CTCN

CLIMATE TECHNOLOGY CENTRE & NETWORK

Climate Technology Centre & Network

PROGRESS REPORT

January 2014 – August 2015

Foreword

Climate change is a complex issue that demands a coordinated, global response, and 2015 is the year in which we have shown ourselves worthy of this challenge. The momentum that has been building among nations, through civil society and across the UN process is set to culminate in Paris with an agreement that reflects the urgent need for action. Governments, guided by clear scientific evidence, are set to agree to long-term commitments that will leverage all of the tools at our disposal and effectively address the full scope of our climate change concerns.

2015 also marks the second full year of operation of the Climate Technology Centre and Network (CTCN), in which we began delivering on the promise of the UNFCCC's Technology Mechanism and responding to countries' identified climate technology needs. These needs range from enhancing industrial competitiveness, to limiting vulnerabilities associated with fossil fuel dependence, and addressing the threat of climate change through adaptation. The CTCN contributes to this transition by assisting lower income countries onto low-carbon and climate resilient pathways.

The countries most affected by climate change are often also confronted with economic, institutional or technological barriers to action. Supporting their empowerment requires awareness of local conditions, and a strengthening of human and technological capacities to enable full transfer of climate technologies. The CTCN provides this tailored assistance along all stages of the technology cycle: from identifying technology needs, through assessing, selecting and piloting technological solutions, to their customization and widespread deployment. By responding to the requests of countries, the CTCN and its partners have the potential to be the link between identified technology needs and the private sector innovators and civil society experts designing solutions to respond to these challenges.

The CTCN recognizes the need to channel innovation and empower domestic actors, expanding access to knowledge and delivering action at the national and regional level. We are committed to working with countries to create national systems of innovation, remove barriers and create sound economic and regulatory frameworks that facilitate technology transfer.

We look forward to another year of building on this platform of success, and stand ready to assist additional countries in implementing the technology objectives agreed in Paris.

Dr. Matthew Kennedy
Chair of CTCN Advisory Board

Content

Foreword 1
Directors overview 3

Chapter 1 – about CTCN 5
CTCN Mission 6
Organizational structure 7
CTCN Advisory Board 8
National Designated Entities (NDEs) 9
CTCN National Designated Entities by Country 10
Consortium partners 16
CTCN Secondment Programme 17
Stakeholder and Private Sector Engagement with DNV GL 18
Gender and technology 19

Chapter 2 – CTCN technical assistance 21
Technical Assistance 22
Technical Assistance Form 23
Technical Assistance Requests by Country 24
Technical Assistance in Numbers 26
Afghanistan 28
Albania 29
Antigua and Barbuda 29
Bhutan 30
Bosnia and Herzegovina 30
Chile 31
Chile 31
Colombia 32
Colombia 33
Colombia 33
Côte d'Ivoire 34
Côte d'Ivoire 34
Dominican Republic 35
Dominican Republic 35
Guinea 36
Indonesia 36
Indonesia 37
Iran 37
Iran 38
Madagascar 38
Mali 39
Mali 39
Mauritius 40
Mongolia 40
Mozambique 41
Namibia 42
Pakistan 43
Senegal 43
Senegal 44
Uganda 44
Uruguay 45
Vietnam 45
Ghana, Kenya, Mauritius, Namibia 46
Guinea-Bissau, Mali, Niger 47

Chapter 3 – CTC Network 49
Climate Technology Network 50
Network partners 51
The Network in Numbers 52

Chapter 4 – Knowledge sharing & capacity building 55
CTCN Knowledge Portal: www.ctc-n.org 57
CTCN webinars 58
CTCN Knowledge Portal Statistics 59
Climate Knowledge Brokers 61
CTCN Regional Forums 62
CTCN Incubator Programme 65

Chapter 5 – CTCN Financial overview 67
CTCN Financial Overview 68

Directors overview

The Climate Technology Centre and Network (CTCN) facilitates the transfer of climate technologies by providing technical assistance, improving access to technology knowledge, and fostering collaboration among climate technology stakeholders. Through hard work and partnership, the CTCN is now actively producing results in each of our key service areas, as mandated by the Conference of Parties (COP) and guided by our Advisory Board.

On a weekly basis, we are receiving multiple requests from developing countries for technical assistance that spans numerous sectors across adaptation and mitigation goals, from agricultural resilience in Mali; early warning systems in the Dominican Republic; transportation efficiency in Bhutan; to waste management in Indonesia. We have received 50+ requests in total.

Upon receipt of these requests, the Centre quickly mobilizes technology experts from around the world to design and deliver a customized solution. Our Network includes over 100 organizations from academia, civil society, the private sector, and research institutions with expertise on the full spectrum of climate technology research, assessment, policy and implementation.

In October, the 135th National Designated Entity (NDE) was selected. NDEs are the national focal points that ensure country-level ownership and alignment of our activities with national climate change priorities.

Building on the findings of reports, including INDCs, NAPs, TNAs and TAPs, we work with NDEs to design solutions that transform plans into implementation while creating linkages with financing.
As part of the CTCN's effort to enhance knowledge of adaptation and mitigation technologies, the CTCN Knowledge Portal (http://www.ctc-n.org) hosts a series of technology webinars, provides access to information about each country's technical assistance, and offers a wealth of technology information from other organizations. The Centre also conducts Regional Forums to facilitate linkages between NDES, Consortium and Network members, and other key stakeholders, including public and private sector finance.

The CTCN is grateful for the funding provided on a voluntary, bilateral basis to support technology transfer. As we respond to a growing number of requests from developing countries, we will seek greater bilateral involvement as well as additional funding sources. At the same time, we will be actively linking with new technology experts for the Network to add capacity and ramp up our service offering to match the scale of the challenge at hand. We welcome your engagement and insights.

Jukka Uosukainen
Director, CTCN
October 2015

CHAPTER 1

ABOUT CTCN

"As an active member of CTCN, our government, with support from national organizations and institutions involved in the Network, is willing to help consolidate CTCN as the global technical platform for transfer and sharing. We aim to benefit from the CTCN knowledge base and at the same time, generate a catalytic affect that multiplies sharing of good adaptation and mitigation practices."

Dr Edgar E. Gutiérrez Espeleta, Minister of Environment and Energy

CTCN Mission

"Countries around the world are developing plans for adaptation to and mitigation of climate change. Sometimes, countries meet a challenge to moving forward in terms of planning, implementation, and/or financing. This is where CTCN can be called upon to create a bridge to essential knowledge, capacity, technical guidance, or financing so that countries can reach their climate and development objectives."

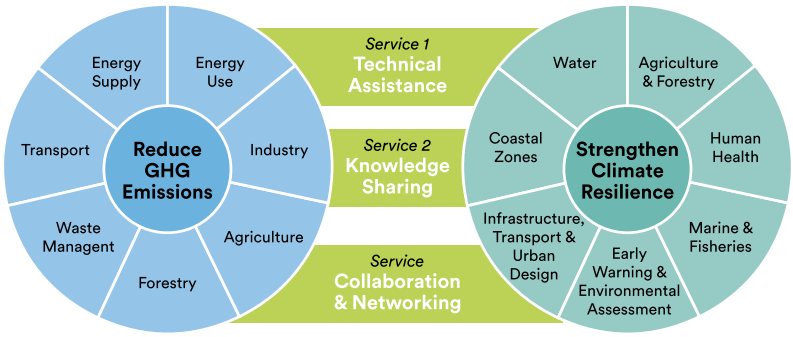
Jukka Uosukainen,
CTCN Director

Welcome to the Climate Technology Centre and Network

The Climate Technology Centre and Network (CTCN) promotes the accelerated development and transfer of climate technologies at the request of developing countries for energy-efficient, low-carbon and climate-resilient development.

The CTCN at your service

The CTC & Network fosters technology development and transfer across numerous adaptation and mitigation sectors via three core services:



1. Technical Assistance

The CTCN provides technical assistance in response to requests submitted by developing countries via their nationally-selected focal points, or National Designated Entities (NDEs). Upon receipt of such requests, the Centre quickly mobilizes its global Network of climate technology experts to design and deliver a customized solution tailored to local needs. CTCN technical assistance aims to create opportunities and remove barriers for financial investment from the UNFCCC Finance Mechanism institutions, Development Banks and/or the private sector.

2. Knowledge Sharing

The online Technology Portal serves as a gateway to the CTCN's technical assistance and capacity building services, where users can access technology webinars and practical information about climate technology solutions. The CTCN also provides tailored knowledge exchanges and training for one or multiple counties, upon request.

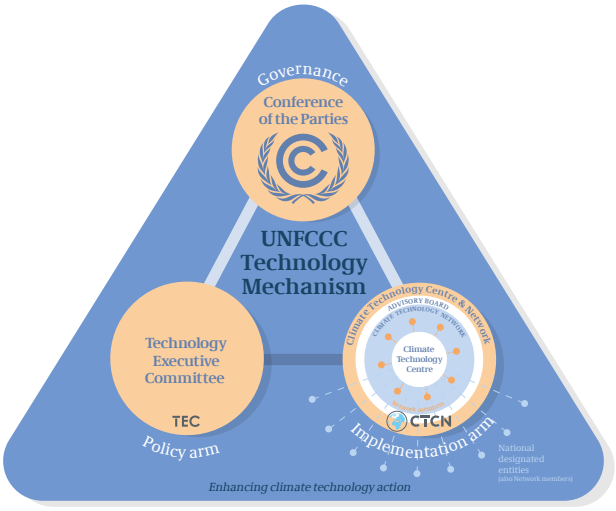
3. Collaboration & Networking

The CTCN links together a diverse global community of climate technology users, public and private sector decision-makers, technology providers and investors: we facilitate networking through annual regional CTCN Forums.

Organizational structure

CTCN Origins

Nations confirmed the importance of the development and transfer of climate technologies to developing countries in 2010, when the Conference of Parties to the United Nations Framework Convention on Climate Change (UNFCCC) established the Technology Mechanism. The Mechanism strives to achieve a common objective through two complementary bodies: the Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN).



Global collaboration to support countries' climate goals

The CTCN and the TEC work together to enhance climate technology transfer. The TEC builds the foundation for technology policy and develops recommendations to support country efforts; and the CTCN responds to country requests for planning and implementation assistance related to specific technologies.

The CTCN was launched in 2014 and is built on a global platform of climate technology expertise. CTCN operations are hosted by the United Nations Environmental Programme (UNEP) in collaboration with the United Nations Industrial Development Organization (UNIDO) and supported by 11 Consortium partner institutions with expertise in climate technologies. The Centre facilitates a Network of national, regional, sectoral and international technology centres, networks, organizations and private sector entities. In this way, the CTCN can call upon the regional and sectoral expertise across this structure and create the greatest efficiencies.

"The CTCN is a powerful example of a UNFCCC mechanism making a difference on the ground, facilitating the delivery of climate technology expertise in support of developing country objectives."

Christiana Figueres
UNFCC Executive Secretary

CTCN Advisory Board

CTCN Advisory Board

The Climate Technology Centre and Network is accountable to the UNFCCC Conference of Parties through the CTCN Advisory Board. The Advisory Board meets twice per year and provides direction on the CTCN's fulfilment of the Conference's guidance. The CTCN thanks those individuals who served on the CTCN Advisory Board during one or more of the Advisory Board meetings which took place in 2014 and 2015.

Non-Annex 1 Countries

Mr. Fred Machulu Onduri (Uganda, Africa) – *Chair, Vice-Chair*
Ms. Rose Mukankomeje (Rwanda, Africa)
Mr. Samuel Adeoye Adejuwon (Nigeria, Africa)
Mr. Elpidio Peria (Philippines, Asia-Pacific)
Mr. Mohammad Sadeghzadeh (Iran, Asia-Pacific)
Mr. Majid Al Suwaidi (United Arab Emirates, Asia-Pacific)
Mr. Pedro Borges(Venezuela, GRULAC)
Mr. Spencer Linus Thomas (Grenada, GRULAC)
Mr. Collin Guiste (Dominica, SIDS)
Mr. El Hadji Mbaye Diagne(Senegal, LDCs)
Ms. Marina Shvangiradze (Georgia, Eastern Europe)

Annex 1 Countries

Mr. David Henry (Canada)
Mr. Karsten Krause (European Union)
Mr. Matthew Kennedy (Ireland) – *Chair, Vice-Chair*
Mr. Kazuhiko Honbu (Japan)
Mr. Piotr Paschalis Jakubowicz (Poland)
Ms. Sara Aagesen Mũnoz (Spain)
Mr. Michael Rantil (Sweden)
Mr. Jürg Grütter (Switzerland)
Mr. David Reidmiller (United States of America)
Mr. Griffin Thompson (United States of America) – *Chair*

Non-government members

Technology Executive Committee: Mr. Gabriel Blanco and Mr. Kunihiko Shimada
Green Climate Fund Board: N/A
Adaptation Committee: Mr. Clifford Mahlung/ Mr. Klaus Radunsky
Standing Committee: Ms. Diann Black-Layne
CTCN: Mr. Jukka Uosukainen
Observer organization constituencies:
Business and Industry NGOs: Mr. Jean-Yves Caneill/ Ms. Tanya Morrison
Environmental NGOs: Ms. Elenita (Neth) Daño/ Mr. Niclas Hällström
Research and Independent NGOs: Ms. Heleen DeConinck/ Mr. Ahmed Abdel Latif

National Designated Entities (NDEs)

CTCN National Designated Entities

National Designated Entities (NDEs) serve as the national focal points for CTCN and are designated by each country that is a Party to the UNFCCC. NDEs play a catalytic role on climate technology issues in their country, including in leading efforts to ensure that requests submitted to the CTCN reflect national circumstances and priorities. They also coordinate CTCN assistance at the national level with other processes that address climate change. For example, they ensure the engagement of relevant ministries, provincial and local governments, the private sector, civil society and academia in the relevant process to guarantee feasibility of proposals developed at all levels.

NDEs facilitate CTCN support to their countries by:

- Serving as national focal point on CTCN activities
- Leading articulation and prioritization of requests from local and national stakeholders
- Providing oversight on technical assistance/capacity building collaboration between requesting institutions and the CTCN
- Participating in regional and global peer learning and collaborative projects conducted by the CTCN

"We feel that for our country, the CTCN is very important for the support it has given us in evaluation of technological needs. The training we have participated in is a unique opportunity and the teachings have now been replicated in the country. The government of Mozambique is thankful for the immense opportunity that CTCN is giving us."

Antonio J. R. Uaissone,
NDE of Mozambique

What is technology transfer?

Technology transfer encompasses the broad set of processes that cover the flows of knowledge, experience, and equipment for mitigating and adapting to climate change among different stakeholders. It comprises the process of learning to understand, utilize, and replicate the technology, including the capacity to choose it, adapt it to local conditions, and integrate it with indigenous technologies.

IPCC, Special Report on Methodological and Technological Issues in Technology Transfer, 2000

CTCN National Designated Entities by Country

Country	NDE	Institution
Afghanistan	Mr. Gulam Hassan Amiry, Head of Climate Change	National Environment Protection Agency of Afghanistan (NEPA)
Albania	Ms. Enkelejda Malaj, Director of the Directory of Integration and Projects	Focal Point of the Albanian Ministry of Environment, Forestry and Water Administration for the UNFCCC
Algeria	Mr. Noureddine Yassaa, Director; Mr. Samy Bouchaib, Head of Department	Centre de Développement des Energies Renouvelables (CDER)
Antigua and Barbuda	Ms. Diann Black-Layne, Ambassador of Climate Change Chief Environment Office	Environment Division, Ministry of Agriculture, Housing, Lands, and Environment
Argentina	Ms. Marcela Gregori	Ministry of Science, Technology and Productive Innovation
Armenia	Mr. Abovyan Mikael, President of the Board of Technology Transfer Association UJP	Technology Transfer Association Union of Juridical Persons
Australia	Mr. Byron Fay, Policy Officer	Sustainability and Climate Change Branch, Department of Foreign Affairs and Trade
Austria	Ms. Doerthe Kunellis	Division V/7 - Environmental Protection at Company Level and Technology, Federal Ministry of Agriculture, Forestry, Environment and Water Management
Azerbaijan	Mr. Gulmali Suleymanov, Director	Climate Change and Ozone Center within the Ministry of Ecology and Natural Resources
Bangladesh	Mr. Raisul Alam Mondal, Director General	Department of Environment, Ministry of Enviroment and Forests
Belarus	Mr. Andrey Pilipchuk, Head of Unit of regulation of impacts on the atmosphere and the ozone layer	Ministry of Natural Resources and Environmental Protection
Belize	Mr. Colin Young	Ministry of Energy, Science and Technology and Public Utilities
Benin	Mr. Aminou Raphiou Adissa, Direction Generale de la Gestion des Changements Climatiques	Ministere de l'Environnement Charge de la Gestion des Changements Climatiques, du Reboisement et de la Protection des Ressources Naturelles et Forestieres
Bhutan	Mr. Karma Tshering	National Environment Commission Secretariat
Bolivia (Plurinational State of)	Ms. María René Pinto Romero, Adviser to the Office of the Ministry of Environment and Water	Viceministry of Environment, Biodiversity, Climate Change and Management of Forest Development
Bosnia and Herzegovina	Mr. Goran Trbic, Professor Associate	Faculty of Sciences, University of Banja Luka
Botswana	Ms. Penny Lesolle, Researcher	Botswana Institute for Technology Research
Brazil	Mr. Márcio Rojas da Cruz, Coordinator for Global Climate Change	Coordination of Global Climate Change, Ministry of Science, Technology and Innovation
Burkina Faso	Mr. Ouedraogo Pamoussa, Représentant Directeur Général	Conservation de la Nature

Country	NDE	Institution
Burundi	Mr. Renilde Ndayishimiye, Director General, Mr. Alexis Nimubona	Burundi Geographic Institute
Cambodia	Mr. Sum Thy	Ministry of Environment
Canada	Director of the Energy and Environment Policy Division / (Alternate) Mr. Rob James, Manager, Energy and Environment Policy Division	Energy and Environment Policy Division, Natural Resources Canada
Central African Republic	Mr. Monssana Ozore	Ministre de l'Environnement, de l'Ecologie et du Développement Durable
Chad	Mr. Mahamat Hassane Idriss	Direction des Ressources en Eau et de la Météorologie, Centre et Réseau des Technologies Climatiques pour le compte du Tchad
Chile	Mr. James Robinson	National Council for Clean Production (Consejo Nacional de Producción Limpia)
China	Mr. Zhang Xiaohua, Director of International Cooperation Division of NCSC	National Center for Climate Change Strategy and International Cooperation (NCSC), National Development and Reform commission (NDRC)
Colombia	Mr. Rodrigo Suárez	Dirección de Cambio Climático del Ministerio de Ambiente y Desarrollo Sostenible
Congo	Mr. Joseph Badevokila, Mr. Andre Mfoukou Tsakala	Ministere du Tourisme et de l'Environnement, Ministere de la Recherche Scientifique et de l'Innovation
Comoros	Ms. Fatima Athoumani, Direction Général de l'Environnement et des Forêts	Ministère de la Production, de l'Environnement, de l'Energie, de l'Industrie et de l'Artisanat
Costa Rica	Ms. Ana Luisa Leiva Vega	Climate Change Directorate (DCC), Ministry of Environment and Energy
Côte d'Ivoire	Mr. Kumassi Philippe Kouadio	Sustainable Environment and Energy Development Consulting Center (SEED CC)
Cuba	Mr. Armando Rodríguez Batista, Director	Science, Technology and Innovation Department, Ministry of Science, Technology and Environment
Czech Republic	Mr. Pavel Zámyslický, Director	Energy and Climate Protection Department Ministry of the Environment
Denmark	Mr. Hans Jakob Eriksen, Special Advisor	International Department, Ministry of Energy, Utilities and Climate
Djibouti	Mr. Idriss Ismael Nour, Directeur Adjoint de l'Environnement	Direction de l'Aménagement du Territoire et de l'Environnement
Dominica	Mr. Lloyd Gabriel Pascal, Director Environmental Coordinating Unit	Environmental Coordinating Unit of the Ministry of Environment, Natural Resources, Physical Planning and Fisheries
Dominican Republic	Mr. Pedro García Brito, Director of Climate Change	Dirección de Cambio Climático, Ministerio de Medio Ambiente y Recursos Naturales
Ecuador	Mr. Angel Valverde Gallardo, Undersecretary	Undersecretariat of Climate Change, Ministry of Environment
Egypt	Mr. M. Hamdy Darrag, Director of Climate Change Technology Department	Egyptian Environmental Affairs Agency (EEAA)
El Salvador	Mr. Francisco Ernesto Durán García, Especialista de Cambio Climático	Ministro de Medio Ambiente y Recursos Naturales
Equatorial Guinea	Santiago Francisco Engonga Osono, Directeur Général de l'Environnement	Direction Générale de l'Environnement, Ministère de la Pêche et de l'Environnement
Eritrea	Mr. Seid Abdu Salih, Regional Climate Modelling Expert, National Climate Change Coordinator	Department of Environment, Ministry of Land, Water and Environment
Ethiopia	Ms. Yamelakesira Tamene Bekele, Director, Technology Transfer and Technical Support	Ministry of Environment and Forest
European Union	Mr. Karsten Krause	European Commission
Finland	Juho Korteniemi, Ministerial Advisor	Ministry of Employment and the Economy

Country	NDE	Institution
France	Mr. Jean-Pierre Tabet	Agence de l'environnement et de la maîtrise de l'énergie (ADEME)
Fiji	Mr. Mahendra Kumar	Climate Change Division, Ministry of Foreign Affairs and International Cooperation
Gabon	Mr. Nestor Mintsa	Agence Gabonaise de Normalisation (AGANOR)
Gambia (the)	Mr. Lamin Jatta, Head of Department	Gambia Technical Training Institute (GTTI)
Georgia	Mr. Grigol Lazriev, Head of the Climate Change Service	Ministry of Environment and Natural Resources Protection
Germany	Mr. Antonio Pflüger (Head of Division), Mr. Jens Mundhenke and Ms. Angelika Koppitz	Division Climate Change, International Environmental Policy of the Federal Ministry of Economics and Technology
Ghana	Mr. Joseph Amankwa Baffoe, Senior Programme Officer	Environmental Protection Agency
Guatemala	Mr. Juan Pablo Vidaune Avita (focal point), Ms. Ericka Leticia Lucero Del Aguila	Consejo Nacional de Ciencia y Tecnología (CONCYT), Ministerio de Ambiente y Recursos Nacionales (MARN)
Guinea	Mr. Mamady Kobélé Keita	Direction Nationale de l'Environnement
Guinea-Bissau	Mr. Carlos Sanca, General Director OAPI – Guinea Bissau	Organisation Africaine de la Propriété Intellectuelle (OAPI) - Guinea-Bissau
Guyana	Rear Admiral (rtd) Gary Best, Presidential Advisor on the Environment	Office of the Presidential Advisor on Environment (OPAE)
Honduras	Ms. María José Bonilla Molina, Eng.	National Climate Change Directorate - Energy, Natural Resources, Environment and Mining Secretariat of Honduras
Hungary	Mr. Akos Lukacs, Head of Department for Climate Policy	Ministry of National Development
India	Mr. Ravi Shanker Prasad, Joint Secretary	Ministry of Environment, Forests and Climate Change (Chairman organization)
Indonesia	Ms. Nur Masripatin, Director General	Directorate General of Climate Change, Ministry of Environment and Forestry
Iran (Islamic Republic of)	Mr. Seyed Ali Akramifar, Head	Iranian Presidential Center for Innovation and Technology Cooperation (CITC)
Iraq	Ms. Susan Sami Al-Banaa, Director	Climate Change Centre, Ministry of Environment
Ireland	Mr. Matthew Kennedy, EU Technology Negotiation, TEC Member and Member of the Advisory Board of the CTCN	Sustainable Energy Authority of Ireland
Israel	Ms. Ayelet Rosen, Head of Division of Multilateral Environmental Agreements	Ministry of Environmental Protection
Italy	Mr. Sergio La Motta	Italian National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA)
Jamaica	Mr. Albert Patrick Daley	Ministry of Water, Land, Environment and Climate Change
Japan	Mr. Takahiro Tajiri, Director, Global Environmental Affairs Office (METI), Mr. Michihiro Oi, Director, Office of International Strategy on Climate Change (MOE)	Ministry of Economy, Trade and Industry(METI), Ministry of the Environment(MOE)
Jordan	Mr. Hanadi Marie	Ministry of Environment
Kazakhstan	Mr. Kanat Baigarin, Ms. Aida Muratova	Nazarbayev University Research and Information Systems (NURIS)
Kenya	Mr. Charles Z. M. Moturi	Kenya Industrial Research and Development Institute (KIRDI)
Kiribati	Ms. Taare Uriam Aukitino, Deputy Secretary	Office of the President (Te Beretitenti)
Lao People's Democratic Republic	Mr. Syamphone Sengchandala, Director of Management and Coordination Division	Ministry of Natural Resources and Environment (MONRE), Department of Disaster Management and Climate Change

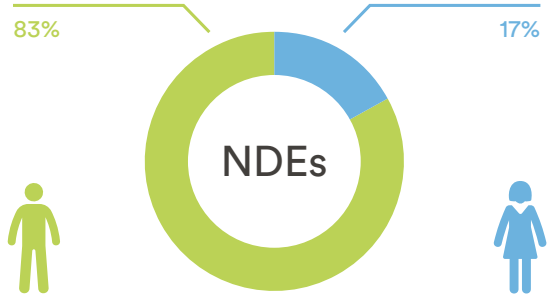
Country	NDE	Institution
Latvia	Ms. Erika Lagzdina, ead of Climate Change and Adaptation Policy Division, Climate and Environmental Policy Integration Department	Ministry of Environmental Protection and Regional Development of Republic of Latvia
Lebanon	Ms. Rola Sheikh, Head of Service of Environmental Technology	Ministry of Environment, Department of Air Quality, Service of Environmental Technology
Lesotho	Mr. Lefa Thamae, Director	Ministry of Communications, Science and Technology, Department of Science and Technology
Liberia	Ms. Ophelia I. Weeks, Dean	T.J.R. Faulkner College of Science and Technology, University of Liberia
Lithuania	Mr. Ricardas Valanciauskas, Head of Innovation Support and Technology Transfer Division	Agency for Science, Innovation and Technology (MITA)
Madagascar	Mr. Todisoa Manankasina, Mr. Germain Randriasandratana, Mr. Michel Omer Laivao	Ministère de l'Environnement, de l'Ecologie et des Forêts
Malawi	Mr Lyson John Kampira, Chief Research Services Officer	National Commission for Science and Technology
Malaysia	Mr. Gary William Theseira	Environment and Climate Change Division, Ministry of Natural Resources and Environment
Maldives	Mr. Amjad Abdulla, Director General	Climate Change Department, Ministry of Environment and Energy
Mali	Mr. Birama Diarra, Directeur des Applications Météorologiques et climatologiques	L'Agence Nationale de la Météorologie (MALI-METEO)
Marshall Islands	Mr. Rina Keju, Director	Office of Environmental Policy and Planning coordination, Ministry of Foreign Affairs
Mauritius	Ms. Sin Lan Ng Yun Wing, Director, Department of Environment	Ministry of Environment and Sustainable Development
Mexico	Mr. Francisco Barnes Regueiro, General Director, National Institute for Ecology and Climate Change	National Institute for Ecology and Climate Change
Mongolia	Mr.Gerelt-Od Tsogtbaatar, Head of CDM National Bureau	Climate Change Coordination Office, Ministry of Environment and Green Development of Mongolia
Montenegro	Ms. Biljana Kilibarda, Adviser in Directorate for Environment and Climate Change	Ministry of Sustainable Development and Tourism
Mozambique	Mr. Antonio Jorge Raul Uaissone	Ministry for Science and Technology
Namibia	Mr. Jonathan Mutau	Department of Environmental Affairs
Nauru	Mr. Elkoga Gadabu, A/Secretary CIE Mr. Reagan Moses	Ministry of Commerce, Industry and Environment
Nepal	Mr. Ram Hari Pantha, Under-Secretary and Head-Climate Change Section	Ministry of Science, Technology and Environment
Niger	Mr. Kamayé Maâzou, Secrétaire Exécutif du CNEDD	Cabinet du Premier Ministre
Palau	Mr. David Idip, Chief of Staff	Palau Automated Land and Resource Information System Office (PALARIS), Ministry of Finance
Pakistan	Mr. Muhammad Irfan Tariq, Director General (Environment)	Ministry of Climate Change
Panama	Mr. Emilio Sempris, Subadministrator General	Autoridad Nacional del Ambiente (ANAM)
Papua New Guinea	Mr. Varigini Badira, Executive Director	Office of Climate Change and Development
Paraguay	Ing. Agr. Gustavo Evelio González Chávez, Coordinador de Projectos DPE	Secretaría del Ambiente (SEAM)
Peru	Ms. Amelia Díaz Pabló, President and CEO	National Service of Meteorology and Hydrology (SENAMHI)
Philippines	Ms. Mary Ann Lucille L. Sering, Vice Chairperson and Executive Director	Climate Change Commission
Poland	Ms. Agnieszka Kozlowska-Korbicz	Ministry of the Environment
Republic of Moldova	Ms. Ala Druta	Climate Change Office, Ministry of Environment
Russian Federation	Mr. Sergei Vasin	Ministry of Education and Science

Country	NDE	Institution
Rwanda	Mr. Faustin Munyazikwiye, Director of Climate Change and International Obligations	Rwanda Environment Management Authority
Samoa	Mr. Suluimalo Amataga Penaia, Chief Executive Officer	Ministry of Natural Resources and Environment
Sao Tome and Principe	Mr. Abenilde Tomé Pires dos Santos	Direcção de Indústria/Serviço Nacional da Propriedade Industrial (SENAPI)
Saudi Arabia	Mr. Abdullah N. ALSarhan	Ministry of Petroleum and Mineral Resources
Senegal	Mr. Issakha Youm	Centre d'Etudes et de Recherches sur les Energies Renouvelables (CERER)
Serbia	Mr. Vladica Bozic, Head of Section for Project Preparation	Ministry of Agriculture and Environmental Protection
Sierra Leone	Mr. Ibrahim Lamin Mohamed Sesay, Executive Secretary	National Science and Technology Council
Singapore	Mr. Sin Liang Cheah	National Climate Change Secretariat
Slovakia	Mr. Igor Veres	Ministry of the Environment
Slovenia	Mr. Zoran Kus	Ministry of Agriculture and Environment
Solomon Islands	Mr. Douglas Yee Director Climate Change	Ministry of Environment, Climate Change, Disaster Management and Meteorology
South Africa	Mr. Henry Roman	Department of Science and Technology
South Sudan	Mr. David Batali Oliver Samson, Director of Pollution Control Department	Ministry of Environment
Spain	Ms. Sara Aagesen	Spanish Climate Change Office, Ministerio de Agricultura, Alimentación y Medio Ambiente
Sri Lanka	Mr. R.D.S. Jayathunga, Director	Ministry of Environment and Renewable Energy
Suriname	Mr. Sieuwnath Naipal	Climate Change Expert Group under the cabinet of the President
Swaziland	Mr. Bafana Simelane	Ministry Tourism and Environmental Affairs, Meteorology Department
Sweden	Mr. Michael Rantil	Swedish Energy Agency
Syrian Arab Republic	Mr. Thaer Al Deif	Ministry of State for Environment Affairs
Tajikistan	Mr. Nasimjon Rajabov, Head, Climate change and Ozone center; Mr. Anvar Homidov, Senior Climate Change Specialist	State Administration for Hydrometeorology
Thailand	Mr. Surachai Sathitkunarat, Director of Energy and Environment	National Science Technology and Innovation Policy Office (STI), Ministry of Science and Technology
Togo	Ms. Mery Yaou	Direction de l'Environnement, Ministère de l'Environnement et des Ressources Forestières
Tonga	Mr. Paula Pouvalu Ma'u, Chief Executive Officer	Ministry of Meteorology, Energy, Information, Disaster Management, Environment,Climate Change and Communications (MEIDECC)
Tunisia	Mr. Bouzghaya Fethi	Direction Générale du Développement Durable, Ministère de l'Equipement, de l'Aménagement du Territoire et du Développement Durable
Turkey	Mr. Bilgin Hilmioglu	The Scientific and Technological Research Council of Turkey (TÜBITAK) – Marmara Research Center (Environment and Clean Production Institute)
Uganda	Mr. Maxwell Otim Onapa, Deputy Executive Secretary	Uganda National Council of Science and Technology (UNSCT)
United Kingdom of Great Britain and Northern Ireland	Mr. Ben Lyon, Head of UK Delegation	Department of Energy and Climate Change (DECC)
United Republic of Tanzania	Dr. Hassan Mshinda, Director General	Tanzania Commission for Science and Technology (COSTECH)

Country	NDE	Institution
United States of America	Mr. David Reidmiller, Foreign Affairs Officer	U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, Office of Global Change
Ukraine	Ms. Viktoriia Shtets, Senior Expert, Climate Strategy Division	Climate Policy Department, Ministry of Ecology and Natural Resources
Uruguay	Mr. Jorge Rucks, Director (focal point); Mr. Ignacio Lorenzo (alternate focal point)	Ministry of Environment
Uzbekistan	Mr. Victor Chub, Minister; Mr. Marat Tursunov, Director; and Mr. Majid Khodjaev, Director	Uzhydromet (coordinating body); Technology Transfer Agency; Research-Introduction Centre “Eco-Energy”; and the Central Asian Regional Centre on Renewable Energy Sources
Vanuatu	Mr. Jotham Napat	Ministry of Climate Change
Viet Nam	Mr. Le Ngoc Tuan, Director, Division of Science, Technology and International Cooperation	Department of Meteorology, Hydrology and Climate Change, Ministry of Natural Resources and Environment of Viet Nam
Yemen	Mr. Mohamed Said El-Mashjary, Chairman	Environment Protection Agency (EPA)
Zambia	Mr. Ben Makayi, Senior Science and Technology Officer	Ministry of Education, Science, Vocational Training and Early Education
Zimbabwe	Mr. Elisha N. Moyo, Principal Climate Change Researcher	Climate Change Management Department, Ministry of Environment, Water & Climate

CHART

Gender distribution among NDEs



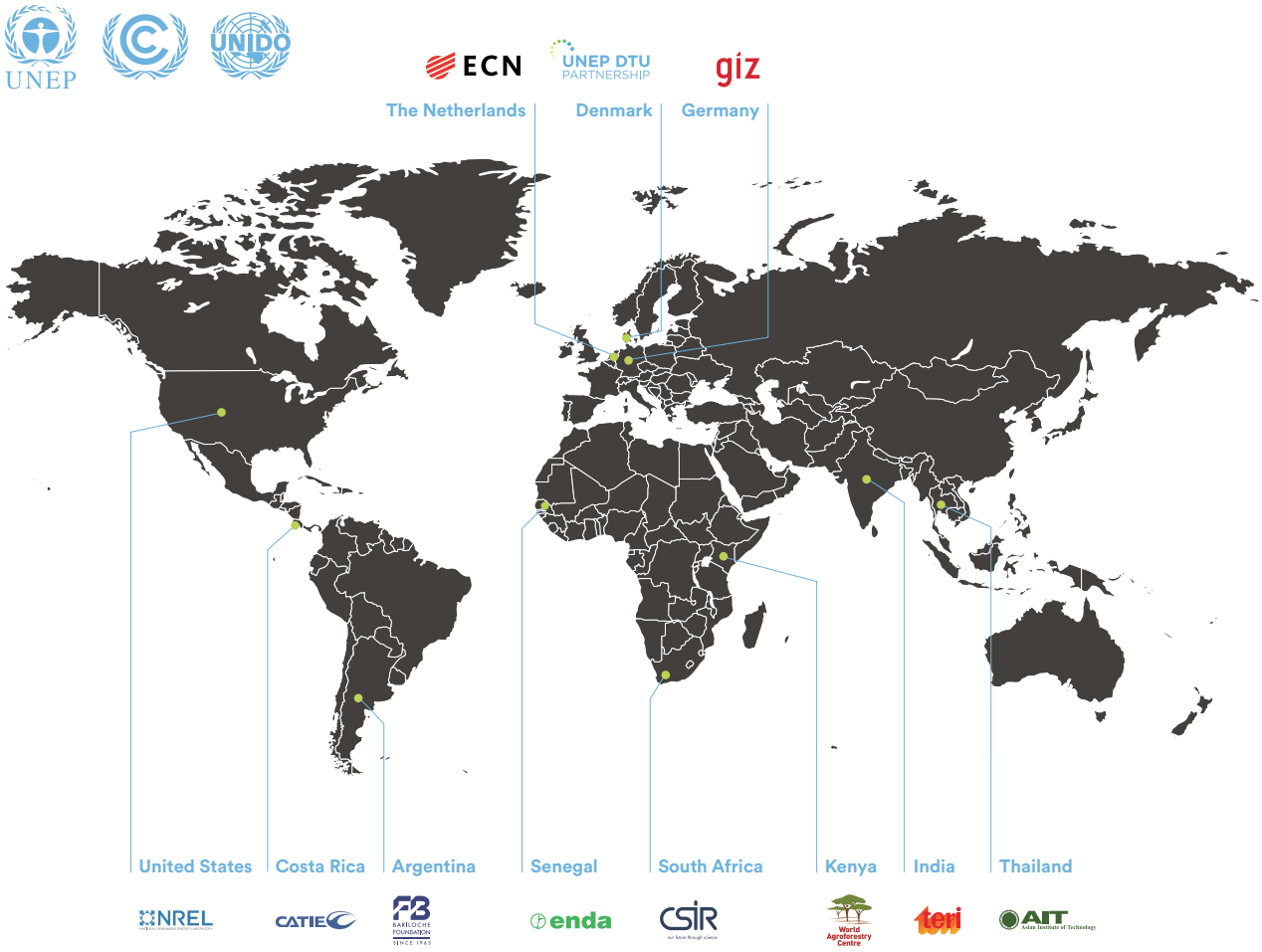
Consortium partners

CTCN Consortium Partners

The Climate Technology Centre's Consortium Partners, together with UNEP and UNIDO, form the key framework for the Centre's operations. These partners offer a breadth and depth of expertise in climate adaptation and mitigation along all steps of the technology cycle. These partners also offer significant geographic perspectives, valuable language capabilities, and extensive networks.

Consortium partners engage on all fronts of CTCN's services:

- technical assistance design and delivery
- deliver of webinars
- facilitating of technical exchanges
- delivery of web based and in person trainings
- preparation of climate technology case studies good practice guidance materials
- development of the climate technology library
- co-hosting of regional CTCN Forums for networking and knowledge sharing



CTCN Secondment Programme

The Climate Technology Centre launched its Secondment Programme in 2014 in order to foster knowledge transfer among the CTCN and its partner institutions and thereby enhance international cooperation on technologies for climate change adaptation and mitigation. The Secondment Programme enables young professionals from among Climate Technology Network members (including NDE institutions) and CTCN Consortium partners to participate in the work of the CTCN secretariat in Copenhagen.

Secondees participate in the strategic and operational work of the Centre, while enhancing their understanding of climate technology implementation and knowledge transfer for a period of 4 - 6 months. At the same time, the CTCN aims to learn from the Secondees' experience, including identifying local technology needs, cultural, socio-economic and political influences on technological development, and how to effectively support development in specific regions.

This year's selected Secondees, Adriana Carvallo and Abdou Diop, joined CTCN from Network member The Carbon Trust and Consortium partner ENDA Energie, respectively.

"This wonderful programme gave me an opportunity not only to contribute in receiving more requests from African countries, but also to learn a lot from the CTCN team. The work we are all doing is very important in order to bring positive change for the most vulnerable communities. I think, this perfect initiative reflects CTCN's approach to partnering for sustainable change. Many thanks to all CTCN staff for your warm collaboration 'Jeureudieuf'."

Abdou Diop, Eng.
ENDA Energie

Stakeholder and Private Sector Engagement with DNV GL

The 5th Advisory Board approved a Strategy for Private Sector Engagement to build capacity and maintain an effective partnership with the private sector at the national, regional, sectoral and international level. This Strategy contributes to the CTCN's mandate and has already led to partnerships with ongoing industry efforts to promote ambitions for climate technologies such as the Low Carbon Technology Partnerships Initiative (LCTPI). To implement this strategy, the CTCN and DNV GL are finalizing the design of the CTCN Engagement Forum, to build and leverage partnerships for the formulation and implementation of requests and projects for the deployment of climate technologies. Through the Initiative, the CTCN will bring together private sector (in particular SMEs), government, investors, and other stakeholders to create enabling environments for INDC and other commitments to be operationalized via regional thematic groups on climate technologies. This Engagement Forum will be launched at COP 21.
As the implementation of the Technical Assistance Requests has progressed, necessary Monitoring and Evaluation (M&E) practices have been introduced. This allows for better information sharing and provides operational controls. In order to demonstrate overall impact of the CTCN, work has also started to link the Technical Assistance outcomes with the Sustainable Development Goals (SDGs).

DNV·GL

Strategic Partnership DNV GL & CTCN

At the end of 2014, the CTCN created a strategic partnership with DNV GL, an independent service provider working to safeguard life, property and the environment. DNV GL has worked successfully with a number of national governments, universities, regulators, NGOs and private companies on safety and sustainability, combining leading technical and operational expertise, risk methodology and in-depth industry knowledge. DNV GL operates in more than 100 countries with its 16,000 professionals.

As a strategic partner, DNV GL supports the operations of the CTCN in the following key areas:

- Knowledge management (KM) – supporting the development and operation of the CTCN's knowledge management system (KMS)
- Private sector engagement (PSE) – structuring and delivering a robust private sector engagement platform for the CTCN
- Monitoring, evaluation and management systems (M&E) – supporting the development and implementation of an effective management system and QA & QC procedures

The CTCN launched the first version of its knowledge management system during COP20 in Lima. Since then, DNV GL has collaborated with CTCN to further enhance this system and will be launching a new version with multiple features including a match-making facility, a climate technology library, a virtual office for the secretariat, a Technical Assistance Dashboard and a visual redesign. The KMS has seen a significant increase in knowledge resources since its inception at COP20.

Gender and technology

Gender and Technology

In the Climate Technology Centre and Network's mission, laid out by the UNFCCC Conference of Parties, the importance of *"taking into account gender considerations to support action on mitigation and adaptation and enhance low emissions and climate-resilient development"* is made clear. Indeed, across all its services, the CTCN is striving to incorporate gender mainstreaming to ensure that the process and outcomes of its work reflect an inclusive and equitable approach to technology transfer.
As part of this effort, the CTCN appointed a Gender Mainstreaming Focal Point from among its manager-level staff in 2015.

Technical Assistance

The Response Plan is developed in response to a country request for technical assistance by Consortium and/or Network members with support of the NDE and the CTCN Climate Technology Manager. This plan must describe how gender considerations will be included and monitored within proposed activities, as well as how outcomes will impact sustainable development goals.

Knowledge Sharing

As part of its webinar series, the CTCN partnered with UNIDO, UN Women, and ENERGIA on a webinar hosted by EmpowerWomen.org entitled "RE-Thinking The Role Of Climate Technology For Women's Empowerment". The CTCN is also actively seeking knowledge partnerships with organizations experienced in gender and climate in order to collaborate on generating greater access to existing gender mainstreaming tools, guidance materials, reports and case studies via the CTCN Knowledge Portal: www.ctc-n.org. Search functionality, key word tagging, and matchmaking systems will assist users to identify gender-specific components of informational resources.

Capacity Building

As part of regional inception trainings for CTCN National Designated Entities, sessions on "Mainstreaming gender into climate planning" have been presented. The selection process for the CTCN Secondment Programme strives for a gender and geographical balance of Secondees. The CTCN also participated in the "Workshop on gender-responsive climate policy with a focus on mitigation action and technology development and transfer" during the forty-second sessions of the subsidiary bodies of the UNFCCC.


GL-02
03
03

CHAPTER 2

CTCN TECHNICAL ASSISTANCE

"I particularly liked interacting with NDEs from different countries and sharing their experiences."

Participant, CTCN Forum in Anglophone Africa

Technical Assistance

Tailor made solutions delivered upon country demand

The CTCN provides technical assistance in response to requests submitted by developing countries via their Nationally-selected focal points, or National Designated Entities (NDEs). Upon receipt of such requests, the CTC quickly mobilizes its global Network of climate technology experts to design and deliver a customized solution tailored to local needs. The CTCN does not provide funding directly to countries, but instead supports the provision of technical assistance provided by experts on specific climate technology sectors.

HOW IT WORKS

1. Academic, government, NGO and/or private sector representatives work with their National Designated Entity* to identify the type of technical assistance needed in order to implement their technology-related climate plans
2. The NDE conveys the request to CTCN
3. A team of climate technology experts from the Climate Technology Centre and Network collaborate with the NDE to provide a solution that is tailored to the needs of the individual country
4. Response Plans are generally delivered within 12 months

* For more information on National Designated Entities, please see page 10 or visit www.ctc-n.org/about-ctcn/national-designated-entities

Technical Assistance is provided:

- To developing country academic, public, NGO, or private entities upon their request
- Free of charge (value up to 250,000 USD)
- State of the art and locally relevant expertise
- For a broad range of adaptation and mitigation technologies

Technical Assistance is available through all stages of the technology cycle:

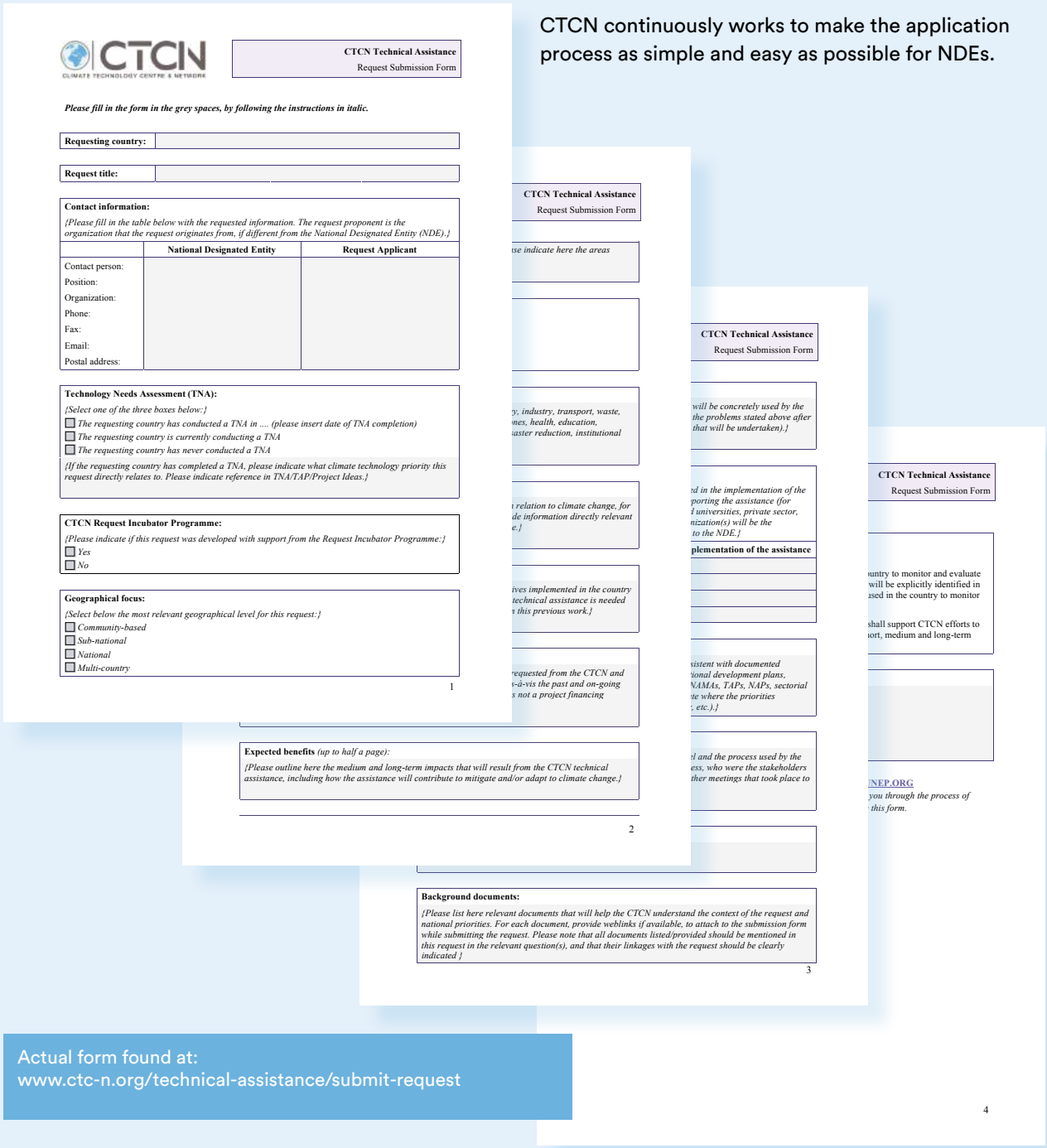
- From identification of needs
- Policy assessments
- Selection and piloting technology solutions
- To assistance that supports technology customization and widespread deployment

"The CTCN is the best opportunity developing countries have had since the Kyoto mechanism. We need to sail on its wings to have technology transfer become a reality in Africa."

Willis Makokha,
Industrial Research and Development Institute, Kenya

Technical Assistance Form

CTCN continuously works to make the application process as simple and easy as possible for NDEs.



CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Technical Assistance
Request Submission Form

Please fill in the form in the grey spaces, by following the instructions in italic.

Requesting country:

Request title:

Contact information:

{Please fill in the table below with the requested information. The request proponent is the organization that the request originates from, if different from the National Designated Entity (NDE).}

	National Designated Entity	Request Applicant
Contact person:		
Position:		
Organization:		
Phone:		
Fax:		
Email:		
Postal address:		

Technology Needs Assessment (TNA):

{Select one of the three boxes below:}

☐ *The requesting country has conducted a TNA in .... (please insert date of TNA completion)*
☐ *The requesting country is currently conducting a TNA*
☐ *The requesting country has never conducted a TNA*

{If the requesting country has completed a TNA, please indicate what climate technology priority this request directly relates to. Please indicate reference in TNA/TAP/Project Ideas.}

CTCN Request Incubator Programme:

{Please indicate if this request was developed with support from the Request Incubator Programme:}

☐ *Yes*
☐ *No*

Geographical focus:

{Select below the most relevant geographical level for this request:}

☐ *Community-based*
☐ *Sub-national*
☐ *National*
☐ *Multi-country*

1

Expected benefits *(up to half a page):*

{Please outline here the medium and long-term impacts that will result from the CTCN technical assistance, including how the assistance will contribute to mitigate and/or adapt to climate change.}

2

Background documents:

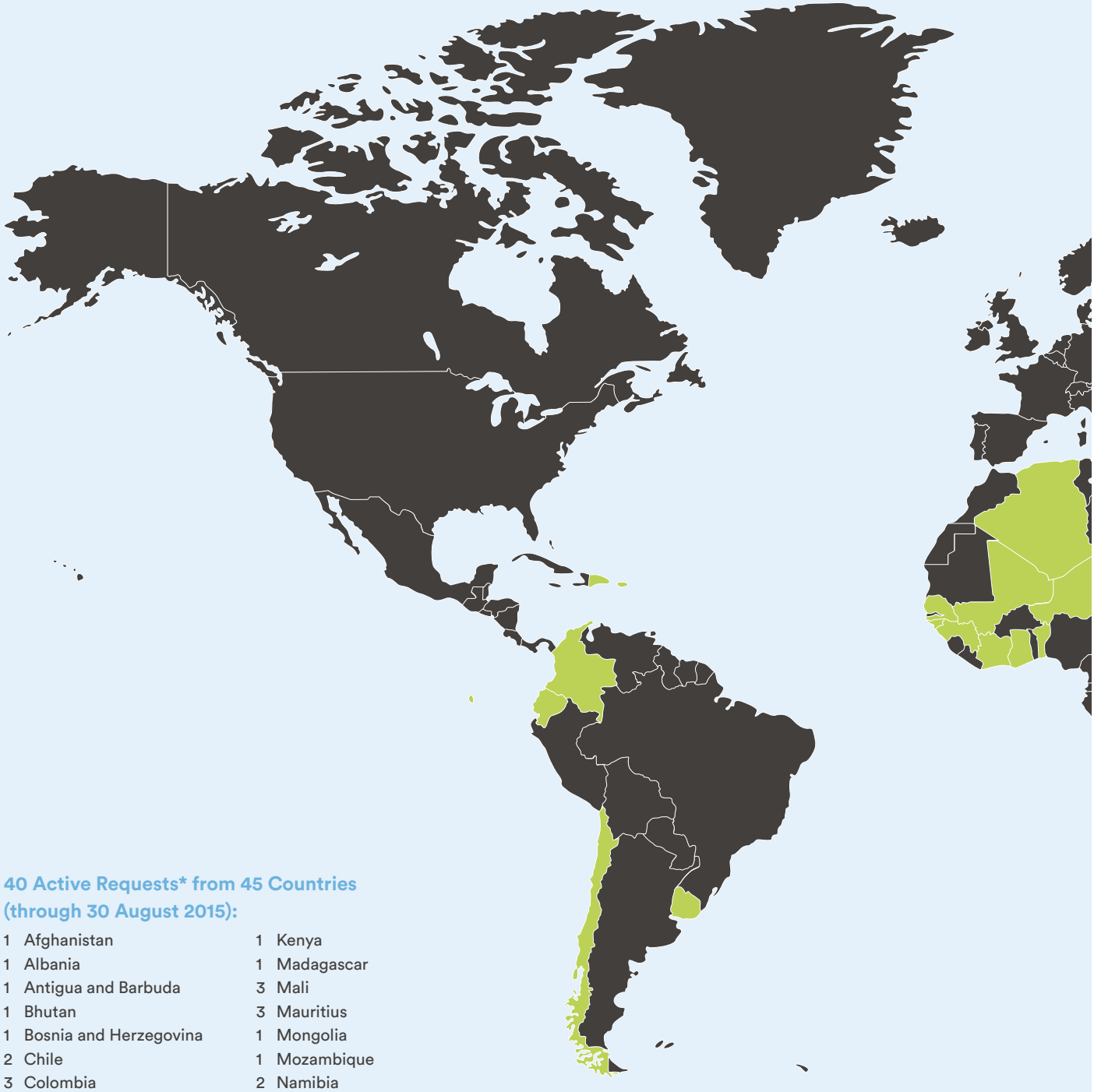
{Please list here relevant documents that will help the CTCN understand the context of the request and national priorities. For each document, provide weblinks if available, to attach to the submission form while submitting the request. Please note that all documents listed/provided should be mentioned in this request in the relevant question(s), and that their linkages with the request should be clearly indicated }

3

4

Actual form found at:
www.ctc-n.org/technical-assistance/submit-request

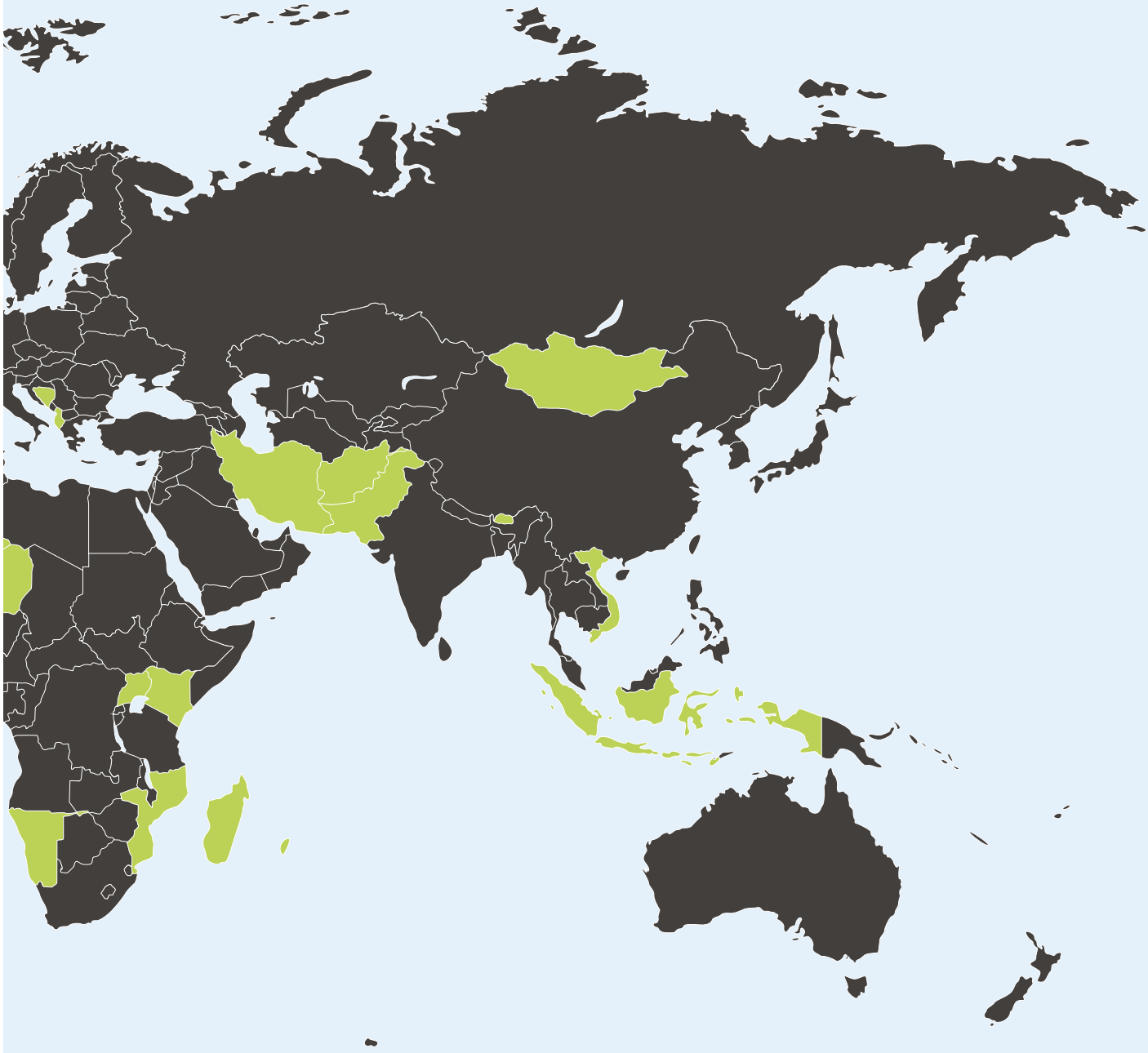
Technical Assistance Requests by Country



40 Active Requests* from 45 Countries (through 30 August 2015):

1	Afghanistan	1	Kenya
1	Albania	1	Madagascar
1	Antigua and Barbuda	3	Mali
1	Bhutan	3	Mauritius
1	Bosnia and Herzegovina	1	Mongolia
2	Chile	1	Mozambique
3	Colombia	2	Namibia
2	Côte d'Ivoire	1	Niger
2	Dominican Republic	1	Pakistan
1	Ghana	3	Senegal
1	Guinea	1	Syrian Arab Republic
1	Guinea Bissau	1	Uganda
5	Indonesia	1	Uruguay
2	Iran (Islamic Republic of)	1	Vietnam

*2 requests are considered ineligible;
2 are inactive and thus are not listed here.



12 Active Requests from 12 Countries (1 Sept. - 22 Nov. 2015):

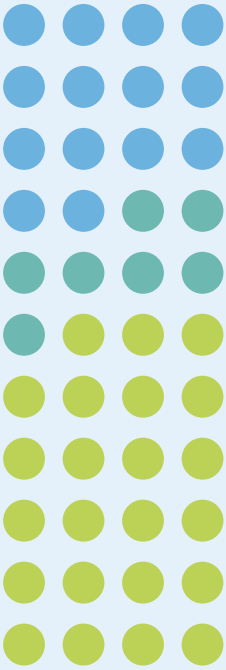
1 Algeria
2 Benin
3 Ecuador
2 Kenya
1 Mali
3 Vietnam

Technical Assistance in Numbers

Period: January 2014 - August 2015

FIGURE

Adaptation vs. mitigation requests



Adaptation	14
Adaptation / Mitigation	7
Mitigation	23
TOTAL REQUESTS	44

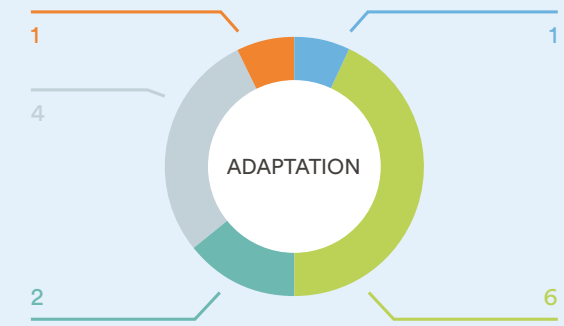
DATA

Distribution of requests by proponent

Government / Ministry	22	Local government	2
Specialized agency	11	Private company	3
Research / academia	3	Civil society / NGO	1
Various type (multi-country)	2		

CHART

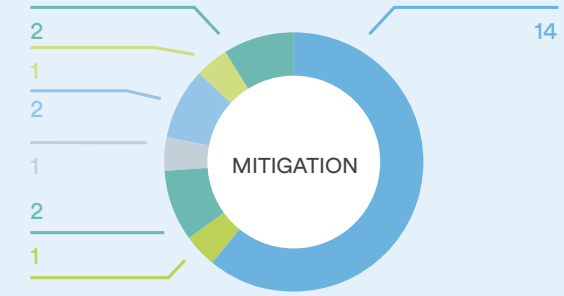
Adaptation requests by sector



- 1 early warning and environmental assessment
- 6 agriculture and forestry
- 2 water
- 4 cross-sectoral
- 1 coastal zones

CHART

Mitigation requests by sector



- 14 energy
- 1 transport
- 2 industry
- 1 forestry
- 2 waste management
- 1 agriculture
- 2 cross sectoral

MAP

Geographical distribution of requests

DATA

Distribution of requests based on Technical Needs Assessments (TNAs)

22	from countries that undertook a TNA
19	from countries that have not yet undertaken a TNA
3	multi-country requests (with completed TNAs for some individual countries)

DATA

Distribution of requests by geographical scope

Community level	5
Sub-national level	8
National level	28
Multi-country level (in same region)	3

DATA

Distribution by request eligibility

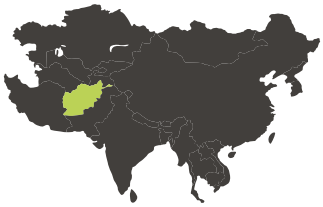
38
Requests deemed eligible (including three inactive)

4
Requests deemed eligible and not prioritised

2
Requests not deemed eligible

Afghanistan

Technical support for the government in the identification of technology needs



Adaptation and Mitigation

Cross-sectoral

Context

As a mountainous country, with dry lands and frequent droughts, Afghanistan experiences increasing extreme weather that affect the availability of water, threatening the supply of drinking water, as well as crop production, very much dependent on irrigation. Afghanistan has also a good potential for generating renewable energies, such as hydropower, solar and wind energy to contribute to reduce climate change and pave the way for a low-carbon development. The government is thus challenged to find the appropriate technologies to disseminate in the country to mitigate and adapt to the changing climate.

CTCN Response

- Identify climate technology priorities for agriculture, energy and water sectors
- Develop priority climate technology project concepts
- Increase national capacity to identify climate technology priorities and access investment and funding for climate technology in Afghanistan

Expected Results

- Compendium of climate technology options
- Technology project concepts
- Planning roadmap for mainstreaming climate technology priorities
- Strengthened political will and support for Mitigation and adaptation technologies

Request Proponent

The National Environmental Protection Agency

National Designated Entity

Mr. Ghukam Hassan Amiry, National Environment Protection Agency (NEPA)

Response Expert Team

UNEP, GiZ

Country Partners

Afghanistan National Disaster Management Authority; Ministry of Agriculture; Ministry of Economy; Ministry of Energy and Water; Ministry of Finance; Ministry of Foreign Affairs; Ministry of Rural Rehabilitation and Development

Albania

Regional Energy Efficiency Action Plan

Mitigation
Energy

CTCN Response

- Develop the first local-level plan for energy efficiency and achievement
- Provide training to enhance understanding of national energy plans among regional stakeholders and local government employees

Expected Results

- First inter-regional energy efficiency plan with clear steps for Mitigation actions at the community level
- Potential for future plan replication in other regions

Request Proponent
Ministry of Science and Technology

National Designated Entity
Ms. Enkelejda Malaj, Albanian Ministry of Environment, Forestry and Water Administration

Country Partners
Ministry of Energy and Industry; RCE middle Albania; Meister Consultants Group

Antigua and Barbuda

Technical Assistance for the Establishment of a Sustainable Financial Mechanism for Climate Change in gaining energy independence

Adaptation and Mitigation
Cross-sectoral

Requested CTCN Response

- In-Country Assessment
- Analysis of Renewable Energy Priority Technologies for Deployment
- Develop of the Workforce Training Scope of Work

Expected Results

- Assessment of Antigua and Barbuda's energy context, renewable energy deployment goals, and current barriers
- Analysis of renewable energy priority technologies
- Training program to inform proposals to potential donor organizations

Request proponent
Ms. Diann Black-Layne, Environment Division – Ministry of Agriculture, Housing, Lands and the Environment

National Designated Entity
Ms. Diann Black-Layne, Environment Division – Ministry of Agriculture, Housing, Lands and the Environment

Country Partners
Ministry of Public Utilities; Ministry of Tourism

Bhutan

Reducing GHG Emissions from Transport by Improving Public Transport Systems

Mitigation
Transport

CTCN Response

- Public transport management training for public transport officials and managers
- Public transport operations training for private passenger bus operators
- Training in climate change, vehicular emissions and use of emissions testing equipment
- Guidance on relevant technologies

Expected Results

- Enhanced public transport management knowledge and skills
- Reduction in GHG emissions due to improved public transport and increased ridership
- Co-benefits in terms of reduction in local air pollutants, noise pollution and road collisions

National Designated Entity

Mr. Lham Dorji, National Environment Commission Secretariat

Request Proponent

Road Safety and Transport Authority

Response Expert Team

Technical University of Denmark (DTU), Asian Institute on Technology (AIT)

Country Partners

Department of Roads; Road Safety and Transport Authority; Ministry of Information and Communications

Bosnia and Herzegovina

Rehabilitation and Modernization of the district heating (DH) system in the City of Banja Luka

Mitigation
Energy use

Requested CTCN Response

- Assess and evaluate the existing investment/ business plans
- Analyse existing fuel supply and fuel reduction options
- Analyse the technical and financial feasibility of fuel conversion from oil to biomass
- Undertake a comprehensive environmental analysis of proposed investments
- In dialogue with stakeholders propose an efficient tariff system

Expected Results

- Continuation of Banja Luka's DH system
- Reduction in the use and procurement cost of crude oil
- The replacement of 10% of the city's DH distributional network
- The mainstreaming of insulation techniques and the subsequent reduction (estimated at up to 40%) of the building stock's energy usage
- The development of a new energy tariff system at municipal level

Request proponent

Mayor's Office of Banja Luka

National Designated Entity

Mr. Goran Trbic, University of Banja Luka

Country Partners

A.D Banja Luka; Mayor's Office of Banja Luka; UNEP's Regional Office for Europe (UNEP-ROE); University of Banja Luka

Chile

Design Biodiversity Monitoring Network in the Context of Climate Change

Adaptation
Ecosystems

CTCN Response
- Design a conceptually and practically robust monitoring strategy
- Establish a national monitoring network
- Implement the necessary infrastructure and personnel needs

Expected Results
- Design of a monitoring network for biodiversity and ecosystem integrity
- Standards and protocols for monitoring biological and environmental variables, climate scenarios, the networks information exchange and data management
- Proposal for formal institutional arrangements as well as logistical and operational requirements
- The strengthening of Chile's ecosystem resilience of ecosystems and decision making ability

National Designated Entity
Mr. James A. Robinson, Ministry of Development

Request proponent
Ministry of Development

Response Expert Team Lead
Tropical Agricultural Research and Higher Education Centre (CATIE); Support World Agroforestry Centre (ICRAF)

Country Partners
Center for Aquatic Studies; Chilean navy; CONAF; Conicyt; Directorate General of Water (DGA); Ecology and Biodiversity Institute (IEB); INACH (Antarctic Institute of Chile); INFOR; GIZ; Ministry of Development; Ministry of the Environment; SUBPESCA; University of Concepcion

Chile

Support the replacement of F-refrigerants used in refrigeration systems in food processing, production and exports (fruits and vegetables)

Mitigation
Cross-sectoral

CTCN Response
- Provide guidance on national policy, regulatory and legal frameworks
- Introduce natural refrigerant systems to Chilean market
- Improve awareness of stakeholders

Expected Results
- Conversion of cold storage facilities from HCFC-22 use to a natural refrigerant systems in the fruit and vegetable processing sector
- Direct GHG emission reductions
- Local capacities to maintain and further promote low GHG refrigeration technology good practices
- Easy replicability to other sectors

Request proponent
Ministry of Environment

National Designated Entity
James A. Robinson, Ministry of Development

Country Partners
Chile Alimentos; Chilean Energy Efficiency Agency; National Ozone Unit

Colombia

Development of a Mechanical-Biological Treatment (MBT) pilot project of the Waste NAMA in Cali

Mitigation
Waste

Request proponent
Directorate of Climate Change of the Ministry of Environment and Sustainable Development

National Designated Entity
Mr. Rodrigo Suárez, Directorate of Climate Change of the Ministry of Environment and Sustainable Development

Response Expert Team
Bariloche Foundation; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), International Solid Waste Association (ISWA)

Country Partners
Administrative Department of Environmental Management (DAGMA);Autonomous University of the West Cali; Carvajal Foundation; CEMPRE; Ministry of Environment and Sustainable Development, Climate Change Division; Ministry of Housing, Cities and Territory; Regional Autonomous Corporation of the Cauca River Valley; Universidad de Valle and Universidad (ICESI); Social Wealth Secretariat of Santiago de Cali

Context
The Colombian government has reformed its solid waste management regulations to enable the use of alternative treatment technologies. Current tariff structures do not recognize alternative treatment methods (recycling, compost, RDF, etc.) as part of a waste public service. In addition, the absence of a coordinated, national solid waste management policy, and a city-level action plan for integrated waste management policies, hampers the implementation of the project. Colombia is proposing the implementation of the Solid Waste Nationally Appropriate Mitigation Action (NAMA) pilot project, to shift the view of conventional waste management and promote alternative treatment methods, between public and private stakeholders and policymakers of the country.

CTCN Response
- Conduct technical feasibility study, including existing studies to identify appropriate technology
- Elaborate on deployment structures for the selected, treatment technology
- Create business model for MSW plant
- Develop a plan to access financing
- Conduct capacity building activities on operation of selected plant
- Conduct technical studies to determine the most feasible waste treatment technology for two additional pilot cities to facilitate replication and up-scaling

Expected Results
- Demonstration of the technical and financial feasibility of an alternative MSW treatment plant
- Implementation of MSW plant
- Job creation
- More efficient waste sector and role model function for to the region
- Reduced GHG (mainly CH4) emissions from landfills

Colombia

Monitoring and evaluation of national promotion policies for energy efficiency and renewable energy within industrial and transport sectors

Mitigation

Energy, transport and industry sectors

CTCN Response

- Evaluate effectiveness of existing incentives
- Identify specific technologies to promote through industrial and transport sector incentives
- Propose additional incentives/actions
- Propose M&E indicators to be used in future energy efficiency policies

Expected Results

- A tool to monitor and assess the results of incentives and to evaluate the possibility to extend incentives
- Enhanced local capacity to design new incentive mechanisms for energy efficiency and monitor results

National Designated Entity

Rodrigo Suarez Castaño, Ministry of Environment and Sustainable Development

Response Expert Team Lead

Bariloche Foundation Support
NREL, ECN, and UNIDO

Country Partners

Administrative Department for Science, Technology and Innovation (COLCIENCIAS); Ministry of Commerce, Industry and Tourism; Mining and Energy Planning Unit; Ministry of Environment and Sustainable Development; Ministry of Transport; National Authority for Environmental Licenses (ANLA); National University; United Nations Industrial Development Organization (UNIDO)

Colombia

National Adaptation Monitoring System

Adaptation

Monitoring

CTCN Response

- Identify the institutional framework
- Identify good practice for monitoring of adaptation in Colombia
- Design the monitoring system and its implementation protocol

Expected Results

- Robust system to monitor and evaluate effectiveness and the progress
- Information to improve current programmes, plan further actions, and attract private and public funding
- Ability to evaluate regional vulnerability, and to incorporate climate change variables into a broad range of planning instruments

Request proponent

Directorate of Climate Change of the Ministry of Environment and Sustainable Development

National Designated Entity

Mr. Rodrigo Suárez, Directorate of Climate Change of the Ministry of Environment and Sustainable Development

Response Expert Team

Tropical Agricultural Research and Higher Education Center (CATIE); UNEP DTU Partnership; Institute of Ecology and Biodiversity, University of Chile

Country Partners

Institute for Hydrological, Meteorological and Environmental Studies (IDEAM); Ministry of Environment and Sustainable Development – Climate Change Division

Côte d'Ivoire

Developing an air pollution reduction strategy in Abidjan district

Mitigation

Cross-sectoral

CTCN Response

- Create a map of air quality monitoring equipment and areas at particular risk
- Information on potential emission sources
- Draft a framework and guidelines for the development of appropriate air quality regulations
- Recommend a strategy for air quality monitoring
- Develop an air quality management plan with technology recommendations

Expected Results

- Identification of primary emission sources
- Air quality monitoring
- Adaptation of the policy of fleet renewal
- Promotion of renewable energy
- Reduction of greenhouse gas emissions
- Improvements in the health of the population

Request Proponent

Department of Environmental Quality and Risk Prevention

National Designated Entity

Mr. Philippe KOUADIO Kumassi, Department of Environmental Quality and Risk Prevention

Response Expert Team

Environment and Development Action in the Third World (ENDA)

Country Partners

The Department of Environmental Quality and Risk Prevention (DQEPR); Ministry of Environment, Safety and Sustainable Urban Development

Côte d'Ivoire

Establishment of an Environmental Information System (EIS)

Adaptation

Monitoring

CTCN Response

- Assist in the establishment of an effective strategy for collection of environmental data
- Support national stakeholders in the selection of appropriate software and technical equipment to measure data
- Participate in various stages of EIS validation tools (reports, Partnership Framework Convention, EIS Charter, etc.)

Expected Results

- Design of an environmental information
- Improved visibility of the state of Côte d'Ivoire's environment
- Greater coordination and planning ability in terms of adaptation strategies and prioritization

National Designated Entity

Mr. Philippe KOUADIO Kumasi, Department of Environmental Quality and Risk Prevention

Request Proponent

Sustainable Environment and Energy Development Consulting Center

Response Expert Team

World Agroforestry Centre (ICRAF), Environment and Development Action in the Third World (ENDA)

Country Partners

Ministry of Environment

Dominican Republic

Developing a NAMA to Leapfrog to Advanced Energy-Efficient Lighting Technologies

Mitigation

Energy

CTCN Response

- Establishment of mandatory minimum energy performance standards
- Creation of a monitoring, verification and enforcement mechanism
- Development of a large scale LED deployment scheme

Expected Results

- Replacement of conventional lighting with LEDs
- More than 730 GWh savings in annual electricity consumption, reducing the national electricity consumption by more than 5%
- Reductions in blackout occurrences across the country
- More than 100 million USD per year savings in electricity bills

National Designated Entity

Mr. Pedro García Brito, Ministry of Environment

Request Proponent

National Energy Commission

Country Partners

Electricity Distribution Companies (EdeNorte, EdeSur and EdeEste); Ministry of Energy and Mines; Ministry of Environment; National Energy Commission

Dominican Republic

Early Warning Communication Protocol

Adaptation

Disaster/Early Warning

CTCN Response

- Strengthen and modernize protocols to communicate extreme weather events
- Identify most relevant information technologies to convey to the public (including mobile phone app)
- Broker private financing for development and scale up of the early warning communication protocol

Results

- Analysis of existing Early Warning Systems (EWS) affecting the area and ways to improve them
- Strategy and action plan for using new information and communication technologies (especially smartphones and apps) for dissemination of early warnings to the public
- Action plan to attract investment for scaling up the communication protocol with potential public and private sector investors

Request Proponent

The Ministry of Environment and Natural Resources, Instituto Dominicano de Desarrollo Integral (IDDI)

National Designated Entity

Mr. Pedro García Brito, Director of Climate Change, Ministry of Environment and Natural Resources

Response Expert Team Lead

Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ); Support DHI via UNEP DTU Partnership

Country Partners

Emergency Operations Center (COE); Ministry of Environment and Natural Resources

Guinea

Mobilization of the financial resources for deploying adaptation technologies

Adaptation
Cross-sectoral

CTCN Response
- Identify opportunities and facilitate introductions with public and private sector financiers
- Train national climate technology project developers to mobilise public and private sector financing
- Support access to finance of specific adaptation technologies
- Assist in the design of business plans for a private sector investor and international donor audience

Results
- Increased knowledge and capacities to attract investors and donors to fund projects
- Increased number of initiatives funded to deploy and scale up climate technologies for adaptation

Request Proponent
National Environment Directorate

National Designated Entity
Mr. Mamady Kobélé Keita, National Environment Directorate

Response Expert Team
ENDA, DHI, CTI PFAN and Carbon Trust

Country Partners
Ministry of Agriculture; Ministry of Energy & Hydraulics; Ministry of Environment; National Environment Council; Research Centers (CERE, CERESCOR, CRED, IRAG)

Indonesia

Development of Anaerobic Digester Technology for Palm Oil EFB Waste

Mitigation
Waste

CTCN Response
- Map existing anaerobic digester technologies for EFB waste treatment and propose most relevant examples
- Facilitate knowledge exchange through expert collaboration and capacity building
- Provide support on the planning of an EFB anaerobic digester demonstration plant

Expected Results
- Shift to more efficient EFB waste treatment
- Production of renewable energy and reduction in greenhouse gas emissions
- Creation of new business opportunities in power generation
- Increase in electricity ratio for remote areas

National Designated Entity
Dr. Widiatmini Sih Winanti, National Council on Climate Change

Request Proponent
University of Lampung

Response Expert Team
The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Country Partners
Center of Research and Development of Forestry Product, Ministry of Environment and Forestry; Indonesia's Oil Palm Research Institute; Ministry of Energy and Mineral Resources; Ministry of Environment and Forestry; National Council on Climate Change (NCCC); State-Owned Nusantara Plantation and Palm Oil Company; University of Lampung

Indonesia

Hydrodynamic modelling for flood reduction and climate resilient infrastructure development pathways in Jakarta

Adaptation

Disaster/Early Warning

CTCN Response

- The development of a high resolution hydrodynamic model for a pilot project area in Jakarta that is capable of producing flood levels under differing climate and/or engineering scenarios
- A series of recommendations aimed at local authorities to reduce flooding risks
- Designing a strategy to attract financing for broader hydrodynamic modelling and to take action on the recommendations

Expected Results

- A hydrodynamic flood model in the context of climate change
- Increased local capacity in high resolution hydrodynamic modelling and use of the model.
- Resultant policy and planning recommendations to reduce flood hazards, risk and vulnerability
- A roadmap to sustain and expand the project using additional funding streams

Request Proponent

Jakarta Research Council

National Designated Entity

Ms. Nur Masripatin, Director General, Directorate General of Climate Change, Ministry of Environment and Forestry Change

Response Expert Team

The UNEP-DHI Partnership

Country Partners

Association of Marine Survey Contractor Indonesia; BAPPENAS; Indonesian Planning Expert Association (IAP); Jakarta Research Council; Provincial Governments of Banten, Jakarta and West Java; Ministry of Environment and Forestry; Ministry of Marine Affairs and Fisheries; Ministry of Public Works

Iran

Micro Combined Heat and Power Technology

Mitigation

Energy

CTCN Response

- Identify suppliers with proven CHP and MCHP technologies
- Facilitate communications with technology providers
- Develop a strategy for undertaking CHP capacity building on a national scale

Expected Results

- Guidelines of the work of the government in the energy sector
- Reduction in greenhouse gas emissions through enhanced energy efficiency
- More sustainable and low-carbon development of Iran

Request Proponent

Tamkar Gas Equipment Company

National Designated Entity

Mr. Hassan Jangavar, Center for Innovation and Technology Cooperation (CITC)

Response Expert Team

Energy Research Centre of the Netherlands (ECN)

Country Partners

Department of Environment; Ministry of Energy; Ministry of Housing and Urban Development Ministry of Petroleum; Private Sector; Universities and Research Institutes

Iran

Technology of Photovoltaic (PV) Solar Cell Design and Manufacturing

Mitigation
Energy

CTCN Response
- Consulting in field of silicon purification
- Technology of wafering
- Provide technical support for designing cells, developing cell test procedures, and testing modules output

Expected Results
- Report on status survey
- Recommendations to establish a successful PV industry in Iran
- Business plan for PV industry in Iran and a PV manufacturing plant in Iran

Request Proponent
Iran Ministry of Energy

National Designated Entity
Mr. Hassan Jangavar, Center for Innovation and Technology Cooperation (CITC)

Response Expert Team
The Energy and Resources Institute (TERI), Energy Research Centre of the Netherlands (ECN)

Country Partners
Ministry of Energy; Iran Renewable Energy Organization

Madagascar

Creating a technology development and education centre to address climate change

Adaptation and Mitigation
Cross-sectoral

Requested CTCN Response
- Design informative, awareness-raising and educational tools on climate change
- Design education curriculums and programs
- Mobilize financial resources to construct the centre
- Research and deploy climate technologies

Expected Results
- A business plan for the design and operations of the Climate Technology Centre
- Design of initial educational programme on climate change technologies
- Organisation of pilot raining sessions and workshops

Request Proponent
Maharitra Non-Governmental Organization

National Designated Entity
Mr. Todisoa Manankasina, National Council on Climate Change

Mali

Design and financing for crop drying and storage technologies to strengthen food security in the face of climate change

Adaptation
Agriculture

CTCN Response

- Conduct review of local project aiming at installing technologies using solar potential, to store and dry mangos, potatoes and gombos
- Finalize the business plan and related documents
- Develop a cash flow model
- Produce an independent feasibility audit to support investment decisions
- Provide coaching and support of project members
- Design a scaling up and communication strategy

Expected Results

- Deployment of simple semi-industrial drying and storage facilities enabling off-season availability of mangoes, potatoes and okra
- Access to higher margin markets at national and international level for dried fruits and vegetables is increased
- More than 500,000 USD injected every year in local economy, creating a multiply effect in the economy
- Increased food security for household throughout the year

Request Proponent
Mali Meteorological Office

National Designated Entity
Mr. Birama Diarra, Mali Meteorological Office

Response Expert Team
Environment and Development Action in the Third World (ENDA), the Climate Technology Initiative Private Financing Advisory Network (CTI PFAN)

Country Partners
Action Group for Modernization of Agriculture in Mali (GAMA enterprise); Mali Folk Center; Ministry of Agriculture; Ministry of Environment

Mali

Identification of climate adaptation technologies with rural communities

Adaptation
Agriculture

CTCN Response

- Develop a tailored and ready-to-use Reference Guide of technologies that communities can use to best adapt their agricultural practices with regards to climate change effects, and adapted to each agro ecological zones of the country
- Design and test a dissemination strategy for the Reference Guide so it can be used and known by a large number of communities and stakeholders in Mali
- Formulate key recommendations and steps to the Malian government for ensuring the uptake of best technologies and practices identified in the guide

Results

- Identification of 20 appropriate technologies for adapting to a changing climate
- Production of a Reference Guide
- Design and begin implementation of a dissemination strategy
- Recommendations and suggestions for financing large scale deployment

Request Proponent
Mali Meteorological Office

National Designated Entity
Mr. Birama Diarra, Mali Meteorological Office

Response Expert Team
Environment and Development Action in the Third World (ENDA), the World Agroforestry Centre (ICRAF), UNEP DTU Partnership

Country Partners
National Agency in charge of Environment and Sustainable Development; National Direction of Agriculture; National Direction in charge of Water and Forests; National Direction in charge of Livestock and Hydraulics; Permanent Assembly of Malian Chambers of Commerce

Mauritius

Building Capacity for Promoting a Greenhouse Gas Mitigation Strategy

Mitigation
Energy

CTCN Response
- Assess relevant technologies, processes and practices to reduce GHG emissions
- Provide capacity building on monitoring and evaluation of GHG emissions and mitigating measures

Expected Results
- Identification of emission abatement technologies
- Reduction of greenhouse gas emissions through reduced fuel consumption
- Decoupling GHG emissions from energy demand
- Sustained economic development at reduced environmental cost
- Improved health of citizens

Request Proponent
Ministry of Environment and Sustainable Development

National Designated Entity
Mrs Sin Lan NG YUN WING, Ministry of Environment and Sustainable Development

Response Expert Team
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Country Partners
Mauritius Sugar Producers Association; Ministry of Energy and Public Utilities; Ministry of Environment & Sustainable Development; Ministry of Fisheries; Ministry of Local Government and Outer Islands, Local Authorities (Municipal Council of Port Louis)

Mongolia

Revision of existing Renewable Energy Law of Mongolia and developing framework of activities for enactment of draft Law of Mongolia on Energy Conservation

Mitigation
Energy

CTCN Response
- Assistance with Renewable Energy Law
- Assistance with Energy Conservation Law

Results
- Comprehensive renewable energy strategy, coupled with structural and technical reforms, allowing to use also private capital

Request Proponent
Ministry of Environment and Green Development

Response Expert Team
United Nations Development Programme (UDP), National Renewable Energy Laboratory (NREL)

Country Partners
Ministry of Building construction; Ministry of Energy; Ministry of Environment and Green Development; National Power Transmission Grid - State Owned Stock Company

Mozambique

Feasibility Study on the Use of Waste that are Refuse Derived Fuel (RDF) for Cement Factories

Mitigation
Waste

CTCN Response

- Develop technical specifications needed to turn waste into RDF
- Provide recommendations to cement factories on how to adapt their infrastructure to receive RDF
- Propose a monitoring and evaluation system
- Analyse potential funding opportunities

Results

- Cement kilns are able to use energy generated by the waste material
- Decrease in consumption of non-renewable resources
- Consequent lowering of greenhouse gas emissions
- Longer useful life of waste disposal sites
- Boost of the recycling/waste management sector

Request Proponent

Ministry of Science and Technology

National Designated Entity

Ms. Antonio Jorge Raul Uaissone, Ministry of Science and Technology, High Education and Technical professional

Country Partners

Association of Municipalities (ANAMM); Carbon Africa; Center for the Promotion of Investment (CPI); Centro de Gestao de Conhecimento; Global Cement; Fund of the Environment (FUNAB); Ministry of Earth, Environment and Rural Development (MITADER); Mozambican Association of Recycling (AMOR); Reduce, Reuse, Recycle (3R)

Namibia

Facilitating financing to address increasing water scarcity

Adaptation
Water

Context

In the face of climate change, Namibia is a facing increasing water scarcity, with severe impacts on human health, food security and the national economy. The Namibian government is developing a comprehensive water security master plan, which will include prioritization of essential adaptation technologies to enable the country's transition to sustainable water security. Along side increase domestic public investment, the government is inviting private sector investors and international cooperation to partner with them in financing the deployment and scale-up of prioritised climate technology solutions to address their water scarcity crisis.

CTCN Response

- Facilitate prioritisation of most promising water scarcity technology solutions
- Strengthen project design for the prioritized water scarcity technologies
- Identify opportunities for financial investment and/or technical assistance
- Jointly organize and host public and private sector investor roundtable

Expected Results

- Increased investor interest and opportunities created
- Strengthened project concepts
- More advanced vision of priorities and the path to addressing water scarcity challenges

Request Proponent

Department of Environmental Affairs

National Designated Entity

Mr. Jonathan Mutau, Department of Environmental Affairs

Implementation Team

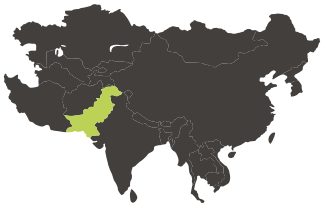
CTCN Network Member to be determined, Council for Scientific and Industrial Research (CSIR), UNEP DTU Partnership (UDP)

Country Partners

City of Windhoek; Ministry of Agriculture, Water and Forestry; Ministry of Environment and Tourism; NAMWATER

Pakistan

Technology Guidance and Support for Conducting the Technology Needs Assessment (TNA)



Adaptation and Mitigation

Cross-sectoral

CTCN Response

- Guidance on setting up the national team in charge of coordinating the Technology Needs Assessments (TNA) and of producing the related reports
- Support for the development of Pakistan's TNA workplan and budget
- Technical guidance for the different activities including on Technology Needs Assessment Report, the Barriers Analysis and Enabling Framework report, and the Technology Action Plan report.
- Training on the process and methodologies for developing these report and organizing the national process
- Quality control of the Technology Needs Assessments (TNA) and other reports.
- Support to dissemination and outreach of outputs and results, including the development of a series of targeted policy briefs and advocacy papers

Results

- Improved national institutional processes, policies and regulations for climate technology deployment
- Technology prioritised and associated analysis provide a powerful decision-support tool for technology transfer managers and development planners
- Developed more in-depth technology roadmaps or 'technology specific' action plans
- Technology actions yield social benefits, reduce greenhouse gas emissions and increase resilience of most vulnerable groups and sectors in Pakistan

National Designated Entity

Mr. Muhammad Irfan Tariq, Director General (Environment), Ministry of Climate Change

Request proponent

Directorate of Climate Change of the Ministry of Environment and Sustainable Development

Response Expert Team

DTU

Senegal

Development of energy efficiency projects in industries and services

Mitigation

Energy

CTCN Response

- Development of the study and monitoring/ evaluation tools (focus on co- and tri-generation)
- Capacity building for the project management
- Technical advices on policies for the technology adoption
- Project development
- Adaptation to the local context

Results

- A baseline assessment to identify and describe the current state of the technology in the country
- Review of best-available technologies
- Overview of common barriers to effective technology transfer
- Identification of potential pilot projects
- Overview of key capacity building efforts

Request Proponent

Centre for study and research on Rewelable Energy (CERER)

National Designated Entity

Ms. Mama Coumba Ndiaye, National Energy Efficiency Agency

Country Partners

Direction of the Environment and Classified Establishment (DEEC); National Energy Efficiency Agency (AEME); Ministry of Energy and Renewable Energy (MEDER); Senelec

Senegal

Green technology deployment in industrial zones

Mitigation
Industry

CTCN Response
- Identification and mapping of companies with high symbiotic potentials
- Outlining of potentials to use local outputs (wastes/ byproducts)
- Proposal of technologies needed
- Report of necessary investment and potential savings
- Capacity building for tenant industries
- Material flow balances in key companies/factories

Results
- Decreased exposure to fluctuating energy prices
- Decreased need for import of materials
- Increased grid independency
- Centralized management and administration in the industrial park
- Reduced greenhouse gas emissions
- Recommendation for central monitoring and evaluation
- Centralized water management and wastewater treatment system
- Centralized solid waste management system
- Separate chemical and hazardous waste management to avoid emission of toxic pollutants
- Regulatory frameworks for comprehensive utilization of wastes from the production
- New business models by treating by-products and selling them

Request Proponent
Enterprises Development Agency (Bureau de Mise à Niveau)

National Designated Entity
Mr. Issakha Youm, Centre for Study and Sesearch on Renewable Energy (CERER)

Uganda

Formulating Geothermal Energy Policy, Legal and Regulatory Framework

Mitigation
Energy

CTCN Response
- Conduct background analysis
- Develop recommendations for new geothermal policy and improvements
- Conduct stakeholder analysis
- Draft geothermal policy
- Draft proposed Geothermal Energy Law
- Draft proposed Supporting Laws and Regulations

Expected Results
- Report evaluating existing policies, laws, and regulations
- Report recommending the content of the new geothermal policy
- Creation of a stakeholder community
- Proposed geothermal policy, law and regulation as well as institutional framework
- Monitoring and evaluation
- An enabling environment for investments in geothermal power generation

Request Proponent
Ministry of Energy and Mineral Development

National Designated Entity
Dr. Maxwell Otim Onapa, Uganda National Council of Science and Technology (UNSCT)

Response Expert Team
National Renewable Energy Laboratory (NREL), United Nations Environment Programme (UNEP)

Country Partners
Directorate of Water Resources; Electricity Disputes Tribunal; Electricity Regulatory Authority; Ministry of Energy and Mineral Development; Ministry of Justice and constitutional Affairs; National Environment Management Authority; National Forest Authority; Rural Electrification Agency; Uganda Electricity Distribution Company, Electricity Generation Company, Uganda Electricity Transmission Company, Uganda National Bureau of Standards, Uganda Investment Authority, Uganda Revenue Authority, Uganda Wildlife Authority

Uruguay

Replacement of fluorinated refrigerants in the dairy sector

Mitigation
Industry

Requested CTCN Response
- Assistance for feasibility studies
- Project design and implementation on approximately 20 dairy farms

Expected Results
- By replacing the HCFC and HFC based refrigerants by others with low GWP and ODP, positive effects on mitigating climate change
- Elimination of about 125 kg of HCFC and 15 kg of HFC, which could prevent potential emissions of 285,000 kg of CO_2 equivalent

Request proponent
Ministry of the Environment, National Environment Directorate

National Designated Entity
Mr. Jorge Rucks, National Environment Directorate

Country Partners
Dairy farmers associations; Ministry of Agriculture; Ministry of the Environment

Vietnam

Bio-Waste Minimization and Valorization for Low Carbon Production in Rice Sector

Mitigation
Agriculture

CTCN Response
- Support the selection of appropriate technology options for paddy drying, briquette production and combustion
- Identify a business development strategy for industrial use

Expected Results
- Support for informed decision making and investment in selected enterprises
- Scaling-up of resource efficient and cleaner production improvements
- Strong climate change Mitigation potential

Request Proponent
Vietnam Cleaner Production Centre (VNCPC)

National Designated Entity
Mr. Le Ngoc Tuan, Ministry of Natural Resources and Environment of Vietnam

Expert Response Team Lead
Energy Research Centre of the Netherlands (ECN); Support
The Energy and Resources Institute (TERI)

Country Partners
Asia Development Bank; Global Environment Facility; Ministry of Agriculture and Rural Development; Ministry of Natural Resources and Environment of Vietnam; Rice millers; Vietnam National Cleaner Production Centre; UNIDO

Regional Technical Assistance Requests

Ghana, Kenya, Mauritius, Namibia

Green Cooling Africa Initiative (GCAI)

Mitigation

Cross-sectoral

Context

Refrigeration and air conditioning appliances (RAC) are rapidly spreading across Africa. As the electricity in most African countries is still generated through burning of fossil fuels, increased demand for energy results in increased greenhouse gas (GHG) emissions. With the use of highly energy efficient refrigeration and air conditioning devices and the substitution of high global warming potential (GWP) refrigerants with low GWP refrigerants and foam blowing substances, both GHG emissions and energy use can be substantially reduced. Alternative technologies are internationally available but not common in Africa. The Green Cooling Africa Initiative aims at establishing a prototype best practice approach for Ghana, Kenya, Mauritius, and Namibia.

CTCN Response

- Establish of robust GHG Inventory for selected, priority cooling sub-sectors
- Analyse technological gap between existing technologies and internationally available green cooling technologies
- Propose recommendations
- Develop regional and country specific technology roadmap recommendations
- Capacity building and NAMA institutional setup
- Seek funding and/or co-funding for implementation

Expected Results

- Potential GHG Mitigation of 30% over current estimates through 2030
- Reduced electricity consumption
- Decreased use of fluorinated and chemical substances which produce persistent atmospheric wastes
- Sustainable development benefits (income and employment generation, foreign exchange savings, increased energy security, etc.)

Request Proponents

Kenya Industrial Research and Development Institute, Environmental Protection Agency of Ghana, Ministry of Environment and Sustainable Development of Mauritius, Department of Environmental Affairs of Namibia

National Designated Entities

Mr. Joseph Amankwa Baffoe, Environmental Protection Agency, Ghana; Dr. M. C. Z. Moturi, Kenya Industrial Research and Development Institute; Mr P. Jhugroo, Ministry of Environment and Sustainable Development of Mauritius; Mr. Petrus Muteyauli, Ministry of Environment and Tourism of Namibia

Response Expert Team

United Nations Industrial Development Organization (UNIDO); Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ); Council for Scientific and Industrial Research (CSIR); United Nations Environment Programme (UNEP)

Country Partners

For full list of country partners, please see details of Green Cooling Africa Initiative response plan on www.ctc-n.org

Regional Technical Assistance Requests

Guinea-Bissau, Mali, Niger

Capacity Building in Ecosystem-based Methods and Green Infrastructure for Sustainable Agriculture Intensification and Disaster Risk Management

Adaptation

Agriculture

Context

In West Africa, where land production accounts for 70% of the basis of natural resources, provides 70% of jobs in rural areas, and 70% of consumed energy, there is a formidable tension between a strong growth in demand for water, land and agricultural products on the one hand, and a decrease in these resources' availability on the other.

CTCN Response

- Analyse state of the art sustainable agriculture methods and their results in all sub-humid to semi-arid areas of the three countries
- Identify appropriate interventions necessary to revert degradation of the various landscapes
- Train national extension services, NGOs etc. in stakeholder driven evidence-based decision-making
- Develop comprehensive concept paper for implementation in the 6 landscapes and present to a set of potential financiers
- Build capacity of national government officials in comprehensive programme development

Expected Results

- Climate change Mitigation by sequestering carbon both in more biomass and in thicker soils
- Increased adaptation through more appropriate and efficient agricultural practices, rainwater harvesting, using synergies among species to increase heat tolerance, requiring less water
- Improved climate risk management through rain water control, increased infiltration, and crop diversification
- Increase in the resilience of ecosystems and populations, by making them structurally more able to absorb the shocks of extreme environmental events

Request Proponents

Organisation Africaine de la Propriété Intellectuelle (OAPI) Guinea-Bissau; Agence Nationale de la Météorologie (MALI-METEO); Conseil National de l'Environnement pour un Développement Durable, Niger

National Designated Entities

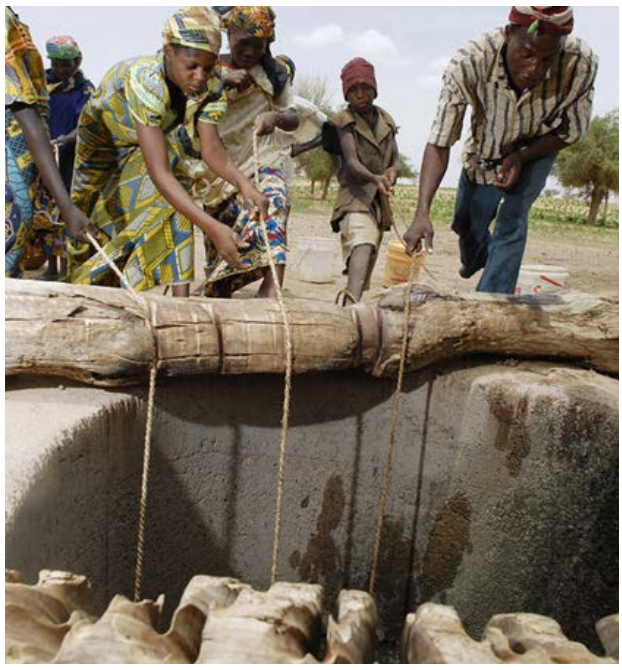
Mr. Carlos Sanca, Organisation Africaine de la Propriété Intellectuelle (OAPI) Guinea-Bissau; Mr. Birama Diarra, Agence Nationale de la Météorologie (MALI-METEO); Mr. Kamayé Maazou, Conseil National de l'Environnement pour un Développement Durable, Niger

Response Expert Team

World Agroforestry Centre (ICRAF)

Country Partners

For full list of country partners, please see details of Guinea Bissau, Mali, and Niger response plan on www.ctc-n.org



CHAPTER 3

CTC NETWORK

"ISWA's work on climate change, in furthering global coordination on waste and climate, is in line with the CTCN mission and hence it is an exciting opportunity to be able to join forces and contribute relevant technical expertise under the CTCN mandate."

Jiao Tang, Technical Manager, International Solid Waste Association (ISWA)

Climate Technology Network

Climate Technology Network

The CTCN is built on the foundation that civil society and the private sector actively partner with governments to facilitate enhanced action on technology development and transfer. Through its Network, the Climate Technology Centre brings together a diverse global community of climate technology decision makers, suppliers and financiers to identify barriers to technology transfer, exchange technology experience, and provide technical assistance and capacity building to developing countries.

Broad opportunities for engagement

Over the past year, Network members have participated in CTCN Regional Forums; hosted CTCN webinars; disseminated their research, technology information and case studies via CTCN's Knowledge Platform; and were selected by CTCN to begin providing technical assistance at the request of countries.

Who is the Network?

Experts from around the world, engaged in climate technology policy, capacity building, knowledge sharing and/or implementation, including:

- Academic and research centres
- Associations/Organizations
- Private sector technology providers
- National Designated Entities (NDEs), the CTCN national focal points selected by each country

Membership in the Climate Technology Network offers

Collaboration and Matchmaking: Networking with national decision makers, thought leaders, and technology providers via CTCN Regional Forums and other venues expands partnership opportunities (including matchmaking for financing and investment) and creates opportunity to discuss emerging areas of practice. A key goal of CTCN networking is to generate south-south collaboration.

Commercial opportunities

Network members gain access to competitive bidding for delivery of CTCN technical assistance and capacity building services to developing countries, financed by CTCN. Technical assistance spans both adaptation and mitigation across numerous sectors.

Information exchange

Through the CTCN Knowledge Portal (www.ctc-n.org), technical assistance and capacity building, Network members build a space to address barriers to technology transfer and to broaden their impact by conducting training on their areas of expertise, and sharing relevant experience, events, reports and tools.

How to join the Network

Simply complete the Network application (available online at ctc-n.org) and submit to ctcn@unep.org. The Climate Technology Centre reviews applications based on applicants' experience in climate technology policy, capacity building, knowledge sharing and/or implementation. Network membership is free.

Network partners

The Network in Numbers

Period: January 2014 - August 2015

FIGURE

Network members by type of institution

18 Private sector organization

16 Research and academic institution

5 Not for profit organization

15 Non-governmental organization

5 Intergovernmental organization

7 Partnership/ initiative

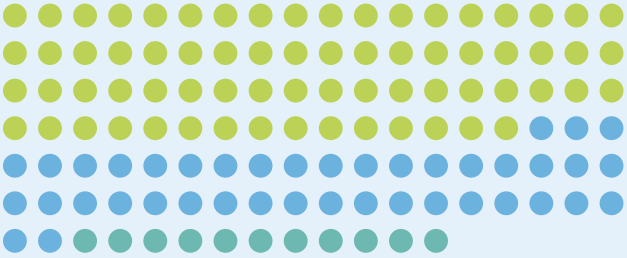
6 Public sector organization

1 Regional organization

73 TOTAL NETWORK MEMBERS

FIGURE

Adaptation vs. Mitigation Expertise



Mitigation	69
Adaptation	41
Cross-cutting	11

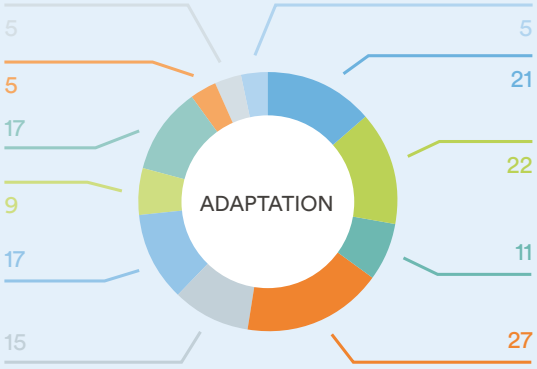
DATA

Network members based in Annex I vs. Non-Annex I countries

Annex I	35
Non-Annex I	29
International	9

CHART

Sectoral expertise within adaptation



- 21 Early warning/Disaster reduction
- 22 Agriculture/Fisheries
- 11 Forestry
- 27 Water resources
- 15 Coastal zones/Oceans
- 17 Terrestrial ecosystems
- 9 Human health
- 17 Infrastructure/Human settlement
- 5 Tourism
- 5 Businesses
- 5 Education

CHART

Sectoral expertise within mitigation

- 57 Energy
- 23 Transport
- 32 Industry
- 24 Agriculture
- 19 Forestry
- 30 Waste

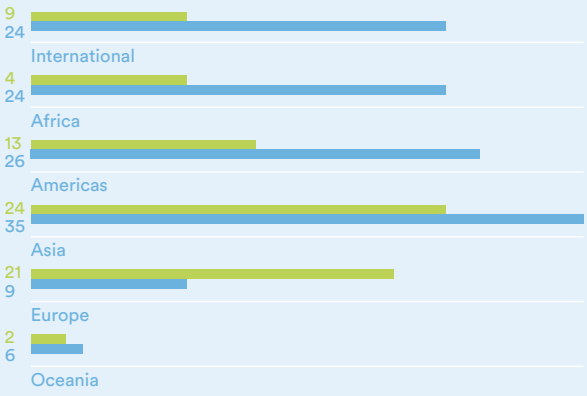
DATA

Type of service provided by Network members

Technology development and transfer	49
Collaboration in innovation	24
Investments	14
Capacity building	62
Knowledge sharing	62
Policy and planning	58

CHART

Network distributed by region



CHAPTER 4

KNOWLEDGE SHARING & CAPACITY BUILDING

> "The method of having so many exercises is very efficient. It enables us to learn all practical steps we will need to fulfil our role."
>
> **Participant, CTCN Forum in Eastern Europe / Middle East**

CTCN Knowledge Portal: www.ctc-n.org

Gateway to CTCN services and technology info

The CTCN works to enhance human and institutional capacity on climate technologies for adaptation and mitigation through in-person regional trainings and networking events, webinars, and support to NDEs and other key stakeholders from Least Developed Countries in meeting priority technology needs, in addition to the capacity building activities conducted in response to technical assistance requests.

The CTCN Knowledge Portal:
The CTCN Knowledge Portal was launched in December 2014 with the aim to facilitate knowledge sharing by:

- Serving as a gateway to the CTCN's technical assistance and capacity building services;
- Providing transparent information on current CTCN activities and results;
- Creating a technology "library of libraries", highlighting the most relevant technology information, case studies and publications from knowledge partners around the world.

Knowledge Portal Users and Traffic: Since December 2014, users from 200 different countries (including 155 developing country and island states) have visited the CTCN Knowledge Portal. In recent months, the CTCN Knowledge Portal has averaged 1000 visits per day, or 30,000 visits per month.

Supporting CTCN operations: The intranet, or internal side, of the Knowledge Portal supports CTCN operations including technical assistance and Network management, as well as monitoring and evaluation functionality.

Technical assistance management: The CTCN intranet supports the management and tracking of the technical assistance process, enabling CTCN staff to process requests, monitor progress, and initiate/receive relevant action alerts. An online monitoring system captures this technical assistance information (including country, sector, Response Expert Team, etc.), enabling enhanced monitoring and evaluation functionality, including generation of automatic and up to date visualizations (i.e. graphs and charts).

Matchmaking Assistant: An online matchmaking assistant has also been designed for the KMS. This tool analyses NDE requests and ranks organisations, from both the Consortium and Network, according to their relevant sectoral and geographic experience. The information generated aides the Climate Technology Managers in identifying the best Response Expert Team candidates.

"CTCN has endeavoured to better understand how the technologies and policies at the core of their mission can be communicated so that information seekers get the optimal benefit. CTCN is using new and innovative tools to improve knowledge-sharing and inform the global discussion about the best options to tackle climate change."

Martin Hiller,
Director General, REEEP

Visitors to ctc-n.org can:

- Search information on technologies and related policies from a broad range of adaptation and mitigation sectors, with country, region or global focus
- Read about countries' technical assistance requests, and how CTCN is responding to their needs
- Learn how to contact their country's National Designated Entity in order to convey a technical assistance request
- Engage with experts from around the world through Technology Webinars

CTCN webinars

Connecting people to international technology experts online

In 2015, the CTCN launched a series of webinars to provide easy access to technology experts and practical information on technology deployment, policy and regulatory frameworks. Designed and conducted by CTCN Consortium Partners and Network members according to their areas of expertise, each webinar focuses on a particular adaptation or mitigation sector and their relevant climate technologies. Webinars present technology opportunities and barriers, alongside concrete implementation examples and policy/regulatory improvements that can be replicated in other regions. Webinar participants also have the opportunity to engage experts online after each presentation.

Webinars are available for viewing on the CTCN Knowledge Platform.

Webinars found at:
www.ctc-n.org/capacity-building/ctcn-webinars

Number of webinars	19 WEBINARS
Approx. number of participants	1,430

Organiser:
Regional Gateway for Technology Transfer and Climate Change Action in Latin America and the Caribbean
Date and time:
Friday 27 February 2015 - 10:30am PET
Link:
www.ctc-n.org/calendar/webinars/sustainable-agriculture-adapted-climate-andes

CTCN Knowledge Portal Statistics

KNOWLEDGE PORTAL STATISTICS

WWW.CTC-N.ORG

New users

105,759

Developing country users vs. developed country users

31.5%

vs.

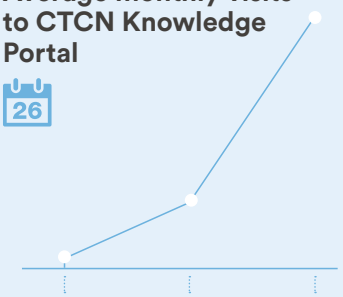
68.5%

Knowledge Portal visits by gender

47.65%

52.35%

Average monthly visits to CTCN Knowledge Portal

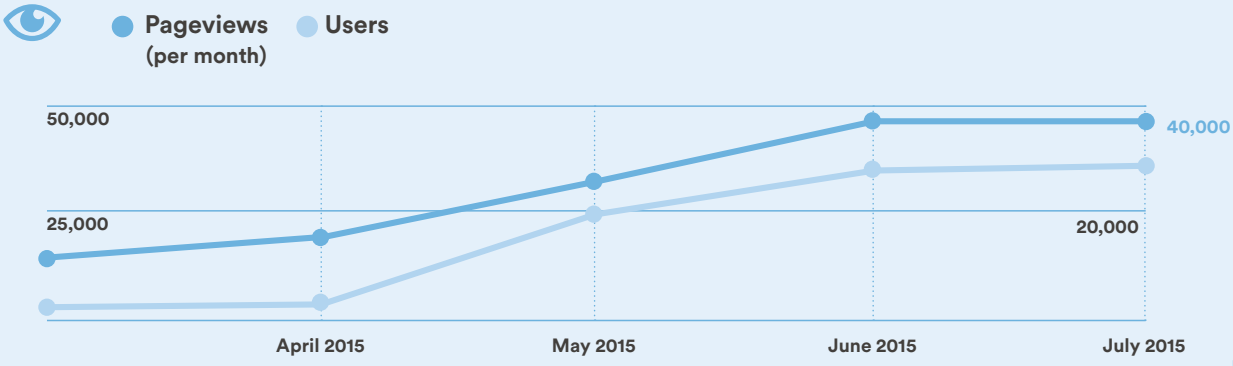


December 2014 – February 2015
1,281

March-May 2015
8,915

June-August 2015
34,206

Overview




Jukka Uosukainen
CTCN


CKB
CLIMATE
KNOWLEDGE
BROKERS
Creating a "Climate Knowledge Grid"
June 22, 2015 – UN City, Copenhagen
REEEP
CTCN

Climate Knowledge Brokers

Creating a Climate Knowledge Grid

As part of its mandate to facilitate knowledge-sharing, the CTCN actively engages with the Climate Knowledge Brokers (CKB), an emerging alliance of 150 leading global, regional and national knowledge brokers specialising in climate change and development information. By design, CKB cuts across different sub-sectors within the climate sphere: adaptation, mitigation, climate finance, energy, agriculture and broader climate-compatible development issues in order to encourage productive links between these different fields of activity.

Climate Knowledge Brokers Workshop

Through its Climate Knowledge Broker Workshops, the CKB offers peer-learning and networking opportunities. The Knowledge Broker Clinics, a regular feature of CKB Workshops, have provided CTCN an opportunity to both receive invaluable input regarding the development of its Knowledge Portal as a "clinic patient" and to impart perspectives from its own experience to other colleagues/patients.

The CTCN hosted the 2015 Climate Knowledge Brokers Workshop in Copenhagen, bringing together 60 participants from around the world. A live-stream panel discussion also increased awareness of the CKB and its activities.The Workshop was jointly organised the Renewable Energy and Energy Efficiency Partnership (REEEP) and the Climate and Development Knowledge Network (CDKN) - active CTCN Network members. Workshop discussions aimed to facilitate collaboration on information sharing, the development of shared tools, and support of open knowledge standards.

Developing common tools: The Climate Tagger

As part of its engagement with the CKB, the CTCN contributed to the development of the Climate Tagger, a suite of tools to help knowledge-driven organizations in the climate and development arenas streamline and catalogue their data and information resources, and connect them to the wider climate knowledge community. Climate Tagger works by applying automated tagging to database, website or online library content in English, French, German, Portuguese or Spanish. The result is a streamlined knowledge system, with key concepts connected to definitions and taxonomies created and vetted by experts and linked to related content within and beyond the system at hand. Climate Tagger is a free tool available to the public, and one that the CTCN utilized in establishing its own Knowledge Portal, www.ctc-n.org. For more information about utilizing Climate Tagger, please visit www.climatetagger.net

CTCN encourages organizations engaged in sharing climate change and development knowledge to join the Climate Knowledge Brokers. For more information, please visit:
> www.climateknowledgebrokers.net

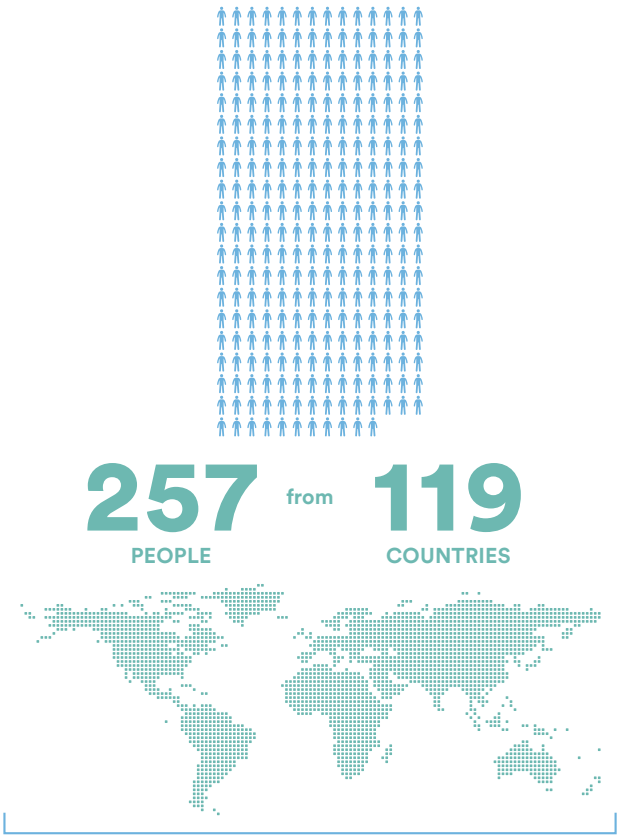
CKB CLIMATE KNOWLEDGE BROKERS

CTCN Regional Forums

CTCN Regional Forums bring together National Designated Entities (NDEs) along with relevant regional and global institutions to strengthen emerging regional networks of NDEs. Forum participants engage in:

- Training (accessing CTCN services, gender mainstreaming, stakeholder outreach)
- Sharing best practices
- Identifying areas for further CTCN support
- Exchange with Network members and other CTCN partners

FIGURE



2014

Newly nominated NDEs were trained on CTCN services, NDE roles and responsibilities, and the technical request-response process. Forums also offered the opportunity for NDEs to share their experiences in setting up national processes for prioritizing technology needs and best practices in utilizing CTCN technical assistance. Linkages between the CTCN and the Technology Needs Assessment processes undertaken by countries were also addressed.

2015

Regional Forums have been designed to support NDEs in identifying and accessing funding for follow-up activities post-CTCN technical assistance or for other climate technology development and transfer. Representatives from sub-regional, regional and multilateral development banks, the Green Climate Fund and other financial mechanisms relevant for climate technologies participated in the forums. The 2015 Forums also provided an opportunity to meet with Network members from the region and abroad.

Engaging with Network Members

NDEs also had the opportunity to interact with Network members and other key stakeholders in order to explore collaboration activities that could complement support provided by the CTCN in their countries.

Dedicated sessions on private sector engagement were organized and led by DNV GL with the dual objective of sharing countries' experiences in engaging the private sector, and raising awareness of the Climate Technology Network among private sector representatives.

"This workshop opened my eyes about the importance of stakeholder engagement."

Participant from CTCN Eastern Europe & Middle East Forum

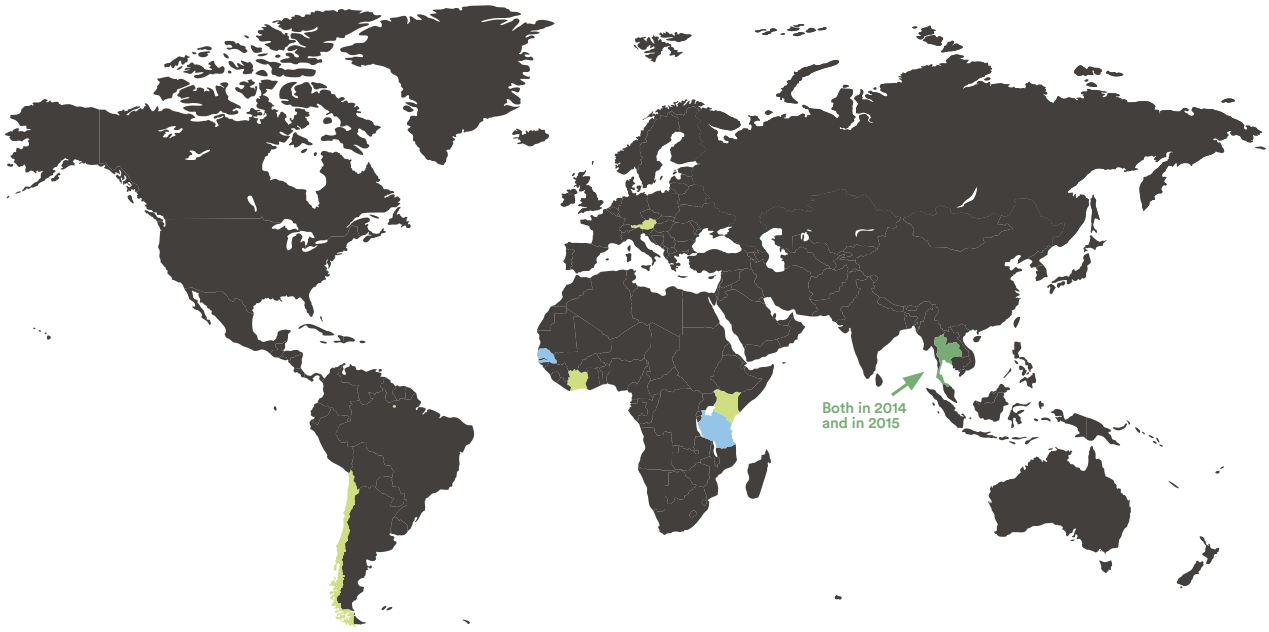
Table and map of NDE events

2014 NDE Forums

Asia	Cha Am, Thailand
Anglophone Africa	Nairobi, Kenya
Latin America & the Caribbean	Lima, Peru
Francophone Africa	Abidjan, Cote d'Ivoire
Eastern Europe & Middle East	Vienna, Austria
Small Island Developing States (SIDS) of the Pacific	Apia, Samoa
SIDS of the Caribbean, Atlantic, Indian Ocean & South China Sea	Bridgetown, Barbados

2015 NDE Forums (through August 2015)

Asia	Bangkok, Thailand
Anglophone Africa	Arusha, Tanzania
Francophone Africa	Saly, Senegal




Ministère Environnement Eaux et Forêts
Direction Nationale de l'Environnement
Atelier National de formulation des requêtes pour le
Mécanisme de Transfert de Technologies Climatiques
Conakry du 02 au 07 Novembre 2015
CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

CTCN Incubator Programme

The Incubator Programme is designed to help Least Developed Countries (LDCs) best benefit from CTCN technical assistance by providing tailored support in identifying technology priorities and developing technical assistance requests within the context of existing national strategies in order to catalyse actions on climate technologies.

The Programme assists LDCs in reinforcing national technology transfer efforts by:

- Identifying priority technology requests that can be conveyed to the CTCN; and
- Strengthening institutional capacities.

The Incubator Programme includes eight modules

Module 1: Definition of work plan
Module 2: Review of in-country projects and efforts
Module 3: Analysis of national policies
Module 4: Mapping of stakeholders
Module 5: Outreach to decision-makers
Module 6: Organisation of national consultations
Module 7: Identification of and access to funding and complementary programs
Module 8: Monitoring and evaluation

The Incubator Programme follows the CTCN country-driven approach in that participation is voluntary and interested NDEs select the capacity building modules which are of most relevance to their country.
The Programme is implemented by CTCN regional Consortium Partners AIT, CSIR, ENDA, and TERI, who provide guidance to NDE teams through both in-country and remote support.

Expected Results for participating countries:

- Better understanding of national policy contexts and priority sectors
- Mapping of existing efforts and stakeholders related to climate technologies at the national level
- A technical assistance request to the CTCN, developed in consultation with relevant actors, in line with national priorities
- Strengthened capacities to identify and access funding mechanisms for financing follow-up actions to CTCN technical assistance
- Acquired skills to measure the country's progress and demonstrate concrete achievements on climate technology transfer

Incubator Programme

13 LDCs have formally applied to the Incubator Programme.

Implementation has started in 11 countries.

1. Bangladesh
2. Benin
3. Central African Republic
4. Equatorial Guinea
5. Gambia
6. Guinea
7. Malawi
8. Mali
9. Nepal
10. Rwanda
11. Senegal
12. Tanzania
13. Uganda

"I learned a lot about the mechanisms of adaptation and mitigation under the UNFCCC."

Participant from Francophone Africa

CHAPTER 5

CTCN FINANCIAL OVERVIEW

"It was the best training I participated in, during my 30 years of my professional life."

CTCN Forum Participant from Asia

CTCN Financial Overview

Period: 2013-2015

All figures are in US Dollars

TABLE 1

CTCN Voluntary Contributions by Donor – as on 30 September 2015

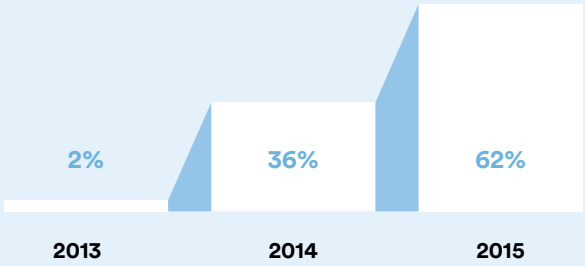
8,499,850	Norway
6,784,261	European Union
5,361,461	Denmark
2,451,461	Canada
2,092,000	United States of America
1,856,708	Japan
586,207	Germany
400,000	Switzerland
216,640	Finland
117,647	Ireland
28,366,235	Subtotal
1,800,000	Global Environment Facility
30,166,235	**Total**

Notes:
1. Figures include USD 27,4 million received through the United Nations Environment Programme (UNEP), US$ 2,2 million through the United Nations Industrial Development Organization (UNIDO) and US$ 0.54 through the CTCN Consortium Partner, National Renewable Energy Laboratory (NREL).
2. Figures do not include cash and in-kind contributions from the CTCN Consortium

TABLE 2

CTCN Expenditure by Year

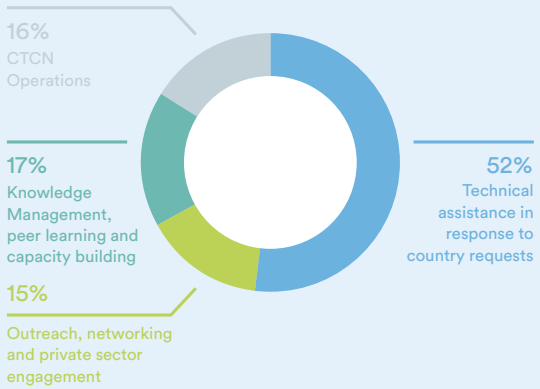
2013-2015 projected expenditure: USD 18,9 million



Note:
1. Expenditure include obligations, direct cost, indirect cost as well as projections up to December 2015

TABLE 3

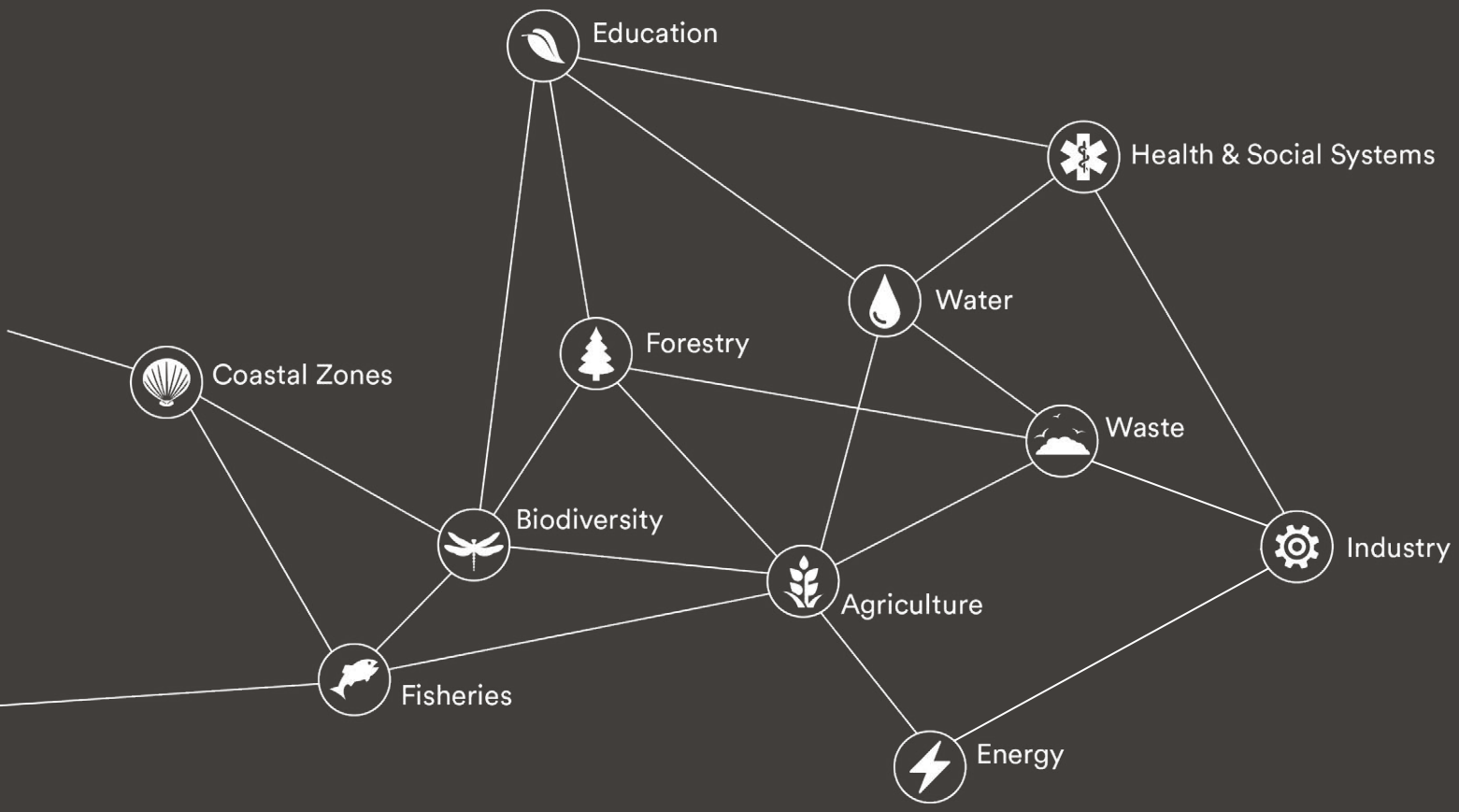
CTCN Expenditure by Service Area



Notes:
1. Figures are net of Programme Support Cost (indirect cost)
2. The indicative distribution of 2015 expenditure by service areas includes obligations, direct cost and projections up to December 2015

CTCN promotes environmentally sound practices globally and in its own activities. This report is printed on paper from sustainable forest. The paper is chlorine-free. Our distribution policy aims to reduce CTCN's carbon footprint.

Written by Karina Larsen with Irma Juskenaite, with thanks to the CTCN team for their collaboration.
Photos: www.robertharding.com / UNFCCC / www.thinkstock.com Design: Stephan Csikós, Eelco Kruizinga, Ton Persoon, Frodo Schering.



We have the technological capability to meet our energy and production needs in a cleaner, more efficient way and to adapt to a changing climate. The CTCN is putting that capability in the hands of countries so that they can address their climate change priorities.

Join the CTCN

The Climate Technology Centre seeks new Network members from all geographic regions with an array of sectoral experience. Visit us online at http://ctc-n.org to learn more about joining the Climate Technology Network.

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

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