

Summary of the Forum for National Designated Entities (NDEs) of the Climate Technology Centre and Network (CTCN)

11 – 13 July 2016 Bangkok, Thailand

Introduction

The Climate technology Centre and Network (CTCN) is the operational arm of the UNFCCC Technology Mechanism mandated to promote the accelerated development and transfer of climate technologies for energy-efficient, low-carbon and climate-resilient development. The CTCN held its annual Forum for National Designated Entities (NDEs) from Asia – its third Forum in Asia – in Bangkok, Thailand on 11-13 July 2016. 50 participants joined the Forum, including 25 NDEs representatives from 16 countries, CTCN Consortium Partners and Network Members and representatives from the Asian Development Bank and the Green Climate Fund.

Thailand's Minister of Science and Technology, H.E. Dr. Pichet Durongkaveroj opened the event.

The aim of the Forum was to explore relevant technology opportunities for public and private sector actors in the region covering a broad range of sectors including agriculture, energy, industry and transport.

Across Asia, CTCN has responded to 38 climate technology transfer requests, quickly mobilizing experts from around the world to design and deliver a customized solution.



This report summarizes the key points and recommendations from the Forum. The agenda of the forum and the list of participants are annexed to this summary.





All presentations and pictures are available on the CTCN website: https://www.ctc-n.org/calendar/events/ctcn-regional-forum-asia-pictures-and-documents

For more information about the CTCN, please visit www.ctc-n.org



Key points from discussions

High-level opening

H.E. Dr. Pichet Durongkaveroj, Thailand's Minister of Science and Technology

- Climate change and climate technologies should be considered as a global public good.
 CTCN has a role to play in facilitating this, by disseminating knowledge on climate technologies
- Technology transfer needs to be streamlined
- Innovation is key. Start-ups have an important role to play in climate technologies

View the Minister's comments on technology transfer

Dr. Chen Ji, CTCN Advisor Board Member, China

- COP21 agreement is the cornerstone of global climate governance
- Technology article in Paris agreement, including reference to the need for greater efforts on RD&D
- Parties at COP21 strengthened the position of the Technology Mechanism and mandated it to support the implementation of the Paris Agreement The CTCN Advisory Board sees the Forum as an opportunity for CTCN to seek feedback from NDEs and for NDEs to interact and share experience

Edward Clarence-Smith, UNIDO Regional Director, Thailand

- Climate change is a complex issue demanding a coordinated global response
- Technology cooperation can create win-win outcomes
- The Paris agreement confirms CTCN mandate as one of the three Means of Implementation
- 30% of the requests for technical assistance received by CTCN come from Asia
- Asia first region in terms of Network activities
- UNIDO launched a programme to promote and encourage start-ups for clean technologies

Jukka Uosukainen, CTCN Director

- CTCN progress since last Asia Forum:
 - Nearly 130 requests received of which 38 from Asia
 - o First TA projects completed
 - 170+ Network Members
 - CTCN publications and other knowledge products on climate technologies available on the CTCN website
- CTCN can help countries turn technology ideas into implementable and bankable projects
- It is key to look at the real impacts of CTCN TA
- Strategic issue of what are the outcomes of the Paris agreement for CTCN
- How to engage more cities and businesses from developing countries



CTCN Overview

Introduction and Updates

- The CTCN is the operational arm of the UNFCCC the United Nations Framework Convention on Climate Change. Together with the Technology Executive Committee (TEC), the CTCN forms the Technology Mechanism of the UNFCCC, established by the 16th session of the Conference of Parties (COP) in Cancun in December 2010.
- The CTCN is mandated by the Parties of UNFCCC to promote accelerated, diversified and scaled-up transfer of climate technologies through three core functions: 1) Manage requests from developing countries and deliver responses; 2) Foster collaboration and access to information and knowledge to accelerate technology transfer; and 3) Strengthen networks, partnerships and capacity building for climate technology transfer.
- The CTCN is hosted by UNEP, in collaboration with UNIDO, and composed of a Consortium of 12 organizations from developed and developing countries. This gives the CTCN a strong presence worldwide and enables the Centre to deploy a wide range of expertise on climate technologies in the various sectors of mitigation and adaptation.
- Beside the Centre, the CTCN relies on a growing network of expert organizations working on climate technologies worldwide (research institutions, private companies, non-profit organizations, etc.). The list of network members can be found at the following link: https://www.ctc-n.org/network/network-members
- The CTCN provides free technical assistance to developing countries by acting as a
 matchmaker between country needs and the best available experts to support the
 identification, use, deployment and/or transfer of climate technologies for reducing
 greenhouse gas emissions or increasing resilience to the negative impacts of climate
 change.
- CTCN technical assistance is country-driven, as the assistance provided will be designed based on what countries requested to the CTCN. This approach aims to ensure that the support requested is needed and desired by the country stakeholders and beneficiaries, and that there are clear plans to use the products/results of the assistance.
- Any organization can formulate a request for assistance to the CTCN. However, to be accepted by the CTCN, all requests must be endorsed and submitted by NDEs of developing countries. The CTCN will then assess the eligibility of the request submitted based on criteria defined by its Advisory Board.
- So far, CTCN received 127 requests from 63 countries covering various adaptation, mitigation and cross-cutting sectors, including industrial energy efficiency, appliances, district heating and cooling, renewable energy supply side, waste management, postharvest management, coastal zone protection, ecosystem services, sustainable and smart agriculture, water management and irrigation, climate forecast and early warning, and financing mechanisms.
- CTCN build developing country capacities on climate technologies through Regional Fora, the Incubator Programme for Least Developed Countries, the Secondment Programme and a series of webinars on climate technologies. Besides, the CTCN facilitates the creation of an environment conducive to climate technology development and transfer through its CTCN technical assistance services. The majority of requests submitted by developing countries to the CTCN seek support to build their capacities in relation to climate technologies.
- The CTCN intends to focus its Incubator Programme on the analysis of NDCs and on the identification of technology interventions for NDC implementation, and to implement the Incubator in Small Island Developing States.



The Paris Outcome

Implications for the Technology Mechanism

- 2015 was the most ambitious year for sustainable development and climate technology in history
- Prior to Paris, the legacy of multilateral environment agreements (MEA) called for a top down approach, where legally binding targets were agreed
- **The Paris agreement**, with a 1.5 to 2 degrees target, and a call for post 2015-decarbonisation **allows for ambitious bottom up approaches**
- The Paris agreement includes a strong technology mandate:
 - o **Created the Technology Framework** to serve the Paris Agreement
 - Strengthened the Technology Mechanism and restated the importance of linkages with the GCF
 - Enhanced action prioritising technologies that are substantial, scalable and replicable pre-2020
 - Provided for a greater focus on research and development, and endogenous/native technologies

Implications for the Financial Mechanism

- Paris agreement confirmed GCF as operating entity of the financial mechanism of the UNFCCC
- Guidance from Paris on deploying financial resources through simplified procedures, enhanced readiness support for LDCs and SIDS
- NDCs provide legally binding opportunity that GCF can turn into bankable projects
- Linkages with Technology Mechanism
 - o **Board-level** discussions on fund-to-fund arrangements
 - o Enhanced complementarity at activity level
 - o Coherence at **national programming level**

Implications for Asia

- Asian countries still rely on fossil fuels: 2/3 global GHG emissions come from Asia
- **NDCs from Asia countries**: commit to either undertake absolute emission reductions from business-as-usual levels, reduce emission intensity of growth, increase the share of renewable energy in the energy mix, or improve forest cover
- Emission reductions targets are unspecific and hardly ambitious
- 64 Parties from Asia joined Paris agreement
- Transparency and accountability are key to the success of the Paris agreement

Key points from the discussion

- NDEs from developing countries need systematic institutional CB to perform role
- CTCN need a mandate to be able to provide institutional strengthening
- Countries from Asia interested in technology-specific CB workshops
- CTCN financing issue needs to be solved to enable it to respond to all requests
- CTCN TA can lead to fundable project proposals that can be implemented by development banks and GCF
- Countries are encouraged to report on CTCN TA in National Communications to make it visible under the Convention



RD&D

CTCN mandate on RD&D

- Paris Agreement requests CTCN to facilitate RD&D of new technologies along its three main service areas
- Under technical assistance, RD&D related activities are eligible for CTCN TA
- Under fostering collaboration and access to information and knowledge, CTCN could catalyse and develop information and knowledge on RD&D programmes
- Under Networks and partnerships, the CTCN should promote PPP and partnerships to advance technology RD&D

Key points from the discussion

- Need to focus on RD&D needs of developing countries
- Countries are at different stages of RD&D
- Focus on adapting to and localising proven technologies
- RD&D needs to be selective and focus on strategic technologies which have real demand in a country
- Especially SME sector needs support for RD&D for localization of technologies and deployment on a large scale
- CTCN can help engage the private sector to bring technologies to the market
- Need for collaborative RD&D between developed countries and institutions in developing countries to build local capacity
- Need for RD&D for adaptation technologies
- CTCN could fund experts to engage in joint research projects across countries
- Need for research infrastructure (laboratories for RD&D) in developing countries
- Need for capacity-building on RD&D

CTCN technical assistance

Engaging the private sector

Key points from the discussion

- Inviting private sector entities to showcase their technologies is a good opportunity to engage the private sector in technology transfer
- CTCN could help de-risking private sector investments through feasibility studies and piloting of innovative technologies, for example
- CTCN can help catalyse private sector participation by creating a common platform for showcasing good business models and sustainability models as well as risks management
- CTCN can provide information on developing countries' needs related to climate technologies
- It is important to reach out to SMEs and start-ups as they don't always have a good overview of developing countries' needs
- CTCN can help governments set conducive policies (i.e. feed-in tariffs etc.) for the private sector to thrive
- CTCN could promote South-South technology transfer by providing information on which technologies are working in other countries



Experiences from the region

- Thailand shared its experience on the support provided to Bhutan to help reducing GHG emissions from transport, a good case of South-South collaboration under the CTCN. It also presented the following technical assistance requests submitted to the CTCN:
 - ✓ Technology development for climate resilience and efficient use of resources in the agriculture sector
 - ✓ High resolution regional climate model projections
 - ✓ Strengthening Bangkok's Early Warning System to respond to climate induced flooding
 - ✓ Fostering green buildings
 - ✓ Benchmarking energy & GHGs intensity in the steel industry
 - ✓ Energy efficient street lighting technologies and financing models for Thai municipalities
- Iran presented lessons learned from its engagement in CTCN technical assistance process with requests on
 - ✓ Photovoltaic solar cell design & manufacturing;
 - ✓ Micro combined heat & power technology;
 - ✓ Desalination plant including power generation;
 - ✓ Energy savings in the steel industry
- Indonesia introduced the TA requests prioritised by CTCN on hydrodynamic modelling for flood reduction and climate resilient infrastructure development pathways in Jakarta, and on the development of anaerobic digester technology for Palm Oil Empty Fruit Bunch (EFB). On the latter, CTCN network member Obi Energy expressed interest in supporting Indonesia
- <u>Nepal</u> shared its experience on the CTCN Incubator Programme, which led to the
 development of two requests on short rotation forestry and sustainable use of biomass
 briquettes, both prioritised by the CTCN
- <u>Vietnam</u> introduced a technical assistance request on bio-waste minimization and valorization for low carbon production in rice sector
- **Lao** presented a request on <u>city climate vulnerability assessment</u> and identification of ecosystem-based adaptation intervention

Priorities of Asian countries on climate technologies

Priority sectors based on analysis of INDCs, TNAs, etc.

- Agriculture and Forestry
- Water, Coastal
- Early Warning System
- Energy Use and Energy Supply
- Transport
- Industry

Mitigation Technologies - Asian perspective

• Consortium Partner TERI gave an overview of energy efficient technologies in the industrial sector, explaining that improving energy efficiency is the cheapest, most effective and least politically controversial way of achieving sustainable energy consumption in the future



- The NDE from the Republic of Korea presented <u>innovative smart-grid</u> <u>technologies</u>. He introduced plans to transform Ulleung-Island into a zero-diesel and eco-friendly energy independent island
- The NDE from the Republic of Korea presented its <u>Policy Directions for Climate</u>
 <u>Technology</u> focusing on <u>carbon reduction and utilisation and on response to climate change</u>. Benefiting from a high R&D ratio to GDP, Korea is at the forefront of climate technology innovation
- The NDE from Thailand presented pathways countries can adopt to reduce GHG emissions from transport sector, which contributes to 17-20% of GHG emissions from a country

Adaptation Technologies - Asian perspective

- Consortium Partner AIT presented innovative approaches in <u>coastal early</u> <u>warning systems</u> under implementation in Maldives, Myanmar & Philippines
- Network Member ICIMOD gave an overview of <u>climate resilient agriculture</u> <u>technologies</u> in the Himalayan region (climate resilient crops, community-based early warning system, forest fire detection and monitoring system) focusing on endogenous technologies
- Network Member IRRI presented <u>technologies to increase rice resilience</u> focusing on the link between forecasting modelling and early warning systems and crop models
- Network Member FAO shared its perspectives on <u>addressing technology needs</u> embedded in NDCs for scaling-up adaptation action in the **Agriculture and Land-use** Sectors in Asia and the Pacific

Climate technologies in practice: field visits

Forum participants engaged in field visits organised in collaboration with the NDE from Thailand

Mitigation

The pilot case of ethanol production from cassava
The project is funded by the Global Environment Facility (GEF) and implemented by UNIDO
For more information please go to: http://aseancassava.info/project_overview.asp

Adaptation

The bamboo barriers at Samut Sakhon province: a solution against coastal erosion For more information please go to: http://www.dmcr.go.th/home.php

Linking the Technology and Financial Mechanisms

Asian Development Bank: how to develop bankable projects

Climate technology projects often face higher investment risks than other type of infrastructure projects

- ✓ Policy and regulatory risks
- ✓ Lack of economies of scale
- ✓ Weak local supply-chains and service industry Localisation and integration costs and risks
- ✓ High project identification & preparation costs
- ✓ Lack of local investment/financing expertise



CTCN technical assistance may help improve the bankability of a climate technology project by helping reduce specific investment risks, and to streamline and accelerate the overall project origination & structuring process.

Green Climate Fund: updates and priorities

- Value added: **country ownership** through NDAs
- \$10.3 billion in pledges, 97% in signed contributions
- 50/50 split between adaptation & mitigation, 50% of adaptation resources for SIDS, LDCs and African states
- **Readiness is a strategic priority of the Fund**: helps maximise effectiveness and reduce risks, good delivery;
- It is important to take **investment criteria** into account (country ownership at project concept stage)
- **Recent board decisions on the level of risk** that GCF is going to take and on simplified processes for micro (less than 10M) and small scale activities (less than 50M)
- GCF can support INDCs

Linkages between CTCN and GCF

- **Vision to Concept:** CTCN can support GCF in developing country programmes, through its technical assistance (TA) services, as long as the TA request submitted by the NDE has the endorsement of the GCF NDA.
- TA near completion: GCF can support follow up activities to the CTCN TA process aimed at developing full scale GCF funding proposals from the completed TA requests. These activities would be funded under the Project Preparation Facility.
- **CTCN support to Direct Access Entities**: GCF would offer CTCN services to Direct Access Entities so to strengthen their funding proposals. These activities would be funded under the Project Preparation Facility.
- Capacity Building of the Direct Access Entities: CTCN could be directly engaged by the GCF Secretariat in building capacity of Direct Access Entities on specific modules

Key points from the discussion

- CTCN can help countries analyse NDC and articulate it into sectoral technology interventions
- Governments could legally define the value of emission reductions and of adaptation within the country to attract investment
- NDEs are invited to liaise with GCF NDAs

Network Session

CTCN Climate Technology Network

- By joining the Network, Network Members can:
 - ✓ **Participate in bidding** to respond to countries' technical assistance requests
 - ✓ Promote their organization's tools and capacity building resources more broadly through the CTCN Knowledge Management System (KMS)
 - **✓** Participate in UNFCCC activities
 - ✓ Connect with other Network members and with developing countries to **expand partnership opportunities**



- ✓ **Increase global recognition** and showcase their organization's experience and success stories
- Network membership is cost-free and open to a variety of institutions with expertise on technologies for adaptation and mitigation to climate change
- Applicants don't need to go through the NDEs to apply to the network. More information on https://www.ctc-n.org/network

Case studies from Network Members

- International Center for Tropical Agriculture (CIAT) presented a case study on crop suitability modelling in Bhutan
- International Institute for Energy Conservation (IIEC) presented case studies on climate technology implementation in Asia and Pacific focusing on LEDs for street lighting
- <u>Full Advantage</u> presented case studies related to climate technologies focusing on **biomass power plants** in the Philippines
- Obi Energy presented case studies on combined waste-to-energy technologies in Indonesia
- <u>Green Technology Center</u> presented global technology cooperation case studies on solid waste management for the Philippines and Mongolian green educational buildings
- <u>LEAD</u> presented renewable energy solutions for Sialkot (Pakistani city)'s industrial sector

Key points from the discussion

- The CTCN Network was created by Parties
- Network Members can advise NDE on tech needs but this request needs to come from NDE to CTCN
- Requests go to the Network for implementation through open bidding but project proponents cannot be implementers

Open Q&A Session and concluding remarks

Key points from the discussion

- NDEs have capacity-building constraints. They needs enhanced skills, knowledge and technologies from other countries to implement their NDCs
- It is hoped that in Marrakech linkages between Technology and Capacity Building Mechanisms will be defined, so far discussions on the Capacity Building Mechanism did not cover technology
- NDEs can cooperate in groups at sub-regional level and report back to CTCN
- Technology customisation is key
- NDEs are interested in having more sectorial / technology specific events
- The Forum was an opportunity to get a better sense of what this region wants and what it is capable of



Annex 1 - Annotated Agenda

CTCN Regional Forum for National Designated Entities

Region: Asia Date: 11-13 July

Venue: United Nations Convention Center (UNCC) - Bangkok, Thailand

Objectives

- Develop and strengthen the regional network of National Designated Entities (NDEs), and their relationship with other technology stakeholders;
- Share experiences on:
 - o NDEs set-up and activities at national level
 - o Use of CTCN Technical Assistance, and other CTCN services;
- Discuss the Paris Outcome in relation to Technology Transfer and its implications for the Technology Mechanism
- Present the CTCN and its services; describe and clarify NDE roles and responsibilities, as well the processes to submit requests for technical assistance to the CTCN;
- Present technology-related thematic priorities and best practices on technical assistance from the region;
- Facilitate linkages between CTCN technical assistance and financial mechanisms, financiers and institutions that are relevant to Climate Technologies, with a view to identify matchmaking opportunities to secure funding for follow-up actions to CTCN requests or other climate technology activities.

Participants (approx. 50)

- NDEs from Asia
- CTCN Staff and Consortium partners
- Representatives from Financial Institutions
- Climate Technology Network members from within the region, and potential members
- Host Government representatives

Methodology

- Presentations, group exercises, and group discussions possibly supplemented by e-courses, and/or webinars in the following months.
- PLEASE NOTE that all discussions and presentations of the forum will be conducted in English



	DAY 1					
Time	Session	Speaker				
9:00- 10:00	Opening of Regional Forum for NDEs - Welcoming remarks from the Government of Thailand - Opening speech on behalf of CTCN Advisory Board - Welcoming remarks from UNIDO Regional Office - Welcoming remarks from CTCN Director Round of introductions for all participants	 H.E. Dr. Pichet Durongkaveroj, Minister of Science and Technology, Thailand Chen Ji, CTCN Advisory Board Jukka Uosukainen, CTCN Director Ned Clarence-Smith, UNIDO 				
10:00 - 10:30	Group and Tea/Coffee Break					
10:30 - 11:00	Session 1- CTCN Introduction and Updates - Presentation on CTCN's history, mission, structure - Updates and achievements under the 3 core services of the CTCN Discussion / Q&A	R. Garg, CTCN				
11:00 - 12:30	Session 2 - The Paris Outcome Panel discussion on: Implications for the Technology Mechanism Implications for the Financial Mechanism Implications for Asia Discussion / Q&A	J. Uosukainen, CTCN B. Parthan, GCF S. Sathitkunarat, NDE Thailand				
12:30 - 13:30	Lunch					
13:30 - 14:15	Session 3 - Countries' need related to RD&D Group discussion on RD&D	Chair: Chen Ji, CTCN AB				
14:15 - 14:45	Tea/Coffee Break					
14:45 - 15:45	Session 4 - CTCN technical assistance: engaging the private sector - Structured group discussion on countries' experience with private sector engagement, including through CTCN TA	E. Aalders, DNV GL				
15:45 - 17:15	Session 4 - CTCN technical assistance (cont.): experiences from the region - Presentation on NDEs' and CPs experience on requests development/generation/implementation Discussion / Q&A	NDEs from countries engaged in CTCN TA Thailand Iran Indonesia Nepal Vietnam Lao				
17:15 - 17:30	Wrap-up day 1	J. Uosukainen, CTCN				
18:00 - 19:30	Networking Cocktail					



	DAY 2	
Time	Session	Speaker
09:00 - 09:15	Session 5 – Priorities of Asian countries on climate technologies Priorities of Asian countries on climate technologies based on CTCN Request, TNAs, NDCs etc.	P. Mohanty, UNEP ROAP
09:15 - 10:30	Session 6 - Mitigation Technologies - Asian perspective Experts' presentation on specific themes (selected through analysis of INDCs and other national documents) - Industrial use of energy - Transport - Energy demand and supply Country representatives, Consortium Partners, Network Members and representative of financial institutions share experience/knowledge around selected themes	P. Pal, TERI (Industrial Use of Energy) Yoon-Eok Choi, Korea (key technology support areas) Youngseag Baeg, Korea (Smart Grid) Thailand NDE (transport)
10:30 - 11:00	Tea/Coffee Break	
11:00 - 12:00	Session 6 - Adaptation Technologies - Asian perspective Experts' presentation on specific themes (selected through analysis of INDCs and other national documents) - Agriculture	M. Hazarika, AIT N. K. Agrawal, ICIMOD P. Ficarelli, IRRI B. Damen, FAO
	- Coastal Early Warning	
	Country representatives, Consortium Partners, Network Members and representative of financial institutions share experience/knowledge around selected themes	
12:00 - 13:00	Lunch	
13:00 - 18:00	Field Trip/Side Visit at project sites Organised in collaboration with the NDE from Thailand Mitigation The pilot case of ethanol production from cassava The project is funded by the Global Environment Facility (GEF) and implemented by UNIDO For more information please go to: http://aseancassava.info/project_overview.asp Adaptation The bamboo barriers at Samut Sakhon province affected by coastal erosion For more information please go to: http://www.dmcr.go.th/home.php (Department of Marine and Coastal Resource)	
18:00 - 18:15	Wrap-up day 2	R. Garg, CTCN



	DAY 3					
Time	Session	Speaker				
9:00 - 10:15	Session 7 – Linking the Technolo Mechanisms - Asian Development Bank: how projects - Green Climate Fund: updates a - Cooperation with Multilateral Discussion / Q&A	X. Lu, ADB B. Parthan, GCF R. Garg, CTCN				
10:15 - 10:45	Tea / Coffee I	Break				
10:45 - 11:00	Session 8 - The Climate Technology Network - Presentation on the CTN Climate Technology Network		G. Ferrini, UNEP			
11:00 - 12:30	 Presentation from Network members on case studies related to climate technologies in the region / showcasing specific technologies 		CTCN Network Members			
12:30 - 13:30	Lunch					
13:30 - 14:30	Open Q&A Session - Participants have the opportunities to ask questions to CTCN Staff, Consortium Partners, Network Members, financial institution representatives on topics addressed during the Forum		R. Garg, CTCN All			
14:30- 14:45	Wrap-up and Closure		R. Garg, CTCN			
14:45 - 15:00	Tea/Coffee Break					
15:00 - 17:00	CTCN Help Desk CTCN staff answers questions related to TA process, NDE role, and any other questions participants may have	Bilateral meetings with Network and Capacity Building Manager & CTCN team Upon request. please write to Giulia Ferrini (Giulia.ferrini@unep.org to book a time slot)				



Annex 2 - List of Participants

Country /	Name	Type of Institution	Email
Organisation			
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