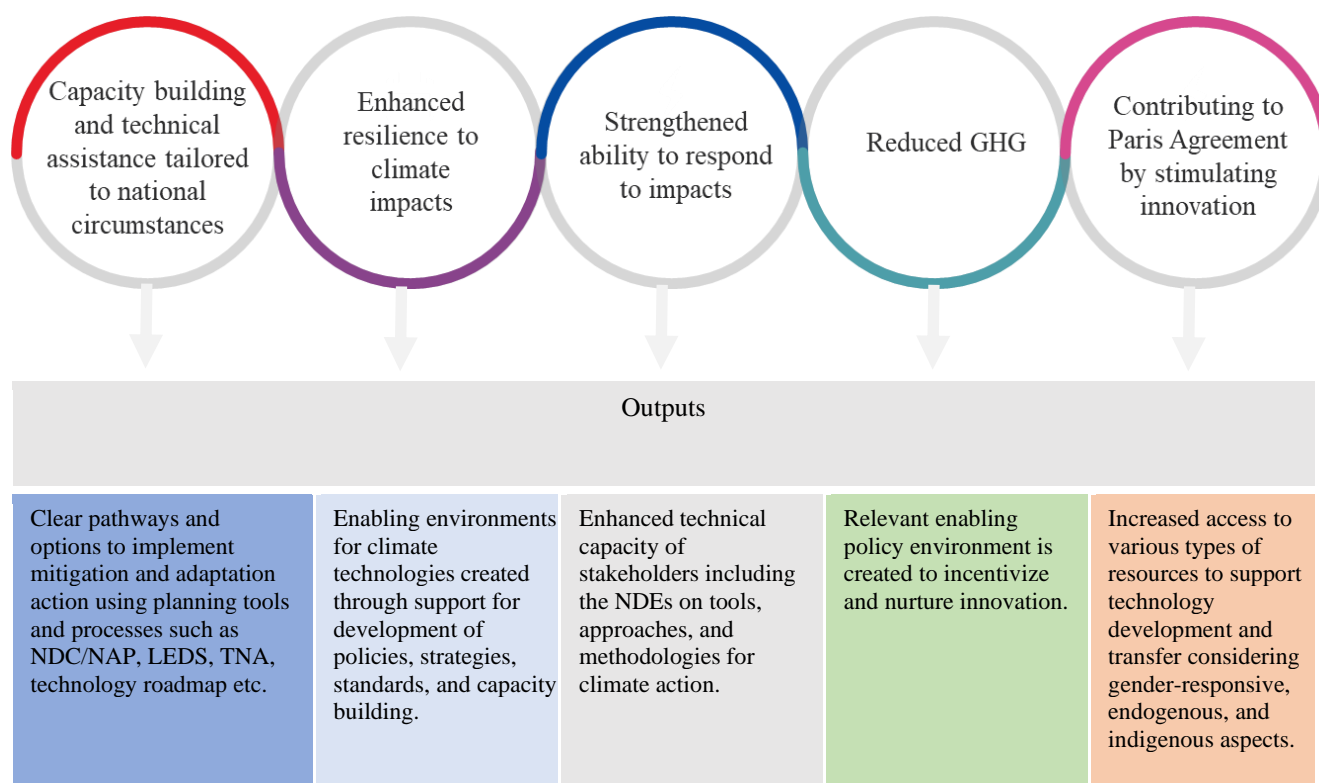| Technology Framework Theme	Activities	Indicators	Yr 1	Yr2	Yr5	Means of Verification
Innovation	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)	#Technical Assistance projects focusing on NSI and knowledge flows enhanced (for example, building capabilities of institutions and actors at a national level, creation of R&D policies, Incremental improvements in processes, inputs, or equipment to adapt products and processes to the local environment) # Policies, strategies, plans, legal frameworks, agreements, or regulations proposed, adopted, or implemented under TA # Living labs created with a focus on engaging youth to scale up innovation	10	12	60	- Programme evaluation reports to the Advisory Board/ COP - Web-statistics of the CTCN information portal
	1.2 Develop technological transition pathways and options for uptake of climate technologies	# TAs completed #TAs completed with digitalization and/or NSI elements # TAs that are followed up with GEF, GCF and/or Adaptation Fund proposals, or inform/modify policies, plans	30	35	150	
	1.3 Promote collaboration and partnerships in climate technology RD&D activities	# Network events # Participants in climate technology related events (gender disaggregated) # Business partnerships in fostering technology development	10	12 100	75 500	
	2.1. Prioritize climate technologies and facilitate the development, implementation of NDCs, including TNAs, roadmaps and pilot studies and alignment with NAPs	# Multi-country TA completed. Seek to increase multi-country opportunities for such projects # Programmes generated to assist in the preparation and implementation of the TNAs and NAP process # TA provided that include components related to enhanced and equitable digitalisation # TNA outcomes that are fully implemented #CTCN interventions aiding TNA/NAPs implementation # Events and trainings co-organized with entities of Financial Mechanism # Technology proposals developed through CTCN	3	6 5	30 25	- Programme evaluation - Aggregated results from thematic and national reviews - Stakeholder engagement feedback - Web-statistics of the CTCN information portal - Aggregated results from workshops (reflecting # attendees, gender and youth disaggregation, agendas, minutes)

Implementation	2.2 Identity and develop recommendations on approaches, tools and means, for the assessment of technologies at national level, including assessment of gender responsive, youth-led and endogenous technologies	Assessments and implementation of transformative technologies through joint and collaborative arrangements	2	5	<u>25</u>	
		# Information resources, national plans, contributing to national processes	127	200	<u>1000</u>	
Collaboration	3.1 Design policies, regulations and standards that create enabling environments for climate technologies and deliver capacity-building	# Knowledge resources developed	40	40	<u>200</u>	
		Sharing knowledge on existing technologies				
		#Stakeholders engaged				
		Measured increases in capacity (increased awareness)				
	3.2 Enhance the capacity of the NDEs to plan, monitor and achieve technological transformation	# Active partnerships established	35	40	<u>200</u>	
		# Collaborations in access of funds/ in mobilisation of funds				
		#TA supported by entities of the Financial Mechanism or other international financial entities				
		Dissemination of materials to stakeholders through electronic and print media				
		Increased visibility of NDEs and CTCN				
	1.3 Promote collaboration and partnerships in climate technology RD&D activities	# Participants engaged via webinars (gender and youth disaggregated)	200	300	<u>1000</u>	- Regular reports to the Advisory Boards and the COP - Aggregated results from workshops (reflecting # attendees, gender disaggregation, agendas, minutes) - Web-statistics of the CTCN information portal
		# Matchmaking events delivered				
		#NDE forums delivered, impacting developing countries				
		Increased Participation in meetings of NDEs at regional, global levels				
		# Specific action plans developed and implemented				
		#Regional training programmes for NDEs, gender disaggregated				
Enabling Environments	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)	#Technical Assistance projects completed with a focus on NSI and knowledge flows enhanced (for example, building capabilities of institutions and actors at a national level, creation of R&D policies, Incremental improvements in processes, inputs, or equipment to adapt products and processes to the local environment)	10	12	<u>60</u>	
		# Policies, strategies, plans, legal frameworks, agreements, or regulations proposed, adopted, or implemented under TA				
		# Living labs created with a focus on engaging youth to scale up innovation				
	4.1 Strengthen knowledge and engagement in an inclusive manner and facilitate collaboration among relevant	# Private sector collaborations				
		# Citizen(s) led, community-based initiatives				

	international organizations, the private sector, academia, and civil society	# University exchange programmes focussing on youth			
Support	5.1 Facilitate access to Financial Mechanism of the UNFCCC and mobilize various types of support including pro-bono and in-kind support	Increased generation of technical and financial support. # Capacity Building and Training Workshops, such as TNAs, TAPs, topics informed by technical expert meetings for public, non-government and private sector Increased collaboration with UNEP to foster additional support # Private sector and philanthropic funding opportunities # proposals to financial institutions that stimulate technology flow	3	6	30

3.3   IMPACT INDICATORS

The following impacts are directly experienced by developing counties as primary recipients of CTCN services:

Figure 6: Impacts resulting from the Programme of Work

Capacity building and technical assistance tailored to national circumstances	Enhanced resilience to climate impacts	Strengthened ability to respond to impacts	Reduced GHG	Contributing to Paris Agreement by stimulating innovation

Outputs

Clear pathways and options to implement mitigation and adaptation action using planning tools and processes such as NDC/NAP, LEDS, TNA, technology roadmap etc.	Enabling environments for climate technologies created through support for development of policies, strategies, standards, and capacity building.	Enhanced technical capacity of stakeholders including the NDEs on tools, approaches, and methodologies for climate action.	Relevant enabling policy environment is created to incentivize and nurture innovation.	Increased access to various types of resources to support technology development and transfer considering gender-responsive, endogenous, and indigenous aspects.

3.4   INTENDED OUTCOMES

The outcomes identified below aim to align this Programme of Work with the broad guidance and decisions of the COP and the CMA while also reflecting the priorities of NDEs as expressed in the regional consultations. They will be achieved by collaboration with a network of climate technology service providers and other stakeholders including youth and indigenous people.
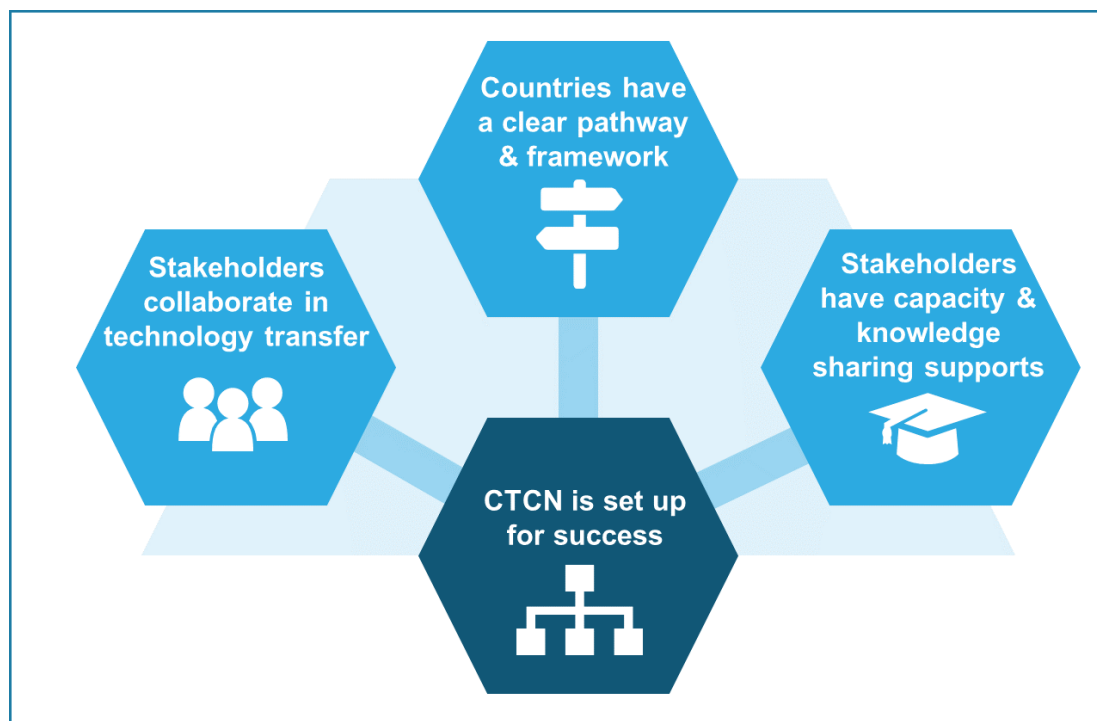
Figure 7: Intended outcomes

Stakeholders collaborate in technology transfer

Countries have a clear pathway & framework

Stakeholders have capacity & knowledge sharing supports

CTCN is set up for success

Table 3: Intended outcomes

	Intended Outcome	How (In responding to requests from Parties)	Alignment with the Technology Framework action areas				
			Innovation	Implementation	Collaboration	EE & CB	Support
1	Countries can accelerate innovation at different stages of the technology cycle through collaborative approaches.	Facilitate the development, transfer, and deployment of new and existing climate (mitigation and adaptation) technologies to developing country Parties. This will enable countries to effectively implement their development plans and NDCs.					
2	Countries have clear pathways and options to enhance inclusive, gender responsive, technology development and transfer, including endogenous and indigenous technologies	Facilitate stakeholder collaboration and aid their preparation and implementation of technology projects and strategies, enabling developing country Parties to have a clear pathway with identified support options to enhance technology development and transfer					
3	Countries have enhanced enabling environments, including policy and regulatory environments to develop, transfer and deploy climate technologies.	Build stakeholder capacity and enhance institutional and legal frameworks to develop, transfer and deploy climate technologies.					
4	Stakeholders are actively engaged and have strengthened capacity to implement climate action through collaboration	Through stakeholder collaboration, in promoting gender-responsive climate technology development and transfer, this programme identifies financial and technical resources to support the development, transfer and deployment of climate technologies and mobilizes private sector engagement.					
5	Countries have access to Technical Assistance and financial support to enhance development and transfer of gender responsive technologies						

3.5 THEORY OF CHANGE

Figure 8 under this 3rd Programme of Work frames the CTCN's approach through a theory of change model.

Figure 8: Outputs expressed through Theory of Change
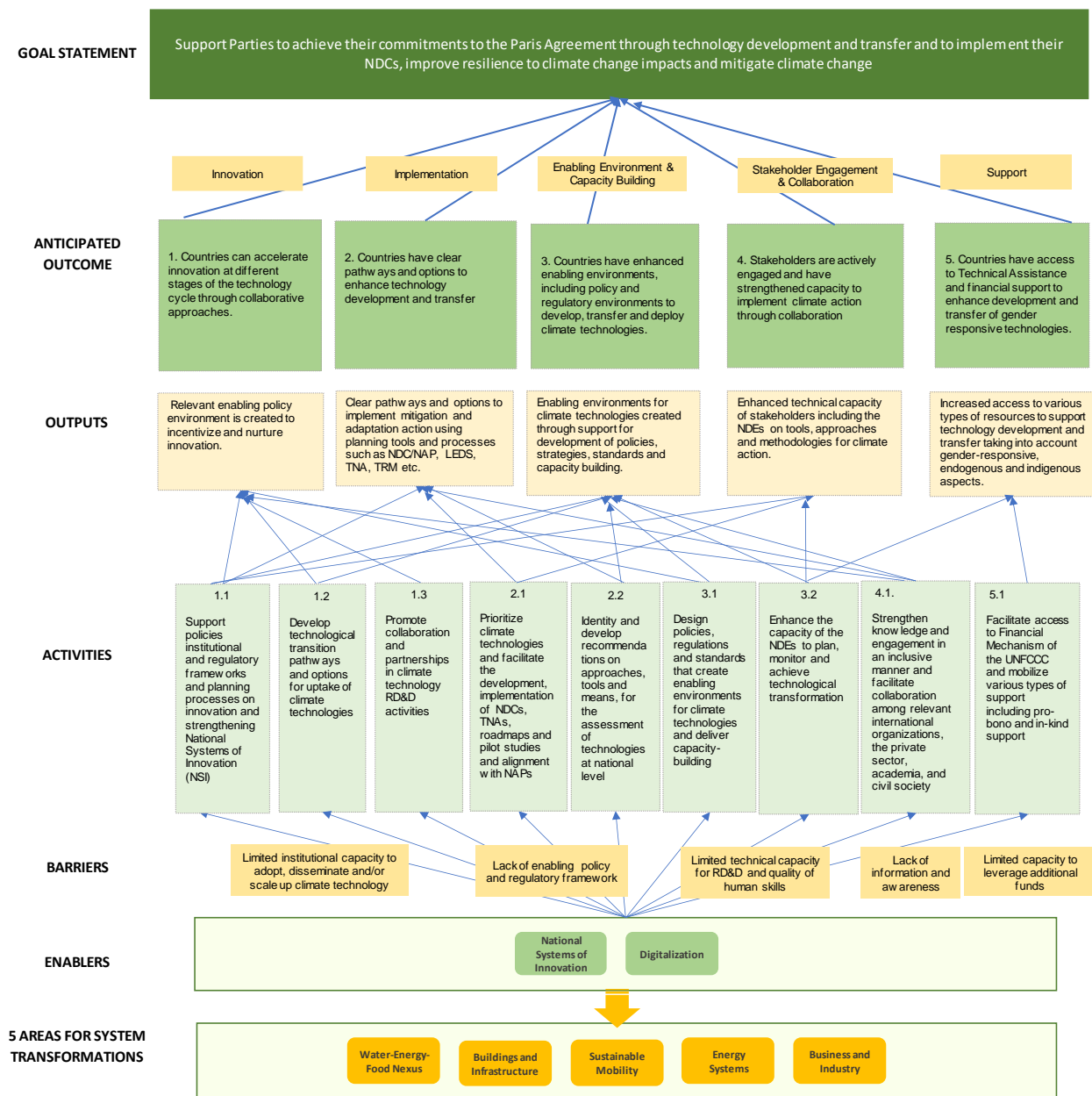
3.6 COST EFFECTIVENESS

- The independent reviews of the CTCN have highlighted its responsiveness to developing country needs.

- From a total of USD 95 million raised in the CTCN Trust Fund, the CTCN has been able to leverage USD1.24 billion dollars. Specific examples include:
    - Technical assistance results taken-up by the African Development bank leveraging $150m from the Green Climate Fund.
    - Technical assistance results taken-up by World Bank and incorporated in West African Coastal Areas Management Programme (WACA) leveraging $200 million.
    - A city level climate vulnerability assessment of people and ecosystems in six cities in Laos that leveraged 10$ million from the Green Climate Fund and $1.5 million from the Government of Laos.
    - Fourteen technical assistance requests supported through pro-bono (Republic of Korea, Japan) leveraging an equivalent of $2.18 million.

- Beneficiaries of CTCN services have shown a high level of satisfaction; they appreciate the CTCN's intense groundwork, and its reactive and tailored assistance some of which have attracted investment directly and indirectly.

- The CTCN is creating synergies with financial institutions, such as the Global Environment Facility (GEF) and the Green Climate Fund (GCF), and technical partners to avoid redundancy and increase the leverage of its activities. Working relationships with the Financial Mechanism (e.g., the Green Climate Fund (GCF) and the Global Environment Facility (GEF)) have been developed to identify opportunities for complementary support and allow for deeper and more sustained operations of the CTCN for the benefit of developing countries. The GCF has invited the CTCN to provide views on the enhancement and strengthening of the institutional relationship.

- At TEC 24 and CTCN 19 joint session[5] both bodies committed to 'continue to identify common issues and opportunities for joint work, for example on areas highlighted in the findings from existing joint work (e.g., on technology and NDCs). Another example was on endogenous capacities and technologies, where needs, gaps, and challenges, identified from feedback from NDEs, could inform the implementation support provided by the CTCN. The TEC and CTCN consider it important to continue improving the feedback mechanism between the two bodies: TEC policy work could, among other sources of information, be more systematically grounded in case studies and lessons learned from the operational activities of the CTCN and vice versa'.

- This Programme of Work will be flexible enough to take on board necessary addenda that may be deemed necessary by stakeholders including guidance that will come from the COP and Conference of Parties serving at the meeting (CMA) in the period; with the objective of adding value to the performance of the CTCN and enhancement of the work of the technology mechanism in supporting developing countries.

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[5]https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/tn_meetings/d38a60a3f0cb4c42aeb0566b5ff6cfba/5d3d6d15fd2a45b0881d3ab39482f3fc.pdf

3.7 GOVERNANCE

The CTCN's governance is provided by the UNFCCC Conference of the Parties by providing guidance and entering a hosting memorandum of understanding The CTCN reports to the Conference of the Parties, through the subsidiary bodies, on their respective activities and the performance of their respective functions

The Advisory Board of the CTCN determines its operational modalities and rules of procedure based on the functions as per decision 2/CP.17, annex VII, and decision 14/CP.18, annex II, regarding the constitution of the Advisory Board of the Climate Technology Centre and Network. The constitution of the Advisory Board was amended at COP 26.

UNEP, as host, provides institutional support and guidance, leadership and enhanced synergies between the programme and other initiatives across climate change within UNEP and other partners. Observers are allowed to the extent possible in the AB meetings.

The CTCN Advisory Board has 30 members meeting every six months for 2-3 days and guides CTCN, approves procedures and the annual operating plans including annual budgets, endorses financial statements, and monitors CTCN activities and results.

Additional details on the CTCN and its Advisory Board is available at https://www.ctc-n.org/about-ctcn/advisory-board

4 INDICATIVE RESOURCE ALLOCATION & FINANCIAL PLAN

Table 4: CTCN Budget (indicative 5-year cycle) by Technology Framework themes and CTCN Services (colour coded)

(in '000 USD) Outcomes and Activities			Yr 1	Yr 2	Yr 3	Yr 4	Yr5	SubTotal	Budget	Budget by Service
Innovation	Countries can accelerate innovation at different stages of the technology cycle through collaborative approaches.	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)	$2,500	$3,125	$3,906	$4,883	$6,104	$20,518	$27,615	$31,713
		1.2 Develop technological transition pathways and options for uptake of climate technologies	$1,000	$1,100	$1,210	$1,331	$1,597	$6,238		
		1.3 Promote collaboration and partnerships in climate technology RD&D activities	$150	$165	$182	$182	$182	$860		
Implementation	Countries have clear pathways and options to enhance technology development and transfer	2.1 Prioritize climate technologies and facilitate the development, implementation of NDCs, TNAs, roadmaps and pilot studies and alignment with NAPs	$650	$715	$787	$865	$1,081	$4,098	$4,098	
		2.2 Identify and develop recommendations on approaches, tools and means, for the assessment of technologies at national level	$1,000	$1,100	$1,221	$1,343	$1,477	$6,142	$6,142	$6,142
Collaboration and stakeholder engagement	Stakeholders are actively engaged and have strengthened capacity to implement climate action through collaboration	3.1 Design policies, regulations and standards that create enabling environments for climate technologies and deliver capacity-building	$100	$125	$156	$195	$244	$820	$1,641	
		3.2 Enhance the capacity of the NDEs to plan, monitor and achieve technological transformation	$100	$125	$156	$195	$244	$821		
		1.3 Promote collaboration and partnerships in climate technology RD&D activities								
Enabling environment and Capacity Building	Countries have enhanced enabling environments, including policy and regulatory environments to develop, transfer and deploy climate technologies.	1.1 Support policies institutional and regulatory frameworks and planning processes on innovation and strengthening National Systems of Innovation (NSI)							$5,960	
		4.1 Strengthen knowledge and engagement in an inclusive manner and facilitate collaboration among relevant international organizations, the private sector, academia, and civil society	$220	$275	$344	$430	$537	$1,806		
Support	Countries have access to Technical Assistance and financial support to enhance development and	5.1 Facilitate access to Financial Mechanism of the UNFCCC and mobilize various types of support including pro-bono and in-kind support	$490	$600	$1,000	$1,000	$1,064	$4,154		$7,600
Budget Total	Budget Total		$6,210	$7,330	$8,961	$10,424	$12,530	$45,455	$45,455	
CTCN Operational Costs	CTCN Operational Costs	Operations and Advisory Board (10%)	$620	$733	$896	$1,042	$1,253	$4,545	$4,545	
Total Outcome Budget	Total Outcome Budget		$6,830	$8,063	$9,857	$11,466	$13,783	$50,000	$50,000	

ANNEXES

ANNEX A. BACKGROUND

Limiting global warming to 1.5°C requires an ambitious level of large-scale deployment of many existing and new climate technologies far beyond current deployment trends. Accelerating the deployment, diffusion and transfer of climate technologies represents a key pillar to enhance low emission and climate-resilient development. The widespread diffusion of climate technology has implications for people, livelihoods, and ecosystems. Many countries are already taking steps to build resilient societies and economies, while managing future risks. Successful adoption of the climate technologies requires collaboration between governments and stakeholders, including civil society, across regions and sectors. Developing countries face economic, institutional, or technological barriers for the transfer and diffusion/application of climate technologies. Such barriers include a lack of capacity, access to finance and the absence of coordinated community of knowledge expertise and action.

The UN's Intergovernmental Panel on Climate Change (IPCC) Working Group I contribution to the Sixth Assessment Report, (Climate Change 2022: Mitigation of Climate Change) was released in April 2022. The report referenced how 'Policy packages tailored to national contexts and technological characteristics have been effective in supporting low-emission innovation and technology diffusion. Appropriately designed policies and governance have helped address distributional impacts and rebound effects. Innovation has provided opportunities to lower emissions and reduce emission growth and created social and environmental co-benefits (high confidence). Adoption of low-emission technologies lags in most developing countries, particularly least developed ones, due in part to weaker enabling conditions, including limited finance, technology development and transfer, and capacity'. [6]

We are at the tipping point on climate change. Technology will be a critical factor in reversing some of the worst impacts of climate change, as well as a critical enabler in achieving net-zero emissions goals. Mitigating climate change requires significant shifts in our systems and the setting and the achievement of mitigation targets, in terms of sustainable development, energy security and environmental protection. Accelerating the provision of technical assistance on technology related actions provide co-benefits in the form of improving energy access and sustainable development, providing a response to climate change to protect people, livelihoods and ecosystems. There is significant potential in developing countries to plan for and implement the most effective and efficient low emissions and climate resilient systems locally as part of their essential development and growth in all sectors; and the CTCN has been established to support developing countries at such crossroads, where choices of technology have to be made for meaningful achievement. The solutions that countries seek are necessary to break through identified obstacles in technology decision making and prioritization, create enabling environments, and mobilize the financing needed to meet climate change goals. In meeting these needs the CTCN has helped over 100 developing countries (108, August 2022) to progress their climate and sustainable development agendas.

The Governments ('Parties') to the Paris Agreement were required to communicate new or updated Nationally Determined Contributions (NDCs) from 2020. Many NDCs are insufficient to achieve the goals of the Paris Agreement and limit global warming to a maximum of 1.5°C or well below 2°C. The CTCN can contribute to providing support to the developing countries through its services namely technical assistance, capability development and knowledge sharing to enable parties enhance NDC actions. Since 2018 the CTCN Secretariat was reorganised along a geographical/regional focus in a decentralised delivery model. This regional approach supports the capacity-building and stakeholder engagement efforts of the CTCN in effectively mainstreaming climate technologies into national planning and enhanced access to financial resources The CTCN and TEC have collaborated on publications that focus on technology needs, technology challenges, linkages between policy and implementation and linkages between NDCs and national adaptation plans.[7] The CTCN, through this Programme of Work, will strengthen its ability to support countries in scaling up and reaching their NDC adaptation and mitigation targets through the deployment of climate technologies.

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[6] https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf
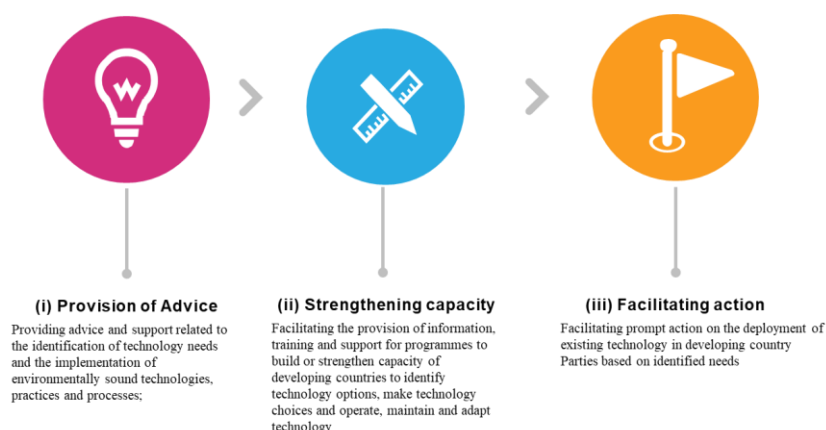[7] https://unfccc.int/ttclear/tec/techandndc.html

A.1   THE TECHNOLOGY MECHANISM

In 2010, the Conference of the Parties decided (Decision 1/CP.16[8]) to establish a Technology Mechanism, under the guidance of, and accountable to, the Conference of the Parties (COP), that included the establishment of a CTCN.[9] The Technology Executive Committee (TEC) and the CTCN form the Technology Mechanism. The TEC is the policy arm of the Technology Mechanism. It focuses on identifying policies that can accelerate the development and transfer of low-emission and climate resilient technologies. The CTCN is the implementation arm of the Technology Mechanism and promotes the accelerated transfer of environmentally sound technologies for low carbon and climate resilient development at the request of developing countries. The CTCN provides technology solutions, capacity building and advice on policy, legal and regulatory frameworks tailored to the needs of individual countries by harnessing the expertise of a global network of technology companies and institutions.

The establishment of the CTCN was aligned to an acknowledgement by Parties *that climate action should follow a country-driven, gender-responsive, participatory and fully transparent approach, taking into consideration vulnerable groups, communities and ecosystems, and should be based on and guided by the best available science and, as appropriate, traditional knowledge, knowledge of indigenous peoples and local knowledge systems, with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions, where appropriate*.

In 2010, following competitive selection process, the COP decided that the CTCN would be hosted by UNEP through a memorandum of understanding with the UNFCCC, with the support of a consortium of 11 organisations. In becoming operational the CTCN developed its mission: *to stimulate technology cooperation and to enhance the development and transfer of technologies and to assist developing country Parties at their request, consistent with their respective capabilities and national circumstances and priorities: to build or strengthen their capacity to identify technology needs, to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations to support action on mitigation and adaptation and enhance low emissions and climate-resilient development*.[10] Consistent with the COP decisions, the CTCN serves three main functions:

Figure 9: CTCN Mandate as reflected in Decision 1/CP.16, paragraph 123

(i) Provision of Advice
Providing advice and support related to the identification of technology needs and the implementation of environmentally sound technologies, practices and processes;

(ii) Strengthening capacity
Facilitating the provision of information, training and support for programmes to build or strengthen capacity of developing countries to identify technology options, make technology choices and operate, maintain and adapt technology

(iii) Facilitating action
Facilitating prompt action on the deployment of existing technology in developing country Parties based on identified needs

Decision 1/CP.16, paragraph 123 decided that the CTCN 'shall facilitate a network of national, regional, sectoral and international technology networks, organizations and initiatives with a view to engaging the participants of the Network effectively in the following functions:

(a) At the request of a developing country Party:

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[8] Decision 1/CP.16, para. 117. All relevant decisions are available at: https://unfccc.int/ttclear/negotiations/decisions.html
[9] All decisions relating to technology transfer are available at https://unfccc.int/ttclear/negotiations/decisions.html. CTCN founding documents available at https://www.ctc-n.org/about-ctcn/founding-documents
[10] Decision 1/CP.16, page 20, para. 123.

(i) Providing advice and support related to the identification of technology needs and the implementation of environmentally sound technologies, practices and processes;

(ii) Facilitating the provision of information, training and support for programmes to build or strengthen capacity of developing countries to identify technology options, make technology choices and operate, maintain and adapt technology;

(iii) Facilitating prompt action on the deployment of existing technology in developing country Parties based on identified needs;

(b) Stimulating and encouraging, through collaboration with the private sector, public institutions, academia and research institutions, the development and transfer of existing and emerging environmentally sound technologies, as well as opportunities for North–South, South–South and triangular technology cooperation;

(c) Facilitating a network of national, regional, sectoral and international technology centres, networks, organization and initiatives with a view to:

(i) Enhancing cooperation with national, regional and international technology centres and relevant national institutions;

(ii) Facilitating international partnerships among public and private stakeholders to accelerate the innovation and diffusion of environmentally sound technologies to developing country Parties;

(iii) Providing, at the request of a developing country Party, in-country technical assistance and training to support identified technology actions in developing country Parties;

(iv) Stimulating the establishment of twinning centre arrangements to promote North–South, South–South and triangular partnerships, with a view to encouraging cooperative research and development;

(v) Identifying, disseminating and assisting with developing analytical tools, policies and best practices for country-driven planning to support the dissemination of environmentally sound technologies;

(d) Performing other such activities as may be necessary to carry out its functions.

A.2 ENHANCED TECHNOLOGY MECHANISM COHERENCE

The Technology Mechanism's two bodies, the TEC and the CTCN, work together to enhance climate technology action. Their complementary functions support developing country efforts to address both policy and implementation aspects of climate technology development and transfer. They work to enrich coherence and synergy in the delivery of climate technology support and respond effectively to the needs of countries. The nature and extent of engagement has kept improving based on the dynamism of the demanded services and the stage of growth of the entities of the mechanism.

Joint activities and alignment of the CTCN's work with the TEC presents great opportunities to build on the TEC's analysis of policy and technical issues related to climate technology development and transfer and link this with the expertise of the Climate Technology Centre's Network.

Under the joint work programme, the CTCN and TEC will collaborate to catalyse and accelerate action to unlock transformational change. There are natural points of intersection between both arms of the Technology Mechanism in areas such as:

Providing support for innovation and collaborative RD&D facilitation

Recommending guidance and actions on climate technology policies and programmes

Developing decision-making tools/data, and technology identification and prioritization

Promoting studies targeting the feasibility and adaptation of technology options

Facilitating collaboration between climate technology stakeholders, in collaboration with technology experts and providers

Catalysing the development and use of climate technology road maps and action plans, sectoral roadmaps and NDC implementation strategies

Guiding policy and regulation to create enabling environments

Piloting & deployment of technologies (including private sector engagement)

De-risking, upscaling, and finance coordination

A collaborative approach to delivery will enhance the capacities of Parties to plan, monitor and achieve technological transformation in accordance with the purpose and goals of the Paris Agreement.[11]

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[11] Decision 1/CP.21, Annex, Article 10, para.3

A.3   TECHNOLOGY DEVELOPMENT AND TRANSFER UNDER THE UNFCCC AND THE PARIS AGREEMENT

Technology development and transfer as a mechanism for combating climate change, first featured within the UN convention on Climate Change in 1992, including referencing that *Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology.*[12]

Under decision 1/CP.16, para 123 Parties identified *the need for effective mechanisms, enhanced means, appropriate enabling environments and the removal of obstacles to the scaling up of the development and transfer of technology to developing country Parties* (1/CP.16, page 18, para. B). The Paris Agreement, negotiated and adopted in 2015 and entered into force in 2016. Article 10 highlights the importance of technology for the implementation of mitigation and adaptation actions under the Agreement. The facilitation and promotion of enhanced action on technology can help countries to achieve the purpose and goals of the Paris Agreement. Actions and activities should facilitate the implementation of collaborative technology development and transfer, build on the past and ongoing work of the Technology Mechanism, and consider the role of north-south, south–south, triangular and regional collaboration in facilitating implementation.

This is the CTCN's third Programme of Work that spans 5 years (2023-2027) and is established to enable the CTCN to fulfil its mandate as received from COP. It considers how the CTCN can best fulfil its mandate while also reflecting the additional responsibilities assigned to the CTCN by the COP, including decisions at COP21 (Paris) and COP22 (Marrakesh) resulting in the adoption of the Technology Framework at COP24 (Katowice). Such decisions called for enhanced co-operation and collaboration with the Financial Mechanism (Decision 13/CP.21, Paris, 2015) and engagement with the Green Climate Fund with respect to utilizing the Readiness and Preparatory Support Programme and the Project Preparation Facility (Decision 14/CP.22, Marrakech, 2016.) Furthermore, this Programme of Work considers actions aimed at operationalizing the Paris Agreement, (Decision 1/CP.21, para. 67) and its elaboration of the Technology Framework. Further information on decisions informing future activities of the CTCN are in Annex B.

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[12] https://unfccc.int/resource/docs/convkp/conveng.pdf

A.4 BUILDING ON PARIS AGREEMENT MANDATE

Since its establishment, several developments have positively impacted the CTCN, most notably the Paris Agreement. The Paris Agreement, adopted by 195 member countries at the conclusion of COP21 in Paris in 2015, brought about renewed enthusiasm towards a global co-operative climate change policy and action Within the context of the Paris Agreement the following initiatives/ instruments have informed this Programme of Work:

A.4.1 Article 10 of the Paris Agreement

Article 10 of the Paris Agreement establishes a Technology Framework (See Figure 10) to provide 'overarching guidance' to the Technology Mechanism.[13] The Paris Agreement Work Programme included two specific mandates: 1) to elaborate the Technology Framework and 2) to define the scope of and modalities for the periodic assessment of the Technology Framework.

A.4.2 The Technology Framework

The Parties to the Paris Agreement approved the Technology Framework in 2018, which defined five 'focused areas of action': innovation, implementation, enabling environment and capacity building, collaboration and stakeholder engagement and support.[14] The Technology Framework was established to provide overarching guidance to the work of the Technology Mechanism in promoting and facilitating enhanced action on technology development and transfer to support the implementation of the Paris Agreement.[15] The five key themes of the framework 'represent focused areas of action to be undertaken'.[16]

The CTCN has responded to the Technology Framework in the following ways (see Figure 10):

- Widening the CTCN's annual work programme to contribute to 'transformational changes' through an update of its existing services, including the country-driven technical assistance processes, to maximise impact.
- Developing of a Results Framework that elaborates a monitoring and evaluation structure that aligns CTCNs core mandate as outlined in the UNFCCC with the Technology Mechanism of the Paris Agreement.
- Incorporating lessons from reviews of the CTCN.
- Enhancing collaboration with the Technology Executive Committee and the Finance Mechanism of the UNFCCC.
- Placing more emphasis on the services of the CTCN in delivering targeted technical assistance linked to developing countries' priorities identified in their NDCs.

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[13] Includes long-term vision on technology development and transfer to support mitigation and adaptation actions 2. Parties' to strengthen cooperative action on technology development and transfer 3. Technology Mechanism to serve the Agreement 4. Establish a technology framework to provide overarching guidance to the work of the Technology Mechanism in supporting the implementation of the Agreement 5. Acceleration, encouragement and enabling innovation, in particular early stages of technology, and related support 6. Support for Article 10 implementation, and link to the global stocktake

[14] Decision 15/CMA.1

[15] The Technology Framework was negotiated over the course of 2016-2018 and finalised in 2018 at Katowice (COP 24) is structured into three sections: (1) purpose; (2) principles; and (3) key themes, under which the Technology Mechanism's 'actions and activities' are grouped. Technology innovation can be fostered through: (1) the active engagement of the private sector and closer collaboration between the public and private sector, (2) new collaborative approaches to climate technology RD&D, and (3) the creation and promotion of relevant enabling policy to incentivize and nurture a supportive environment for innovation

[16] Decision 15/CMA.1, Annex, para 4

Figure 10: Consideration of Technology Framework themes in context of functions assigned to CTCN (decision 1/CP.16, paragraph 123)
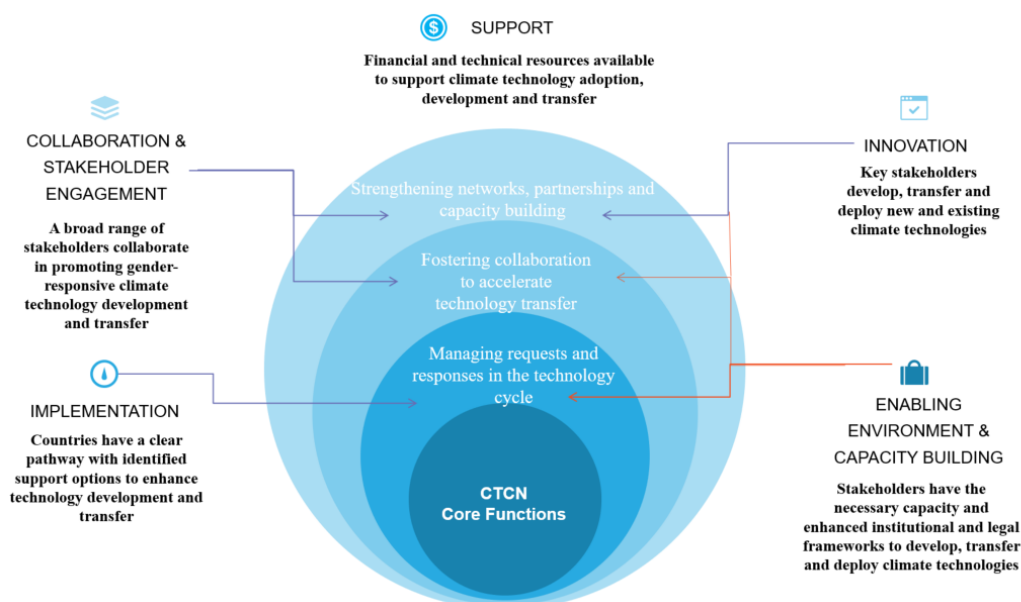
A.4.3   Global Stocktake and Periodic Assessment of the Technology Mechanism

The Paris Agreement also provides for a global stocktake which assesses the collective progress of all Parties towards achieving the goals of the agreement. [17] The periodic assessment focuses on the effectiveness of the Technology Mechanism and the adequacy of support provided to the Technology Mechanism in aiding the implementation of the Paris Agreement. The Assessment takes place every five years (starting in 2021), and its outcomes will serve as inputs to the global stocktake.[18]

A.4.5   Collaboration with the Financial Mechanism of the UNFCCC

The CTCN has, since 2016, established a partnership with the Adaptation Fund, the Global Environment Facility and the Green Climate Fund. Going forward such collaboration with the Finance Mechanism of the UNFCCC presents an opportunity for the CTCN to present an evidence-based approach and strengthen relationships and potential project co-creation on the transfer of environmentally sound technologies to developing countries.

The conclusions by the Chair of the SBI at its 56 Meeting[19], welcomed the increased collaboration between the Technology Executive Committee, the Climate Technology Centre and Network and the operating entities of the Financial Mechanism and encouraged them to strengthen their collaboration. Such collaboration is achieved through enhanced coordination between the National Designated Entities for technology development and transfer, the national designated authorities for the Green Climate Fund and the operational focal points for the Global Environment Facility to facilitate further coordination and explore potential cooperation in a country-driven manner.

The COP decisions called for enhanced co-operation and collaboration with the Financial Mechanism (Decision 13/CP.21, Paris, 2015) and engagement with the Green Climate Fund with respect to utilizing the Readiness and Preparatory Support Programme and the Project Preparation Facility. In delivering on this guidance, the CTCN established a liaison office in G- Tower in Songdo, Korea in 2022.

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[17] Capacity Building Achievement of the long-term goals of the Paris Agreement depends in large parts on the capacities of developing countries to implement their mitigation and adaptation actions and to participate in the climate regime, for example through reporting.
[18] Decision 16/CMA.1
[19] https://unfccc.int/sites/default/files/resource/TM_FM_i13a.pdf

A.5 LEARNING FROM INDEPENDENT REVIEWS

The first independent review of the CTCN, the *Independent review of the effective implementation of the CTCN*, mandated by the COP and commissioned by the UNFCCC Secretariat, took place in 2017. The 2017 review highlighted the CTCN's responsiveness to developing country needs.[20] Beneficiaries of CTCN services have shown a high level of satisfaction; they appreciate the CTCN's intense groundwork, and its reactive and tailored assistance. The CTCN fostered synergies with financial institutions, such as the Adaptation Fund, the Global Environment Facility (GEF) and the Green Climate Fund (GCF), and technical partners to avoid redundancy and increase the leverage of its activities.[21] Furthermore, the GCF invited the CTCN to provide views on the enhancement and strengthening of the institutional relationship.

As requested at COP 17, the UNFCCC commissioned an independent review of the effective implementation of the CTCN four years after its inception.[22] COP 23 considered the findings of the review, including any recommendations regarding enhancing the performance of the CTCN, and invited UNEP, with the support of the CTCN and in consultation with its Advisory Board, to respond to the relevant findings and recommendation form the Subsidiary Body for Implementation at its forty-eighth session, taking into account Parties' deliberations at COP 23.[23]

The DANIDA[24] 'Review of the Climate Technology Centre and Network (CTCN) Report' (2018)[25] described how a demand for CTCN technical assistance requests has been established that is beyond what it is able to fund and commented that yearly targets are not quite achieved. It concluded that *unless funds are increased significantly, it will be difficult for CTCN to function as the intended Global Mechanism, being effective in facilitating the transfer, uptake and scaling of climate technologies, and ensuring learning and impact*.

The COP further requested the UNFCCC secretariat to commission the second independent review of the CTCN and report on the findings of the review, including any recommendations regarding enhancing its performance for consideration by the COP in 2021.[26] The second independent review of the CTCN (2021) concluded that there has been continuous improvement in its programmes of work, with most of the recommendations from the first independent review and guidance from the COP having been taken into consideration in the second Programme of Work. It observed how resource mobilization remains a challenge, as the expected diversification of financial resources was not fully meeting initial targets despite a recent increase in funding from the GCF and the Adaptation Fund.

The development of this Programme of Work is partly informed by the recommendations and lessons learned from these independent reviews.

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[20] An evaluation case study of the Climate Technology Centre and Network was requested by the European Commission in 2015.[20] It was part of a larger evaluation effort by the UNEP Evaluation Office of two umbrella projects (12/3-P1 and 12/3-P2).

[21] Following consideration by Parties of the findings of the independent review, including recommendations regarding enhancing the performance of the CTCN,[21] the COP decided to renew the memorandum of understanding between the COP and the UNEP regarding the hosting of the CTCN for a further four-year period. Decision 14/CP.23, para. 5.

[22] Decision 2/CP.17, annex VII, paragraph 20

[23] Decision 14/CP.23, paragraph 7

[24] Denmark's Co-operation Division.

[25] https://www.ctc-n.org/sites/www.ctc-n.org/files/ctcn_danida_review_report_2018.pdf

[26] https://unfccc.int/documents/302658

A.6 Consultations informing the 3ʳᵈ Programme of Work

In drafting this Programme of Work, the CTCN sought views from its core stakeholders, both under and outside the Convention. The primary consultees are below:

A.6.1 Advisory Board
The CTCN Advisory Board led the development of this Programme of Work, meeting regularly as a Task Force, that included representation of the Chairs of the Technology Executive Committee.

A.6.2 Technology Executive Committee
In developing this Programme of Work, the CTCN established a task force that had representation of the Chair and Vice Chair of the TEC and the UNFCCC Secretariat. The intention was to build on the synergist elements and linkages between both bodies of the Technology Mechanism.

A.6.3 Non-Annex 1 NDEs and members of CTC Network
Nine regional workshops for NDEs and CTC Network members were separately organised throughout May 2022 to gain guidance from NDEs, and network organisations as depicted in Table 4 and in Figure 11. During this process, the CTCN engaged 138 participants from 60 countries. This open, inclusive, and participatory engagement process is aligned to the CTCN mandate in directly responding to identified needs in a country driven approach. Figure 6 presents a synthesis of focus areas identified during these regional workshops that ascertained the views on the most important topics and challenges facing developing countries as they seek to access environmentally sound technologies.

Table 5: Consultative workshops for NDEs and network members by region

Dates	Regional workshop
18 May	NDEs from Africa (FR)
19 May	NDEs from Africa (EN)
24 May	NDEs from Pacific
25 May	NDEs from Asia, NDEs from Latin America
26 May	NDEs from Caribbean
30 May	Network members from EU, US and Canada
31 May	Network members from Africa (EN)
1 June	Network members from Asia Pacific
7 June	Network members from LAC (ES)

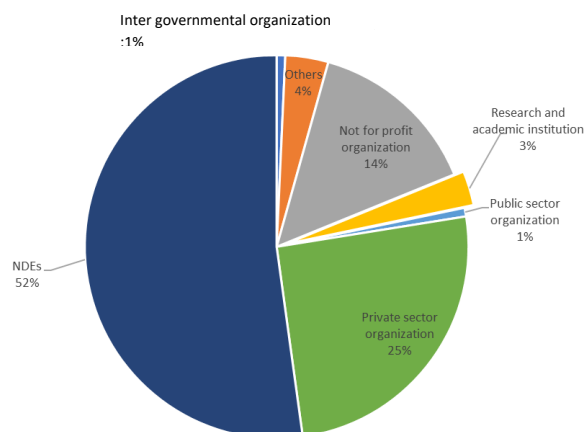**Figure 11: Breakdown of consultees by type of stakeholders**

Figure 12: Synthesis of workshops, most dominant themes (global)

Innovation, TNAs and NDC support (16)
Private sector mobilization, Incubators (11)
Food and Agriculture, Water (11)
Risk, vulnerability, digitalization (10)
Smart cities, mobility (9)
Cross cutting, endogenous (7)
Exchange of knowledge & experience (6)
Nature (5), Circular economy & resource efficiency (5)

A.6.4 Annex 1 NDEs

Meetings were convened with Annex 1 NDEs and donor governments throughout May and June 2022 to provide input into the development of this Programme of Work.

A.6.5 Selected Countries and major Groups

Meetings were also held with selected countries and major groups throughout May and June 2022. These included meetings with the Egyptian COP Presidency, European Union, Republic of Korea, United States, Africa Group of Negotiators, G77 and China, LDC Group and Alliance of Small Island States with the objective to seek guidance on the CTCN Programme of Work for the period 2023 to 2027.

A.6.6 Constituency groups

Several 1-1 consultations were held with constituency groups, including women and gender, indigenous peoples, youth, research, and independent NGOs to gain input into the Programme of Work. Additional information on the CTCN's gender policy and action plan is presented in Annex C.

A.6.7 Bodies under the Convention

The CTCN engaged with bodies under the Convention including financial entities such as the Green Climate Fund the Adaptation Fund and Standing Committee on Finance, as it prepared the contents of this Programme of Work.

Figure 13 presents a reflection on the diversity of the themes and challenges that were raised within the consultations outlined above.

Figure 13: Inputs from consultations from non-Annex 1 country NDEs, constituency groups and bodies under Convention
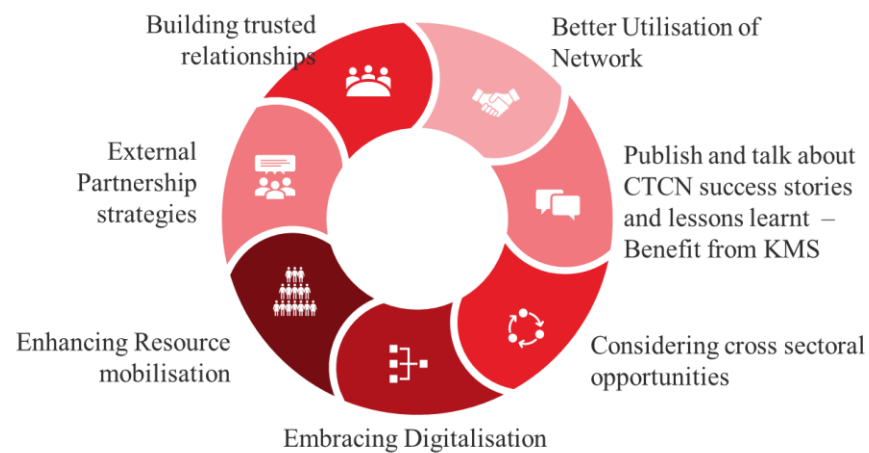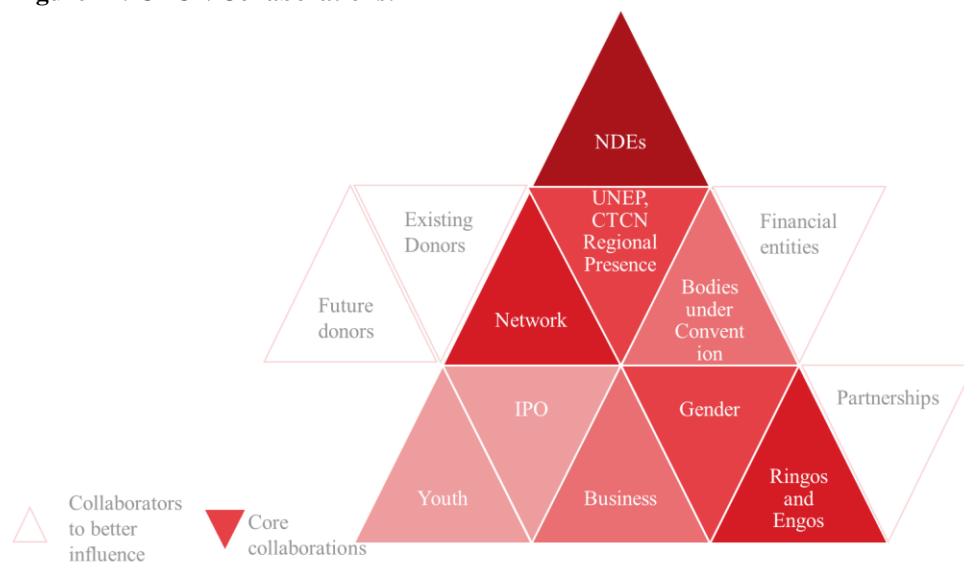

Figure 14 outlines the key collaborators while also highlighting where future influence should focus as the CTCN implements its Programme of Work 2023-2027.

Figure 14: CTCN Collaborations:

ANNEX B. COP DECISIONS & GUIDANCE INFORMING CTCN ACTIVITIES (POST 2015)

COP 26	a)	Decision 1/CP.26 Glasgow Climate Pact – section V on Finance, technology transfer and capacity-building for mitigation and adaptation
	b)	Decision 9/CP.26 Enhancing climate technology development and transfer through the Technology Mechanism
	c)	Decision 10/CP.26 Review of the constitution of the Advisory Board of the Climate Technology Centre and Network
	d)	Decision 11/CP.26 Second review of the Climate Technology Centre and Network
	e)	Decision 15/CMA.3 Enhancing climate technology development and transfer to support implementation of the Paris Agreement
	f)	Decision 16/CMA.3 Alignment between processes pertaining to the review of the Climate Technology Centre and Network and the periodic assessment referred to in paragraph 69 of decision 1/CP.21
	g)	Decision 17/CMA.3 First periodic assessment referred to in paragraph 69 of decision 1/CP.21
COP 25	a)	Decision 14/CP.25 Enhancing climate technology development and transfer through the Technology Mechanism
	b)	Decision 8/CMA.2 Enhancing climate technology development and transfer to support implementation of the Paris Agreement
COP 24	a)	Decision 12/CP.24 Review of the Climate Technology Centre and Network
	b)	Decision 13/CP.24 Enhancing climate technology development and transfer through the Technology Mechanism
	c)	Decision 14/CP.24 Linkages between the Technology Mechanism and the Financial Mechanism of the Convention
	d)	Decision 15/CMA.1 Technology framework under Article 10, paragraph 4, of the Paris Agreement
	e)	Decision 16/CMA.1 Scope of and modalities for the periodic assessment referred to in paragraph 69 of decision 1/CP.21
COP 23	a)	Decision 13/CP.23 Assessment of the technical examination process on mitigation and adaptation
	b)	Decision 14/CP.23 Review of the effective implementation of the Climate Technology Centre and Network
	c)	Decision 15/CP.23 Enhancing climate technology development and transfer through the Technology Mechanism
COP 22	d)	Decision 14/CP.22 Linkages between the Technology Mechanism and the Financial Mechanism of the Convention
	e)	Decision 15/CP.22 Enhancing climate technology development and transfer through the Technology Mechanism
COP 21	a)	Paris Agreement - Article 10 Paris Agreement
	b)	Decision 1/CP.21 Decision adopting the Paris Agreement
	c)	Decision 12/CP.21 Enhancing climate technology development and transfer through the Technology Mechanism
	d)	Decision 13/CP.21 Linkages between the Technology Mechanism and the Financial Mechanism of the Convention

A full list of all decisions of the Conference of the Parties (COP) and Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) and their Subsidiary Bodies related to technology development and transfer are at https://unfccc.int/ttclear/negotiations/decisions.html

ANNEX C. SUSTAINABILITY

- There are several critical factors which the Programme of Work needs to bring about to ensure long term sustainability of the CTCN interventions.

- To achieve success, the CTCN must continue to work collaboratively with stakeholders in the delivery of the Programme of Work and secure /ensure that the financial and technical parameters are in place.

- NDEs will be critical to sustain a vastly improved enabling environment which will facilitate the up scaling and broad-based engagement of private sector. This enabling environment is not only to support local actors, but it will also ensure that building the capacity of countries is fundamental to the Programme of Work. The support for capacity building and establishing the delivery mechanism of capacity building is also vital for securing long term sustainability. Many NDEs may require additional technical support to enable them to deliver on these services. This will aid in accelerating the deployment and transfer of technologies both in terms of hardware as well as soft knowledge/orgware.

- Engagement, through the network of organisations associated with the CTCN, will deliver on the objective of creating a pool of technical (regionally based) experts that will also facilitate the building and development of technical assistance experience, capacity building and testing of business models. It also supports an open and transparent absorption of environmentally sound and innovative technologies, enabling the recipient countries to make appropriate development choices based on its own needs and strategic approach. It is expected that after receiving appropriate technical and financial training, the demonstration technologies will be up scaled and/or replicated after project completion.

- Furthermore, the CTCN maps the national and regional planning approaches, laws, programs, financing mechanisms and institutional set-ups and make this mapping available to other countries through knowledge management, training workshops and on-line information exchange platforms. The increased participation and accountability of multiple stakeholders (e.g., the private sector, local communities, Non-Government Organizations) in actions, decision-making and monitoring will ensure sustainability. The interventions under this project will help build a case for sustained government investment.

ANNEX D. GENDER ANALYSIS

- The CTCN delivered a gender policy and action plan (2019-2022) that follows its mission (decision 2/CP17) to facilitate the preparation and implementation of technology projects and strategies taking into account gender considerations to support action on mitigation and adaptation.

- The CTCN host and the main Centre increasingly acknowledge the important linkages between gender and climate and have applied this across the full range of CTCN activities including technical assistance, capacity building, networking, communication knowledge sharing and monitoring and evaluation.

- The gender policy and action plan were developed in collaboration with international gender experts and the UNFCCC women and gender constituency. Its objectives include mainstreaming gender equality principles into CTCN operations, technical assistance, capacity building to ensure that specific needs and capabilities of both men and women with respect to climate technology are addressed. The intent is to reduce the gender gap in climate change- exacerbated social, economic, and environmental vulnerabilities.

- A key measurement is to increase women's and men's access to knowledge, training and income and achieve equal participation in technology related decision making, strengthening gender mainstreaming.

- A review of this policy will occur every 2 years.