Session 1- Setting the stage

Findings

CTCN officials Jason Spensley and Federico Villatico noted that innovation is a basic need for developing countries to address climate change, and that first-of-a-kind approaches can be deployed to support and address that need by the CTCN through its Technical Assistance (TA) interventions. Heleen de Coninck (CARISMA) helped to set the stage for the day by drawing a distinction between Research and Development (R&D) activities as more cutting-edge and explorative whereas discussions of technological innovation would focus on those technologies that were market-ready. Ms. De Coninck’s presentation also sought to highlight the key elements of successful collaboration, including an understanding of how collaboration takes place and in what shape (based on a mapping exercise of ongoing collaboration), considering the importance of political momentum, a sharper focus on impacts than on measurable outputs, not underestimating the value of mutual trust, and anchoring activities in the mutual interest of all parties at an early stage. The CARISMA project further noted that in the UNFCCC, there is only one place to talk about transformational change: the Technology Mechanism.

Libasse Ba (ENDA) underscored the importance of including indigenous technologies and approaches in the working definition of climate technology. Henry Neufeldt (ICRAF) looked to define first-of-a-kind (FOAK) technology, and suggested the consideration of “innovative technology” could be useful. The unintended impacts of innovation were discussed, including uncontrolled system change, which the TEC proposed could be addressed through an analysis of technologies to assess their risk of triggering such a change. It also noted that there is no innovation without participation (integration of technologies in our society through engagement and ownership).

Presentations

**Overview of existing approaches – The CARISMA Project** (10 min)
- Heleen de Coninck, CARISMA

**Overview of CTCN processes + needs of developing countries** (15 min)
- Jason Spensley and Federico Villatico, CTCN

**Key findings from the TEC Special Event on technology innovation** (10 min)
- Robby Berloznik, TEC
International collaborations in research and innovation for climate change mitigation: Existing approaches

Based on work by Radboud University, CEPS and I4CE
Heleen de Coninck, Soeren Lindner

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Mapping and observations R&I cooperation

Potential benefits to collaborators
- Advance climate technology transfer across borders
- Build capabilities and mutual understanding
- Deployment of climate technologies help to meet NDCs
- Collaborations strong driver of decarbonisation

Envisioned contributions
- Understand how international technology (R&I) cooperation takes place
- Understand the drivers of depth and form of the cooperation
- Increase awareness on bilateral collaborations and involvement of private sector

Note: not exhaustive, documentation sometimes limited
Approach

Mapping of international climate change mitigation research and innovation collaboration between the European Union and developing countries

Approach
About 30 government-to-government, industry-to-industry and region-to-region initiatives
5 case studies including interviews with operators
Workshop to discuss preliminary results and what to do with them (Feb 20)

Selection criteria
Large-scale, long-term R&I initiatives
R&I component
Mutual technology cooperation and mutual business interest
Observation:
“Additional objectives beyond the initiatives’ aim”

- Core objective may be climate mitigation, but focus or motivation of partners may differ
- At the political level projects are seen as opportunity to initiate dialogue and so specific goals may become less important

Issue:
Real drivers and motivations behind initiatives may not be as clear-cut as expressed in project proposals or memoranda

Recommendation:
- Transparency: objective of both parties should be made explicit
- Clearly communicate project focus, roles and responsibilities
- Try to align political drivers with mitigation
Observation:

- Focus on project measurable “output” instead of “outcome and impact” among project manager(s) and sponsor(s)

Issues:

- Outputs are measurable and often within control of project leaders, whereas outcomes reflect changes in policy, priorities or strategy and can therefore take time to come to effect

Recommendation:

- A stronger “outcome and impact focus” during project design, implementation, and follow-up so that collaboration projects move closer towards making a difference in policy and private sector decision making
Observation:
- Long-term projects run in several periods are more successful in transforming a technology from the innovation- to implementation and market diffusion stage
- Trust is often key to a successful collaboration

Issues:
- Projects need a “trust-building phase”, and often after this phase a sustained collaboration on technology innovation can begin.

Recommendation:
- Focus on trust building in which free knowledge exchange can occur.
- Stimulate prolonging collaboration beyond the project’s first phase. A more formal framework allowing for long-term research may help.
Observations:

- Industries are often connected globally and have their own research units. May be suited to participate in international collaborations for R&I, in particular pre-IPR

- Firms/industries are hesitant to engage in collaboration if profit gain is uncertain

- Firms globally are looking actively for new technology markets, developing economies may offer those

Issues:

- Opposing and conflicting ideas of potential project partners often hinder a successful engagement in mitigation collaboration

Recommendations:

- Find mutual benefits, highlight those and start building a relationship on what both partners have in common

- Focus on trust building in which free knowledge exchange can occur.
On www.carisma-project.eu, soon to be found:

- Policy briefs with findings and recommendations on R&I cooperation for international institutions and for governments
- Background report on “Examples of international climate change mitigation research and innovation collaboration between the European Union and developing countries”
Overview of CTCN technical assistance to support ‘first of a kind’ technologies

Jason Spensley & Federico Villatico

Copenhagen, Denmark

22 May 2017
CTCN Technical Assistance

Climate technology:
- Skill, knowledge or equipment
- Hardware, software or ‘orgware’

Requests submitted via National Designated Entity (NDE)
Zimbabwe: Integrating Climate-Smart Agriculture technologies into University and extension worker curricula

What happened:

- Curriculum for Zimbabwe’s agriculture colleagues on Climate Smart Agriculture, contextualised to Zimbabwe
- Approved by the Ministry of Agriculture
- Training of trainers (university faculty and Ministry of Agriculture trainers)

“First of a kind”:

- New ‘nationally owned’ curricula on CSA technologies
- Increased deployment of new technologies in Zimbabwe, adapted from known technologies elsewhere
Dominican Republic: An Early Warning Communication Protocol for Santo Domingo

What happened:

- Government leadership for improving early warning of extreme weather
- Improved inter-institutional coordination for meteorological information, interpretation, and communication to public
- Recommended and advanced strategy for using new communication technologies

What is “First of a kind”:

- Identified new and more relevant communication technologies, including mobile phone app
- Brokering private financing for development and scale up of communication
What happened:
- Advised on design of crop drying and storage technologies for local conditions
- Strengthened project financial case, including the business plan and the cash flow model, and coached the entrepreneur
- Identified and facilitated private investors

What is “First of a kind”:
- International private investment in large scale adaptation and deployment drop drying and storage technologies for local conditions
Uganda: Pay-As-You-Go mechanism for domestic solar PV systems and improved cook stoves

What happened:
- Sub-Saharan Africa is experiencing a wave of first of a kind payment schemes delivering domestic solar PV systems using mobile phones and Pay-As-You-Go systems;
- The Pay-As-You-Go system avoids high up-front investment costs, allowing rural low-income households to gain access to services that they otherwise would not have been able to afford;
- Together with private sector entities, CTCN will identify and analyse barriers for Pay-As-You-Go services and provide solutions to accelerate the market in Uganda.

What is “First of a kind”:
- Technology (Pay-As-You-Go):
  - Leapfrogging to modern energy systems i.e. off-grid PV, smart phones;
- Country application: boosting local market (Kenya is a pioneer for Pay-As-You-Go services).
What happened:
- Preparation of a pilot conversion program in current agro-industry sector (HCFCs, HFCs)
- Capacity building for decision makers on policy and regulatory frameworks

What is “First of a kind”:
- Private sector engagement: real commitment of participating companies through the signature of replacement agreements;
- Greening the supply chain: the pilot will be used to create a long-term platform for accessing all the information related to the introduction of alternative refrigerants with zero or low GWP.
Mainstreaming gender inclusive features in climate resilient energy policies and practices in the ECOWAS countries

What happened:
- Multi-country Intervention on Women in Sustainable Energy among ECOWAS Countries*;
- CTCN supports ECOWAS Member States to set out actions and principles to ensure that women and men benefit equally in the region’s energy interventions.

What is “First of a kind”:
- Gender issue embedded in sustainable energy (in 15 countries!) through:
  - Investment Promotion: Women’s Economic Empowerment through business development and incubator programs;
  - Capacity Building: to operationalize Regional Gender and Energy policies as well as national strategies.

*: (Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo)
Thank you
Kenya: Catalysing low cost green technologies for sustainable water service delivery in Northern Kenya

What happened:

- Three water technologies prioritised according to their adaptation to targeted areas
- Draft a pre-feasibility study to determine the technical, economic and social feasibility of the three selected technologies
- The development of a PPP business model in collaboration with relevant stakeholders

What is “First of a kind”:

- Bring public and private actors together to strengthen climate smart water management technologies in Kenya
- Strengthen environment for private sector engagement in water supply
Nepal: Design of a National Agroforestry Policy

What happened:
- Kathmandu Declaration on Agroforestry (2015) endorsed by Ministries of Agriculture and Forestry recommended development of National Agroforestry Policy
- Working with government, academia and private producers to develop the policy and train specialists
- Comparing policy development experience of India, including the challenges encountered

What is ‘First of a kind’
- First policy of this type would be approved by the concerned Ministries in Nepal and ratified as per national processes
- High potential for scale up of technology deployment
Thailand: fostering Green Buildings for a low carbon society

What happened:

- Technology assessment in line with the current Building Energy Code (BEC) standard and future goals;
- Capacity building on green building design, construction, technology implementation, retrofits, operation and maintenance.

What is “First of a kind”:

- In country approach to building sector: wide scale adoption of energy efficient technologies to meet prevalent BEC leading to energy efficiency;
- Attract Private sector investment into green building sector in a developing country.
Ghana/Kenya/Mauritius/Namibia: Green cooling Africa Initiative (GCAI)

What happened:

- Robust GHG Inventory for the Cooling sector established;
- Analysis of the technological gap between BAU and Internationally available best options;
- Technology roadmap, Policy and regulatory framework recommendations.

What is “First of a kind”:

- Multi-country intervention from different sub-region involving public and private sector;
- Specific advantage of the economies of scale to facilitate innovation and sustainable industrial development in the RAC sector.
Accelerating technological innovation for a low-emission and climate resilient future

Mr. Robby Berloznik
Technology Executive Committee
22 May 2017
Overview

1. Technology Executive Committee (TEC)
2. TEC work on technology innovation
3. Special event on innovation and climate change
4. TEC work on enhancing RD&D financing
5. Conclusions
Technology Executive Committee (TEC)

• Policy arm of Technology Mechanism, established 2010

• Undertakes analysis and provides policy recommendations to enhance climate technology development and transfer

• 20 expert members

• Impact:
  o Delivers recommendations to COP on policies for enhancing climate tech action
  o Prepares policy briefs on key technology issues
  o Stimulates cooperation between key national and international actors
Mandates

Paris Agreement, Article 10.5:

*Accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change and promoting economic growth and sustainable development*

COP 21 requested TEC and CTCN, in supporting implementation of Paris Agreement, to undertake further work on technology research, development and demonstration (RD&D)
To respond to these mandates, TEC is building on previous work:

2014: Thematic dialogue on RD&D
2015: TEC Brief on national systems of innovation, Recommendations to COP 21

Current workplan activities:

2016: Analysis of RD&D financing
2017: Special event on innovation and climate change
2017: Technical paper on enhancing RD&D financing
Special event: innovation and climate change
Special event on innovation and climate change

- May 12. Bonn UN Climate Conference. Organized by TEC.
- Drew on inputs from CTCN Advisory Board chairs and expert stakeholders
- Focus: *How technological innovation can support implementation of NDCs and mid-century strategies*

- Aimed to:
  - Highlight role that technological innovation plays in addressing climate change
  - Highlight how national policies and international cooperation on tech innovation can accelerate implementation of NDCs and mid-century strategies
  - Showcase experiences and good practices on tech innovation that countries can replicate and scale-up
Video
Some points raised by participants:

• There is not a one-size fits all approach
• We cannot focus on incremental efforts; we have to explore how to effect transformational change
• We need to take a systems approach, considering how actors, institutions, regulations, policies, and finance come together
• Finance plays a key role, and we have to look at both domestic and international sources. Domestic financing builds ownership
• Without effective policies and regulations we will not achieve the transformation we desire. On policies, we have to think about both supply-push and demand-pull policies
• Political leadership is key. It creates policies and incentives for innovation
• We must engage the private sector
Special event on innovation and climate change

Next steps, TEC will:

• Prepare a policy brief on tech innovation for implementing NDCs and mid-century strategies, for launch at COP 23

• Provide recommendations to COP 23 on innovation policies which countries may draw upon to scale up low-emission development and increase resilience

• Consider areas for possible further work on innovation and RD&D
This week TEC will publish a technical paper on enhancing RD&D financing:

- Explores trends in financing RD&D of climate technologies
- Identifies ways to enhance this financing, including by scaling up financing and making it more effective

Paper was developed by TEC, with inputs from CTCN Advisory Board chairs and expert stakeholders
In 2017, TEC has undertaken significant work to analyze innovation and RD&D issues. CTCN Advisory Board Chairs and stakeholders were actively involved in this work.

TEC’s key focus is on how countries can enhance these processes to scale up and speed up NDC implementation.

In second half of 2017, TEC will produce recommendations to COP 23 for enhancing climate tech innovation. It will also launch a policy brief on innovation at COP 23.

The TEC looks forward to continuing to engage with the CTCN and stakeholders in its future work on innovation and RD&D.
United Nations Framework Convention on Climate Change

Thank you

www.unfccc.int/ttclear/tec