

Technology cooperation for cross-border transfer of innovative climate technologies

Technical Session 2: Mechanisms to accelerate technology transfer, adoption and diffusion for climate resilient urban development

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International Conference on Innovation,
Technology Transfer and Cooperation for
Addressing Climate Change

APCTT/ESCAP - 6th Dec 2022

UN Climate Technology Centre and Network



The **CTCN** was established in 2013 as the **implementation arm** of the **UNFCCC Technology Mechanism**, hosted by UN Environment Programme (UNEP) with support of 11 Consortium partner institutions.

The UNFCCC created the Finance and Technology mechanisms to work together to provide support to developing countries to access the means of implementation.



CTCN Core Services



- Agriculture
- Carbon Fixation & Abatement
- Energy Efficiency
- Forestry
- Industry
- Renewable Energy
- Transport
- Waste Management

CTCN Services

TECHNICAL ASSISTANCE

KNOWLEDGE SHARING

COLLABORATION & NETWORKING



- Agriculture & Forestry
- Coastal Zones
- Early Warning & Environmental Assessment
- Human Health
- Infrastructure & Urban Planning
- Marine & Fisheries
- Water

Technology Framework of the Paris Agreement



Collaboration, Capacity Building & Knowledge Sharing Services



CTCN Regional Forum for NDEs



Webinars



Webinar. Bioenergy and Carbon Capture and Storage: delivering negative emissions with bioenergy, biofuels and waste-to-energy



Webinar. Conducting a gender-responsive Technology Needs Assessment



CTCN/ Ocean Accounts webinar: Introduction on Ocean Accounting - managing our impacts on the ocean



CTCN webinar: Women greening the energy sector



CTCN/UN Environment Webinar. Trade in Environmentally Sound Technologies: Implications for Developing Countries



CTCN/IRENA Webinar: Innovations for the power sector transformation, focus on blockchain technology

Capacity building event

Innovation Hubs
SME Clinics

South-South learning on low-emission transportation

Matchmaking event



Newsletter / Bulletin / Website



United Nations Climate Change
Paris Committee on Capacity-building



ADAPTATION FUND



CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Climate Change Adaptation Readiness and Capacity-Building Support Bulletin

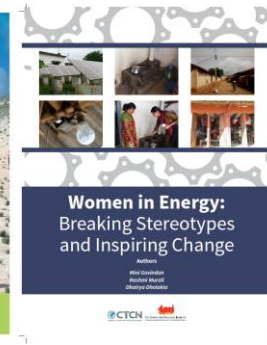
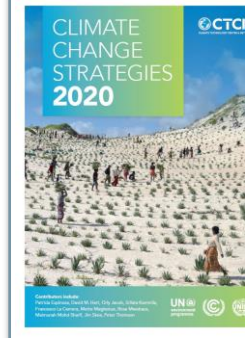
Issue Nr. 3 (1 April – 31 June 2020)

This bulletin provides news about the readiness and capacity-building support for climate change adaptation that is available to developing countries and provided by organizations under and outside the UN Convention and Paris Agreement.

News and Announcements

- The Adaptation Fund Direct Access brochure now available. Read more [here](#).
- Adaptation Fund announces FIRCA of Cote d'Ivoire as a second implementing entity.

Publications



Technical Assistance Overview

365

Requests for TA received to date

155

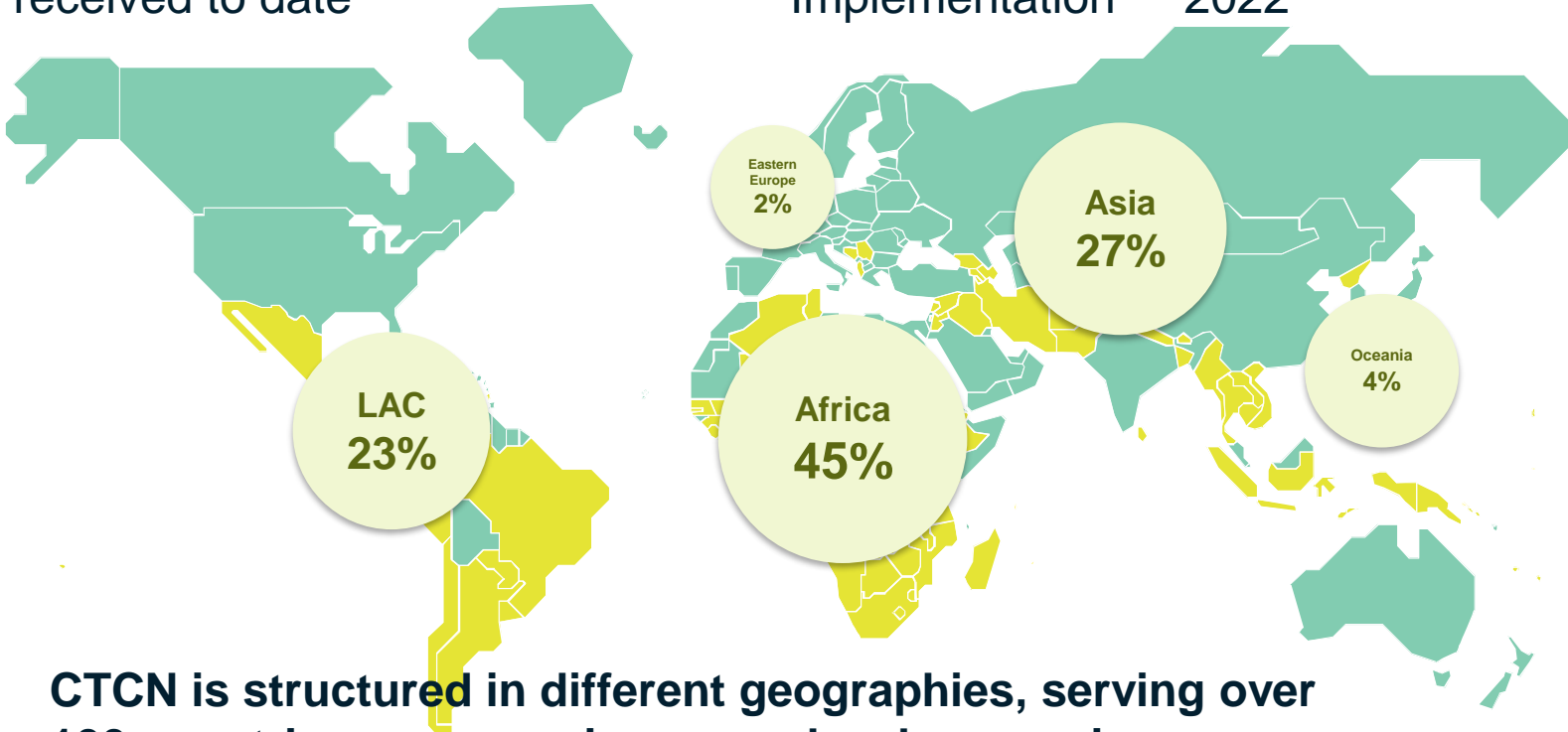
Completed

73

Under Implementation

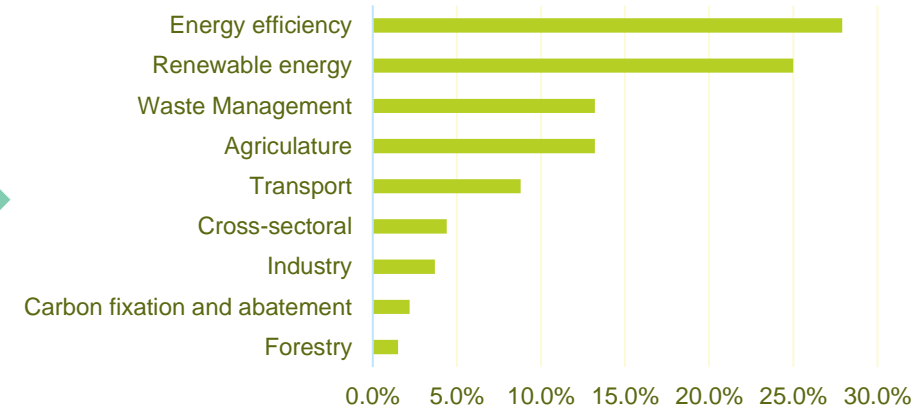
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New requests in 2022

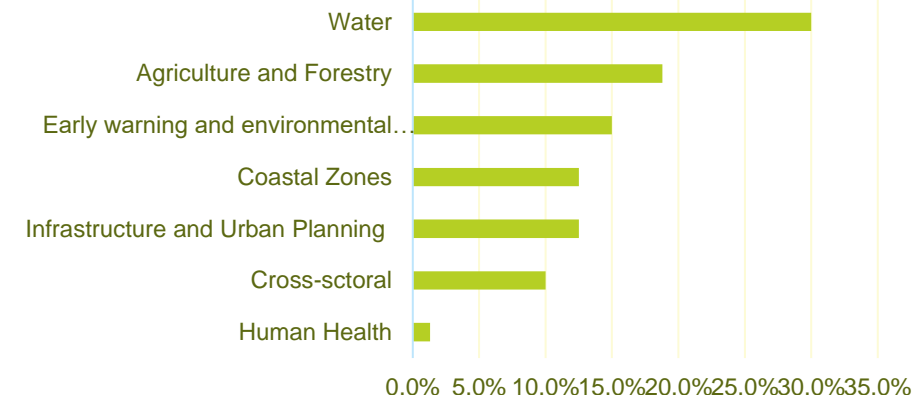


CTCN is structured in different geographies, serving over 100 countries, encouraging cross-border experience sharing and knowledge dissemination through its global/regional teams and network members

Sectoral distribution of requests mitigation



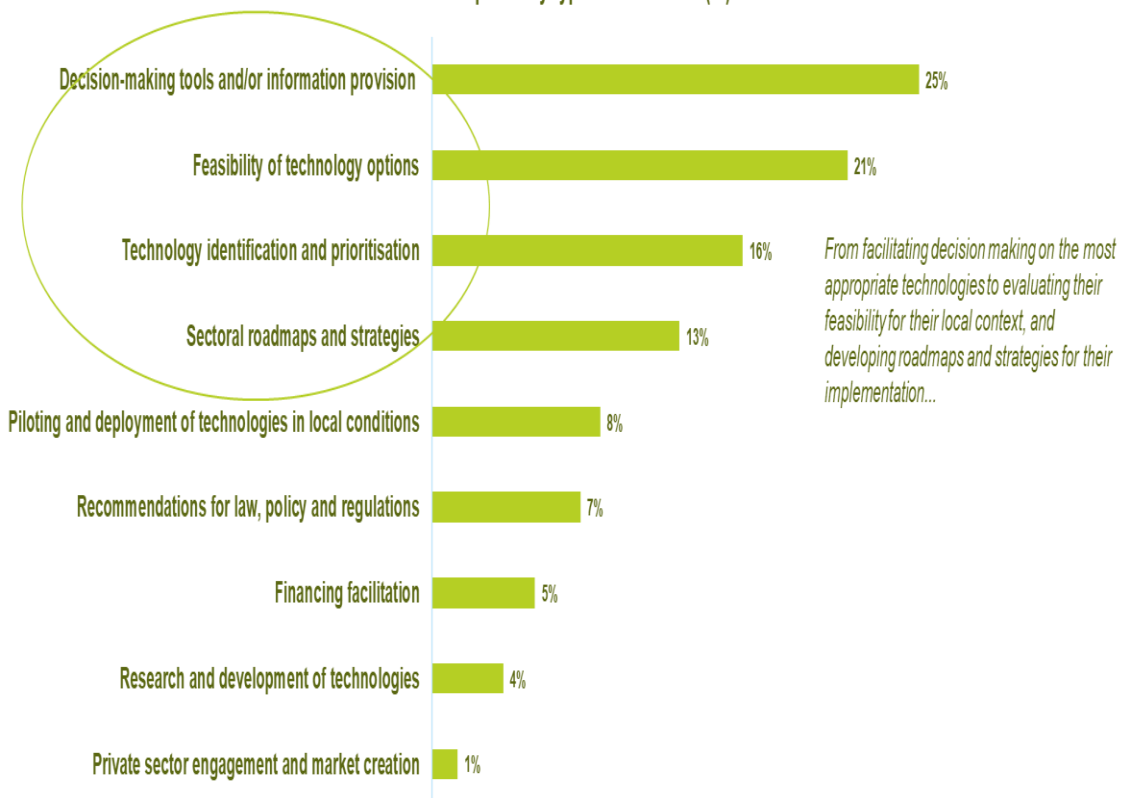
Sectoral distribution of requests adaptation



Technical Assistance Project types and trends

Technical Assistance Projects – Trends in Asia :

Distribution of TA requests by type of assistance (%)



Mitigation

- ❖ Low carbon transport (E-mobility)
- ❖ Energy Efficiency (building codes, Industries etc.)
- ❖ Renewable Energy (Power to Gas/ Green Hydrogen, community based solar and grid integration of RE)

Cross-cutting

- ❖ Waste Sector (Circular Economy approach)
- ❖ Agriculture (Methane avoidance and climate smart ag)
- ❖ Climate Smart city

Adaptation

- ❖ Integrated Water Management
- ❖ Climate information systems (agrometeorological information system, early warning system, Multi Hazard platform etc.)

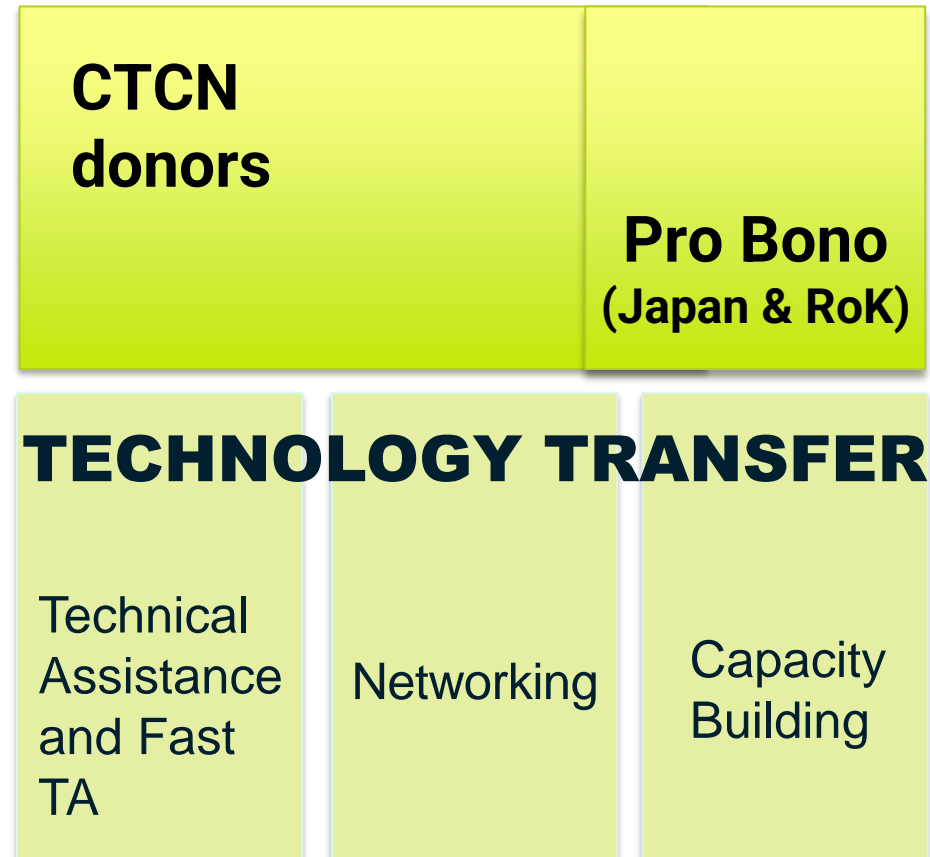
Capacity Building

CTCN support structure for technology cooperation – *Pro bono support*

- **CTCN donors** bring strategic TT themes to the discussion, and encourage the technology providers from their countries to support the developing countries as CTC Network members
- CTCN also works closely with the some of the technology leaders in the region, like Japan and Republic of Korea who provide additional support to developing countries (in particular in the AP region) through the CTCN TA **pro bono modality** to test emerging and innovative climate technologies.

Some of the examples are..

- ❑ Gravity Driven Membrane water technologies in Cambodia and Myanmar implemented by a Korean implementing partner: Gwanju Institute of Science and Technology (GIST).
- ❑ Green hydrogen-based energy in Mongolia supported by Japan, implemented by Japan's implementing partner: OECC



CTCN support structure for technology cooperation - *Partnership and Liaison Office (PALO)*



21 July 2022 : Official Launch in Songdo, RoK

Main objectives of PALO

- Enhance the **linkage between the Technology and the Financial Mechanisms** under the UNFCCC.
- Strengthen existing efforts on **innovation and collaborative research, development, and demonstration** through greater collaboration with various organizations working on climate change issues.



- ❖ Support capacity building activities for the NDEs in developing countries.
- ❖ Serve as a Centre of excellence on research, development, and demonstration on climate technologies.
- ❖ Promote North-South, South-South and triangular collaboration on research, development, and demonstration.



Ministry of Science and ICT



Incheon
Metropolitan City

CTCN support structure for technology cooperation

- *Engagement with GCF, GEF and AF*



GREEN
CLIMATE
FUND

- As reported by the GCF, the **CTCN remains the largest provider of GCF readiness support for technology**
- 30 GCF readiness proposals implemented by the CTCN have been approved to date, totaling almost 10 million USD. Many include GCF concept notes for further financing as a direct deliverable of the project, most of which are intended for GCF full scale implementation.
- At its 33rd Board meeting in July 2022, the GCF Board approved the reaccreditation and upgrade to **accreditation of UNEP to the medium-sized projects category** with project budgets of up **USD 250 million**, which will enable the CTCN to work within the COP guidance to utilise the PPF to implement larger scale projects.

AF Climate Innovation Accelerator (AFCIA) Programme



- **Objective** - Support for developing countries to test, evaluate, roll out and scale up innovative adaptation practices, products and technologies
- **Implementation** - 25 technical assistance projects (< USD 250K each)
- **Knowledge sharing & exchange of best practices** Programme webpage, UNEP & CTCN communication channels, etc.
- **Budget** - USD 5 million (AF) + USD 1 million (CTCN co-funding)
- **3rd and final call completed (final selection in Dec)**

→ *A new programme under discussion..*

Adaptation Fund Climate Innovation Accelerator (AFCIA)

ADAPTATION FUND CLIMATE INNOVATION ACCELERATOR

The Adaptation Fund has launched a new programme which will foster innovation of adaptation practices in vulnerable countries. UNEP-CTCN and UNDP are administering the grants.

Apply via UNEP-CTCN (Technical Assistance) Apply via UNDP (Grant Funding)

\$10M Funding by UNEP-CTCN & UNDP (USD)	100+ Countries eligible for funding	50+ Entities receiving funding	\$250,000 Maximum grant funding (USD)
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Access directly AFCIA via the link:
<https://www.ctc-n.org/afcia>

CTCN work on Technology cooperation for cross-border transfer of innovative climate technologies

***a few examples re urban climate
resilience***

Development of Kurunegala as a climate smart city (Adaptation and Mitigation)

- Supported in two TAs on establishing a “climate-smart” city framework design on climate adaptation and low carbon measures respectively
- **Tech. transfer on climate technologies facilitated through Korean network members with pro-bono support from Korea**
- **Integrated approach to Climate Smart City including**
 - ❑ Mitigation tech - Renewable energy, energy efficiency, sustainable transportation and waste management (IP- EcoNetwork)
 - ❑ Adaptation tech - Climate risk/vulnerability assessment with focus on water scarcity and heat stress (IP- Korean Environment Institute)
- **Key Outcomes and Impacts:**
 - ❑ **City development plans incorporated** Climate resilient aspects and low carbon **technologies**
 - ❑ Around 40,000 **people** direct beneficiaries (in city)
 - ❑ **Enhanced decision-making capacity of the policy makers and urban planners** on climate investments
 - ❑ Master Plan developed on Improvement of Solid Waste Management in North-western Province, Sri Lanka
 - ✓ Availed funding of **570,000 USD from KOICA** (Korean International Cooperation Agency)



City Climate Vulnerability Assessment and Identification of Ecosystem-based Adaptation Intervention (Laos)

- **Objective:** Supported climate vulnerability assessment and identification of ecosystem-based adaptation interventions in 6 cities of Laos.
- **Implementation Partner and Cost:** UNEP DHI partnership implemented the project in 2017 with cost USD 245,179.
- **Climate Technologies/ Approaches:** Vulnerability assessments and EBA responses for key sector (e.g Agriculture, Fisheries and aquaculture, Forestry, Water and Ecosystem/biodiversity, Infrastructure/human settlement and Early Warning/DRR)
- **Key Outcomes and Impacts:**
 - ❑ Contributed to design a GCF project proposal focusing on ecosystem-based adaptation in six cities in Laos.
 - ❑ Helped in **identifying technical options** for adaptation in urban areas, specifically technical skills, knowledge and equipment.
 - ❑ Identified overall costing of Ecosystem based Adaptation interventions that would be required to reducing climate risks.
 - ❑ **Leveraged USD 11.5 million (GCF grant + Gov Laos in-kind)**

Location: 15° 7'59.27"N X 105°48'49.83"E



GEF Challenge Programme - Piloting innovative financing for climate adaptation technologies in medium-sized cities (Laos/Moz/AntiguaB)



- **Context:** Building on the foundation work done in Laos to strengthen urban resilience, **the ability to mobilize financing to scale up adaptation technologies in medium size cities was the next step.** (The city of Kaysone Phomvihane City, Laos).
- **Objective:** provide technical assistance to urban planners to identify financial tools and mechanisms for financing adaptation technologies and build relationships between municipalities, the private sector, financial markets and infrastructure funds.
- **Expected outputs:**
 - Financing toolkit for medium-size cities (includes **tools to assess CCA technologies in urban planning and innovative financing**), and development of capacity of urban planners and other key stakeholders
 - Mapping and prioritization of high potential climate resilience financing solutions
 - Adaptation technology financing plan for Kaysone Phomvihane City
 - Prioritization of investment projects based on their adaptation impact, attractiveness to private sector and their financing options
 - Presentation of the **adaptation technology financing plan** to selected members of the financial community
- **Impacts:**
 - Strengthen climate resilience of Kaysone Phomvihane City
 - Will serve as a demonstration of CCA financing solutions for medium sizes cities with potential for scale up to other medium sized cities in Laos and other countries in the region

Nauru - Energy Water and Food Nexus

- Pre feasibility conducted for a 1 MW Ocean Thermal Energy Conversion (OTEC) plant for Nauru
- The pre-feasibility is **inspired from 'Kumejima model'- OTEC plant in Kuejima in Okinawa, Japan**, that integrates fresh water production with OTEC technology.
 - ✓ *Triple benefits: energy security, water security and food security (e.g. production of drinking water; aquaculture for coastal communities.)*
- A draft GCF Concept note with technical outcomes of the pre-feasibility is prepared.
- A total budget of USD 53.5 million is indicated:
 - ❑ To undertake the design and construction of the OTEC plant, coupled with fresh water production facility.
 - ❑ To improve livelihood resilience through resilient agriculture practices and aquaculture.



Figure 1. Location of the 5 sites in relation to Nauru.

South- south knowledge exchange program on Low Carbon Transport

- CTCN in partnership with TERI and GTC-K organized a 4-day workshop from 20th June to 23rd June 2022 in India New Delhi to conduct south-south knowledge exchange and facilitate regional collaboration among countries on low-carbon transportation, focusing on electric mobility.
- NDE Representatives from 11 countries from the Asia Pacific and African region participated, counting with the participation of APCTT
- Experts along the value chain industry from India and South Korea shared knowledge and experiences on low carbon transport.
- **Industry exposure** is also facilitated for the participants through a number of site visits to the following:
 - ❑ Rooftop power supply to the Metro Rail Corporation
 - ❑ Grid Connected energy storage system maintained by the power distribution utility
 - ❑ Solar PV based microgrids for municipality and EV charging
 - ❑ Centre of Excellence



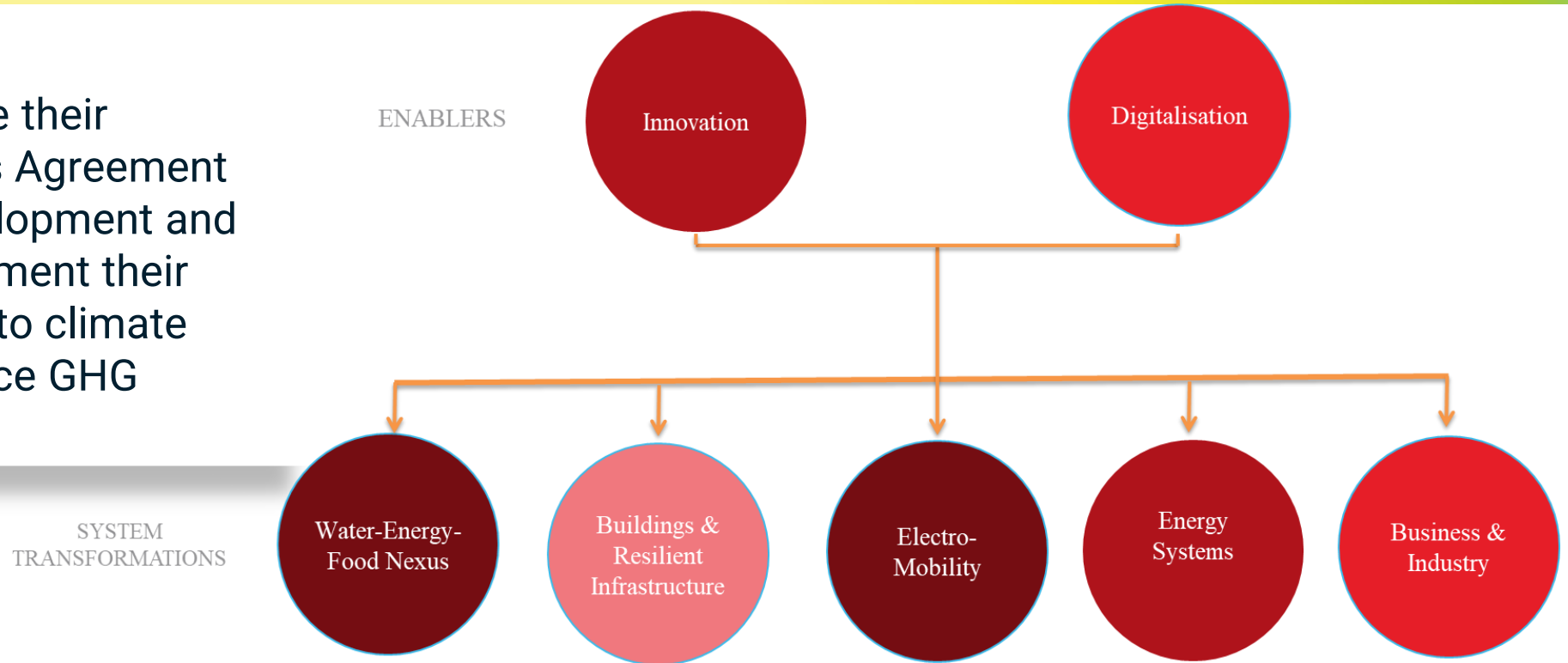
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Going forward...

CTCN PoW 2023-2027 – Enabling System Transformation

Objective

Support Parties to achieve their commitments to the Paris Agreement through Technology Development and Transfer in order to implement their NDCs, improve resilience to climate change impacts and reduce GHG emissions



- ***The CTCN will continue to operate in alignment with the five thematic areas of the Technology Framework established under the Paris Agreement, and through its 3 core service areas..***
- *Will remain a demand driven mechanism, working more closely with Financing Mechanism, with a focus on gender and youth, and continue to promote Technology cooperation for cross-border transfer of innovative climate technologies*



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