



UNFCCC TEC Bulletin

A Summary Report of the Sixth Meeting of the Technology Executive Committee (TEC) of the UN Framework Convention on Climate Change (UNFCCC)

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SUMMARY OF THE SIXTH MEETING OF THE TECHNOLOGY EXECUTIVE COMMITTEE OF THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE: 26-28 JUNE 2013

The Technology Executive Committee (TEC) of the UN Framework Convention on Climate Change (UNFCCC) held its sixth meeting (TEC 6) from 26-28 June 2013, in Bonn, Germany. The meeting brought together approximately 30 participants, including TEC members, as well as 15 observers from governments, intergovernmental organizations, civil society, academia and the private sector. The meeting was also broadcast live via the Internet over the UNFCCC Technology Information Clearinghouse (TT:CLEAR) website, allowing for interaction with off-site stakeholders who participated via social media during a thematic dialogue on research, development and demonstration (RD&D) of environmentally sound technologies.

At TEC 6, in addition to the aforementioned thematic dialogue, TEC members: heard updates on the results of the first Climate Technology Centre and Network (CTCN) board meeting and from the UN Environment Programme (UNEP) and the UNFCCC Secretariat regarding ongoing work and support for activities relating to technology needs assessments (TNAs); discussed nascent and possible future TEC collaborations with other relevant institutional arrangements under and outside the Convention; and discussed two technology brief drafts on technology roadmaps (TRMs), and on results of TNAs and the integration of TNAs with nationally appropriate mitigation actions (NAMAs) and national adaptation plans (NAPs).

Outcomes of the meeting included a decision to submit letters inviting collaboration to the Global Environment Facility (GEF), the Least Developed Countries (LDCs) Expert Group (LEG), and the Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention (CGE). Participants also decided that a letter should be sent to the Green Climate Fund (GCF) Board after its current meeting, during which decisions on the GCF's collaboration with other relevant institutional arrangements under the Convention are being taken.

The TEC also: agreed to begin collaborating with the Adaptation Committee on an adaptation technology brief; set up a task force on long-term financing mandated to, *inter alia*, review existing work on long-term finance issues as they relate to technology; agreed to revise the draft technology briefs based on feedback from the meeting; and hold a workshop at TEC 7 to discuss TNA-related matters.

A BRIEF HISTORY OF THE TEC

The TEC, which was established by the UNFCCC at the 16th session of the Conference of the Parties (COP 16) in Cancún, Mexico, is one of two components of the new Technology Mechanism of the Convention. The second component is the CTCN, also established at COP 16.

The TEC is comprised of 20 high-level expert members who are elected by the COP and serve in their personal capacities. The TEC reports on its activities and the performance of its functions to the COP through the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI). The functions of the TEC include:

- providing an overview of technological needs, and analysis of policy and technical issues related to the development and transfer of technologies for mitigation and adaptation;
- recommending actions to promote technology development and transfer;
- recommending guidance on policies and programme priorities related to technology development and transfer with special consideration given to LDC parties to the UNFCCC;

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- promoting and facilitating collaboration between governments, the private sector, nongovernmental organizations, and academic and research communities on the development and transfer of technologies;
- recommending actions to address barriers to technology development and transfer to enable enhanced action on mitigation and adaptation;
- cooperating with relevant international technology initiatives, stakeholders and organizations, and promoting coherence and cooperation across technology activities, both under and outside the Convention; and
- catalyzing the development and use of TRMs or action plans at the international, regional and national levels via cooperation between stakeholders, such as by developing best practice guidelines to facilitate the development of roadmaps or action plans.

First meeting of the TEC: The TEC's first meeting took place in September 2011 in Bonn, Germany. The Committee addressed organizational matters and elaborated modalities and procedures for the TEC, which were subsequently adopted at COP 17.

Second meeting of the TEC: This meeting was held in February 2012 in Bonn, Germany, and saw the development of the TEC's rolling workplan for 2012-2013. Work also began on modalities for linkages with other relevant institutional arrangements under and outside the Convention. Furthermore, the Committee discussed the engagement of stakeholders in its work.

Third meeting of the TEC: This meeting took place in May 2012 in Bonn, Germany, and included a thematic dialogue with stakeholders on enabling environments and barriers to technology development and transfer. The Committee also considered progress on the implementation of its 2012-2013 workplan and continued work on modalities for linkages with other relevant institutional arrangements under and outside the Convention.

Fourth meeting of the TEC: This meeting took place in September 2012 in Bangkok, Thailand, and continued the thematic dialogue, which began at TEC 3 on enabling environments and barriers to technology development and transfer. The Committee also considered progress on the implementation of its 2012-2013 workplan, in relation to, *inter alia*: TRMs; relevant work of other institutions under and outside the Convention; TNAs; and possible topics for technical papers. It also adopted key messages to forward to COP 18 in Doha, Qatar, on enabling environments and barriers to technology development and transfer, TRMs and TNAs.

The Committee also agreed to organize an expert meeting on TRMs focusing on technologies for adaptation to climate change. The IISD Reporting Services summary of the fourth meeting of the TEC can be found at: <http://www.iisd.ca/download/pdf/sd/ymbvol205num1e.pdf>.

Expert meeting on TRMs: This meeting took place on 25 March 2013, directly preceding the fifth meeting of the TEC, and aimed to: share good practices and lessons learned from developing and using TRMs for mitigation and adaptation; identify specific needs and actions that could assist parties in developing and using TRMs for adaptation; identify the potential role of the TEC and TRMs in supporting enhanced action on adaptation to climate change; and explore ideas on how the TEC and other UNFCCC bodies or processes could

potentially catalyze development and use of TRMs to stimulate mitigation and adaptation efforts. The IISD Reporting Services summary of this meeting can be found at: <http://www.iisd.ca/download/pdf/sd/crsvol205num4e.pdf>

Fifth meeting of the TEC: This meeting took place in Bonn, Germany, from 26-27 March 2013. The meeting discussed, *inter alia*: outcomes of COP 18 and implications for the TEC's work; linkages between the TEC and the CTCN and other arrangements under and outside the Convention; TRMs; a new thematic dialogue on RD&D; and work and support for activities relating to TNAs. The TEC also agreed to begin work on technology briefs on: TRMs; adaptation technologies; and the results of the TNAs and the integration of TNAs with NAMAs and NAPs. The IISD Reporting Services summary of this meeting can be found at: <http://www.iisd.ca/climate/tec/tr-tec5/>

SUMMARY OF THE MEETING

TEC Chair Antonio Pflüger opened TEC 6 on Wednesday morning, 26 June 2013.

ORGANIZATIONAL MATTERS

ADOPTION OF THE AGENDA AND MINUTES OF THE LAST MEETING: The TEC adopted the minutes of its fifth meeting (TEC/2013/6/2), as well as the agenda for TEC 6 (TEC/2013/6/1).

INFORMATION ABOUT NEWLY APPOINTED

MEMBERS: Chair Pflüger introduced the following new TEC members: Amel Zouaoui, National Centre for Cleaner Technologies Production, Algeria; and Eduardo Noboa, Under-Secretary for Climate Change, Environment Ministry, Ecuador.

ORGANIZATION OF WORK OF THE MEETING: Wanna Tanunchaiwatana, UNFCCC Secretariat, explained that viewers of the live TEC 6 webcast would be able to submit questions remotely via social media.

BRIEF UPDATE BY TEC MEMBERS AND THE SECRETARIAT ON THEIR PARTICIPATION IN OTHER RELEVANT MEETINGS AND EVENTS

THE SECOND SESSION OF THE AD HOC WORKING GROUP ON THE DURBAN PLATFORM FOR ENHANCED ACTION: Pierre Bouchard, UNFCCC Secretariat, provided an overview of the outcomes of the June sessions of the *Ad Hoc* Working Group on the Durban Platform for Enhanced Action (ADP) and the Subsidiary Bodies relevant to the TEC. On ADP Workstream 1 (2015 agreement), he highlighted the call for existing institutions, such as the TEC and the CTCN, to be strengthened and anchored in the 2015 agreement. On Workstream 2 (pre-2020 ambition), he stressed the need to improve existing linkages among institutions. He indicated that the ADP requested the Secretariat to prepare an overview of the mandates and progress of institutions and mechanisms under the Convention to inform the ADP's work, stressing that this overview will cover the TEC's activities. On the work of SBSTA, he underlined the role of national designated entities (NDEs).

OTHER RELATED EVENTS: TEC member Omedi Moses Jura reported on his participation in the African regional workshop on promoting international collaboration to facilitate the preparation, submission and implementation of NAMAs, which was organized by the UNFCCC Secretariat and held from 16-19 April 2013, in Maseru, Lesotho.

TEC Vice-Chair Gabriel Blanco described a presentation he made at the third meeting of the Adaptation Committee on the TEC's work and areas for collaboration between the two bodies. He added that in a follow up letter, the Chair of the Adaptation Committee indicated the Committee's willingness to move forward with the topics identified by the TEC for collaboration on technology for adaptation.

He then reported on the Climate and Development Knowledge Network-funded Climate Technology and Development project's final conference, held in Bonn, Germany, on 25 June 2013, which aimed to refocus national and international policy agendas to improve prospects for enhancing climate change-relevant technology development, diffusion and transfer. He highlighted policy briefs and case studies produced as part of this project.

Chair Pflüger provided an overview of his presentation made at the capacity building session of the June climate talks, stressing the need to reshape capacity building to better take into account local circumstances. Noting that capacity building and technology transfer are intrinsically linked, TEC member Griffin Thompson underscored the need to integrate them.

MATTERS RELATING TO THE CTCN

UPDATE ON THE FIRST MEETING OF THE ADVISORY BOARD OF THE CTCN: Chair Pflüger informed that, at its first meeting in May 2013, in Copenhagen, Denmark, the CTCN Advisory Board elected Griffin Thompson (United States) as Chair and Fred Machulu Onduri (Uganda) as Vice-Chair. He highlighted discussions on the CTCN's modalities, procedures and programme of work, as well as on the role of NDEs.

TEC member and CTCN Chair Thompson indicated that questions on finance and outreach dominated discussions at the first CTCN Advisory Board meeting, and underlined the importance of communicating the CTCN's role, especially on the topic of NDEs. He stressed that many developing countries had yet to designate NDEs largely because no information had been disseminated on their roles and responsibilities, and noted an informal UNEP information document on the topic is to be circulated covering these issues. He concluded by explaining that at its September 2013 meeting, the Advisory Board is scheduled to approve prioritization criteria for NDE requests for assistance, and approval criteria for membership in the Network.

TEC member Seyed Mohammad Sadeghzadeh said network membership criteria is a political decision and should be made by the COP. TEC member Kunihiko Shimada underscored that it is not the TEC's role to work on procedures and modalities of the CTCN.

TEC member Nagmeldin Goutbi Elhassan said coherence and cooperation between Technology Mechanism bodies is key, and expressed hope that the TEC can continue to receive important information from, as well as provide information to, the CTCN.

PROCEDURES FOR PREPARING A JOINT ANNUAL REPORT OF THE TEC AND THE CTCN:

Chair Pflüger introduced the document titled "Procedures for Preparing a Joint Annual Report by the TEC and the CTCN" (TEC/2013/6/3). Bert ver der Plas, UNFCCC Secretariat, described the two options outlined in the paper for discussion, namely either an introduction with annexes for both the TEC and the CTCN, or an introduction with addenda for both the TEC and the CTCN.

Shimada noted the importance for the COP that the report be finalized as early as possible to ensure availability in all UN languages.

Thompson, echoed by TEC members Elhassan, Krzysztof Klincewicz and Matthew Kennedy, said the Technology Mechanism is responsible for creating linkages, and the report needs to reflect that the TEC and CTCN have a common bond and objective under the Technology Mechanism. He added that in addition to individual sections on the two bodies, the annual report should include a joint section on main messages coming out of the bodies and on their way forward.

Kennedy further highlighted that the report is an opportunity to present a cohesive approach to the Technology Mechanism and should be accessible to readers that many not have intimate knowledge about its bodies. He proposed that the TEC and CTCN Chairs draft such an introduction.

Noting the challenge of having a report that is agreeable to both bodies, TEC member Jukka Uosukainen suggested that if it were permissible for only one body to approve the report, it should be the TEC, which reports to the COP, and not the CTCN, which is responsible to countries.

TEC member Noboa suggested organizing the report by topics and fields rather than by institution.

Vice-Chair Blanco suggested shifting the January to December reporting and work plan year from July to June in order to make deadlines more manageable.

Chair Pflüger agreed to work with Vice-Chair Blanco and the CTCN Chair and Vice-Chair on an initial draft of the report for circulation. He then called on TEC members to communicate to him any key messages to be included in the TEC and joint statement sections of the report.

OVERVIEW OF ONGOING WORK AND SUPPORT FOR ACTIVITIES RELATING TO TNAS

UPDATE BY UNEP ON THE CURRENT SUPPORT AND IMPLEMENTATION OF TNAS: Vice-Chair Blanco introduced this topic, explaining that UNEP coordinated and oversaw, on behalf of the GEF, the preparation of TNAs by a group of 36 countries, upon which the following presentation would be based.

Zitouni Ould-Dada, UNEP, presented on lessons learned from UNEP's experience assisting countries with TNA development. He highlighted that while countries identified a diversity of needs, nearly half of the mitigation areas prioritized by countries were energy-related, while on adaptation, agriculture and water dominated. Ould-Dada drew attention to the four guidebooks produced in 2012 on TNAs and Technology Action Plans (TAPs). He then outlined examples where TNAs and TAPs have been further used to prepare national climate change strategies and develop enabling frameworks for renewable energy expansion. On lessons learned, he underlined the importance of, *inter alia*: linking TNAs and TAPs to national sustainable development plans; identifying key local experts to ensure the best possible results; and giving adequate time and assistance where capacity is lacking.

He indicated that the success of this phase of TNA and TAP support has led the GEF to fund a second round of support for an additional 24 countries, which will also see the improvement of existing methodologies and guidebooks, as well as the development of new ones, while strengthening networking activities to better develop and use TNAs and TAPs.

UPDATE BY THE SECRETARIAT ON THE PREPARATION OF THE THIRD SYNTHESIS REPORT ON TNAs: Vladimir Hecl, UNFCCC Secretariat, said the third TNA synthesis report will be based on 32 TNAs and 30 TAPs, but lamented that to date, not all of these have been made available for the Secretariat to review. He stressed the difficulty of synthesizing the several thousand pages of TNAs and TAPs by the end of August 2013.

Supported by Klincewicz, Uosukainen stated that although the report will be a synthesis, to be meaningful, it should explore common barriers to and facilitators of technology transfer and uptake in a detailed manner. TEC member Wang Can suggested a new section identifying how the third report differs from the second and that the report focus on enabling factors.

PREPARATION OF TECHNOLOGY BRIEFS

DRAFT TECHNOLOGY BRIEF ON THE RESULTS OF THE TNAs AND ON THE INTEGRATION OF TNAs WITH NAMAs AND NAPS, PREPARED BY THE TNA TASK FORCE: Vice-Chair Blanco described the draft Brief on TNAs (TEC/2013/6/4) and its conclusions, and explained that the task force decided to merge the two originally-planned briefs into one, addressing both the TNA concept and results, and linkages to other planning tools under the Convention. He called on the TEC to formulate proposals to enhance interactions among existing planning tools to the COP, and invited comments from TEC members to inform the final version of the Brief for dissemination at COP 19.

Many TEC members supported shortening the Brief and some disagreement existed over the decision to write one brief instead of two. Kennedy emphasized the need to ensure consistency among the TEC's deliverables. Chair Pflüger suggested that key messages be summarized at the outset of the Brief.

On branding and communication, Kennedy called for clearly identifying the Brief's target audience. Noting donors can only finance approximately 10% of investments identified in TNAs, Chair Pflüger underscored that the target audience also includes the finance community and the private sector. Klincewicz suggested that the Brief's title be made more accessible to a wider audience.

On interlinkages, Elhassan called for a focus on integrating results, as opposed to processes, of TNAs in NAPs and NAMAs. Shimada stressed that developing countries are experiencing "reporting fatigue" and urged a focus on implementation. Supported by Sill and Jura, Thompson recommended "ground truthing" the draft Brief by circulating it to NAMA, NAP and TNA practitioners to get their feedback regarding its usefulness on the ground.

DRAFT TECHNOLOGY BRIEF ON TRMs, PREPARED BY THE TRM TASK FORCE: Klincewicz introduced the draft TRM Brief (TEC/2013/6/5), describing the process used to develop it and the rationale behind its structure and content. He said the aim was to inform, demonstrate and promote good practice, and that it was authored for an audience of both parties and non-specialists who may still need to be convinced of the benefits of TRMs, all of which impacted the level of detail of the Brief, use of specialist terms and formatting.

Thompson said this Brief should be thought of as a component of a larger set of briefs on implementation. Vice-Chair Blanco underlined that the TRM and TNA Briefs offer many similar conclusions, a point he said should be highlighted in both papers. He cautioned, however, that the two drafts presented are different in many ways, and must be made more consistent and coherent before presentation to the COP.

Uosukainen, supported by Shimada, Klincewicz and Kennedy, suggested adding key messages to the TRM Brief. TEC members disagreed about whether these should be recommendations or key messages, and who they should be aimed at. Vice-Chair Blanco emphasized the need for reports to add value.

POSSIBLE TOPICS AND KEY ELEMENTS FOR TECHNOLOGY BRIEFS ON ADAPTATION, PREPARED BY THE LINKAGE TASK FORCE: On Thursday morning, the TEC resumed with Chair Pflüger explaining that the Linkage task force identified the following possible topics for technology briefs on adaptation: crop management; land management; and systematic observations. He recalled the Adaptation Committee's letter welcoming these suggestions. On next steps, while some TEC members, including Thompson, Uosukainen and Kennedy, preferred collaborating with the Adaptation Committee to decide on which topics to focus, Vice-Chair Blanco, supported by Zouaoui, argued that the TEC should not wait to begin work on the adaptation technology brief. Klincewicz and Elhassan suggested the TEC begin a dialogue with the Adaptation Committee, and could start work by defining the terms of reference, scope and target audience of the brief. Shimada and Jura suggested the adaptation brief address the issue of water management, which underlies crop and land management.

On the topic of future technology briefs, Sadeghzadeh suggested not limiting them to adaptation technologies. Klincewicz and Kennedy added that many adaptation technologies have mitigation co-benefits. Shimada and Sadeghzadeh underlined that systematic observations are at the crossroads between mitigation and adaptation.

After informal consultations, TEC members agreed that the Chair be mandated to respond to the Adaptation Committee's letter, proposing that the TEC task force hold a conference call with the Adaptation Committee to discuss the brief. He added that a workshop would then be convened, inviting relevant stakeholders, to define the topic of the first adaptation brief, which would then be drafted and presented at a side event during the Subsidiary Bodies meeting in June 2014.

Wang suggested, and the TEC agreed, that a new task force on adaptation be set up. Barbara Black, World Business Council for Sustainable Development, indicated her and other stakeholders' willingness to contact relevant private sector representatives to collaborate with the TEC on the brief.

Shimada noted that on mitigation, focused briefs on many technologies already exist, with Chair Pflüger adding that the International Energy Agency (IEA) alone has created 53 energy technology briefs thus far, and that discussion of topics for a mitigation brief will be placed on the agenda for the next meeting.

COLLABORATION WITH OTHER RELEVANT INSTITUTIONAL ARRANGEMENTS UNDER AND OUTSIDE THE CONVENTION

LINKAGES WITH OTHER RELEVANT INSTITUTIONAL ARRANGEMENTS UNDER THE CONVENTION: Chair Pflüger reported back on the progress of the TEC's Linkage task force, stating that the Secretariat, in a draft background paper titled "Collaboration with other relevant institutional arrangements under and outside the Convention" (TEC/2013/6/6), had undertaken a mapping exercise and created a matchmaking table and identified the Adaptation Committee and the LEG as those with whom the TEC could work to: provide inputs and participate in workshops or expert meetings on means of implementation, as well as prepare a paper on the topic; share experiences and lessons learned on TNAs and incorporation of TNAs into NAPs; and provide views of the TEC on long-term finance as an input to the work programme on long-term finance, as requested by the COP. Pflüger suggested an informal meeting among task force members to discuss topics for collaboration and next steps.

Uosukainen, supported by Klinecicz, lamented that the TEC had not yet interacted with the GEF. He also noted that hydrofluorocarbons (HFCs) are a serious climate problem, suggesting the TEC invite a representative from the Technology and Economic Assessment Panel (TEAP) of the Montreal Protocol to the next TEC meeting. Shimada, supported by Wang, noted that, while important, HFCs are currently a political rather than a technical issue and questioned whether time was available for the TEC to incorporate this discussion into its schedule.

Responding to a question from Uosukainen, Thompson said the CTCN is working with the GEF Council to provide financial support to the CTCN via its sixth replenishment.

In response to comments on the GCF, Vice-Chair Blanco noted that the COP decided (3/CP.17 and 13/CP.18) that the GCF and the TEC should collaborate, and reminded the TEC that either body could begin a dialogue on this topic. He continued by proposing that the TEC Chair and Vice-Chair submit letters of invitation to collaborate with the GCF, LEG and CGE.

Thompson, supported by Shimada and Kennedy, agreed with the Vice-Chair's suggestion but cautioned that any letter to the GCF must be written bearing in mind both the GCF's new report "Relationship with the UNFCCC and External Bodies" and the results of the June 2013 GCF Board meeting.

Noboa suggested the TEC collaborate with the World Intellectual Property Organization (WIPO) on a joint investigation of the impact of intellectual property rights (IPR) on technology transfer. Wang also supported beginning collaboration with institutions working on IPR. In the ensuing discussions, the TEC decided that IPR and HFCs would be taken up at TEC 7.

The TEC further agreed that the TEC Chair and Vice-Chair would submit letters as soon as possible inviting collaboration with the GEF, CGE and LEG. Additionally, the TEC agreed that its Chair would send a letter to the GCF Board after the results of its current meeting were made available, where decisions on the GCF's collaboration with other relevant institutional arrangements under the Convention are expected to be made.

SUBMISSION OF THE TEC ON ITS VIEWS ON LONG-TERM FINANCE: This session was taken up in an early morning session on Friday. Chair Pflüger and Vice-Chair Blanco circulated a draft letter to be sent to the Co-Chairs of the work programme on long-term finance, indicating the TEC's readiness to collaborate and engage with them. TEC members Uosukainen, Thompson, Shimada, Sill and Kennedy stressed the need for more details to be included on what the collaboration could entail.

Sadeghzadeh suggested, and the TEC agreed, to set up a task force on long-term finance to be composed of: Wang, Kennedy, Vice-Chair Blanco and Sill. The task force was mandated to review and improve the draft letter, and review existing work on long-term finance issues as they relate to technology.

Thompson and Shimada suggested a TEC member attend the first Experts Meeting on Long-term Finance scheduled to take place 16-17 July 2013, in Manila, the Philippines. Tanunchaiwatana added that the second Experts Meeting will take place on 19-20 August 2013, in Bonn, Germany, and noted that a series of webinars will also take place. The TEC mandated the UNFCCC Secretariat to draw up a timeline with deliverables for the TEC's finance task force, namely updating the letter to the work programme on long-term finance, and reviewing existing work on this topic as it relates to technology.

The TEC further decided that the TEC Chair would informally inform the Co-Chairs of the work programme on long-term finance on ongoing relevant TEC work.

THEMATIC DIALOGUE ON RESEARCH, DEVELOPMENT AND DEMONSTRATION OF ENVIRONMENTALLY SOUND TECHNOLOGIES

SESSION I: PANEL ON RD&D OF ENVIRONMENTALLY SOUND TECHNOLOGIES: This session took place on Thursday afternoon, with Vice-Chair Blanco introducing the panelists.

Robert Byrne, University of Sussex, presented on issues surrounding RD&D of mitigation technologies, noting they present various opportunities, as they: contribute to development and capacity building; offer cost reductions; improve energy service access; and avoid carbon lock-in. He highlighted that innovation systems are especially weak in LDCs, stressing the need to understand how marginalized groups access services. He described two success stories related to: the deployment of photovoltaics (PV) in China; and solar home systems in Kenya.

Emile Frison, Bioversity International, underscored the challenge of feeding a growing population and addressing malnutrition under a changing climate. He also stressed the importance of adaptation in order to produce more nutritious food in harsher conditions while protecting the environment, noting that conserving biodiversity increases resilience of vulnerable communities. Frison described the Seeds for Needs project, which promotes adaptation by women farmers in Ethiopia and Papua New Guinea in order to illustrate the need to broaden the genetic base of crop cultivation and empower farmers to adapt through crowdsourcing.

In the ensuing discussion, Byrne addressed how to catalyze the ethos of innovation in developing countries, stressing that the lack of skills and capabilities puts a brake on technology transfer processes. He described barriers to private sector involvement and growth, noting much

ignorance exists regarding existence of, and risks related to, markets for clean technologies in LDCs and marginalized areas. Frison stressed that many briefs on adaptive technologies in crop and land management already exist, noting the TEC could play a role in highlighting the need to adopt a multi-sectoral approach and in recognizing the linkages among the development, climate and food security arenas.

SESSION II: PANEL DISCUSSION ON RD&D OF ENVIRONMENTALLY SOUND TECHNOLOGIES:

Vice-Chair Blanco introduced the first question for the panel discussion: Which cooperative RD&D structures currently exist (bilateral, multilateral), and what good practices and lessons can be learned from them?

James Wilde, Carbon Trust, said a key barrier to technology diffusion is that while small- and medium-sized enterprises have innovative new technologies, they often do not have the right teams or funding to roll them out, illustrating a gap that intermediaries and incubators, such as the Carbon Trust, need to fill.

Arturo Martinez, National Council for Scientific and Technological Research of Argentina, described a case study from Argentina where small farmers worked with seed companies to acquire seed varieties better adapted to local conditions.

Linus Mofor, International Renewable Energy Agency (IRENA), elaborated on challenges faced by and opportunities for small island developing States (SIDS) regarding renewable energy and climate change.

Allison Mages, General Electric (GE), explained that GE is moving from multidisciplinary to sectoral research centers, and is carrying out research based on the needs of customers, i.e., government and other stakeholders.

Jonathan Coony, World Bank, lamented that bilateral and multilateral RD&D is challenging due to ownership issues surrounding IPR and nationalistic tendencies, citing World Trade Organization litigation over climate-relevant technologies as examples.

Carrie Pottinger, IEA, said bilateral and multilateral cooperation will not work without focusing on issues of mutual interest or benefit, and cited the Danish example of Project Zero, a multistakeholder initiative to make a town carbon-free, as an example of good practice.

Vice-Chair Blanco then introduced the second question: What role do the public and private sectors play in cooperative RD&D and what is their impact?

Wilde used the example of offshore wind in the United Kingdom, where the Carbon Trust brought together key project developers to brainstorm efficiency improvements, which were then implemented on the ground. Martinez explained that governance and regulations incentivizing inter-institutional and interdisciplinary dialogues are required for cooperative RD&D but are lacking in many countries. Mofor highlighted the importance of sharing data to lower costs and build capacities. Mages said well-defined markets attract capacity and funding, and public funding tends to drive public-private partnerships. Coony described a venture capital fund being set up for the World Bank's Climate Innovation Center in Nairobi, which will offer concessional loans to private sector actors who would otherwise be averse to investing in East Africa due to business risk.

In the ensuing discussion, Pottinger noted the importance of the existence of immediate consumer benefit for successful technology uptake.

Vice-Chair Blanco then presented the third question: What could be the role of the Technology Mechanism in enhancing and improving cooperative north-south, south-south and other RD&D activities?

Martinez highlighted the potential role of the Technology Mechanism in identifying capacity-building needs. Mages agreed and, with Pottinger, added that the Mechanism can also help countries share best practices.

SESSION III: GENERAL DISCUSSION AND WRAP

UP: Vice-Chair Blanco opened the floor to questions. On incentives for governments to support RD&D projects, Martinez stressed the importance of risk measurement. Wilde noted that governments should put in place clear milestones to incentivize private sector recipients of public money to make real progress. Answering a question from TEC member Albert Binger, Wilde explained that the failure of the global community to establish an effective climate regime concretely affects private sector development and deployment of climate-relevant technologies. Frison lamented that the marriage of traditional knowledge and modern science has not yet been adequately explored, and Klinecicz saw a need for south-south sharing of innovation and experience. On the topic of frugal innovation, Mages noted examples in the medical and other fields where costs have dropped radically by challenging technology developers to rethink innovation.

Chair Pflüger then summarized the thematic dialogue, highlighting that numerous collaborative arrangements already exist, and that RD&D requires capacity and patience for development. He said innovation might be needed in order to apply mature technologies to new environments, stressing the importance of tailor-made concepts. Pflüger then underlined that a lack of RD&D and capacity limits technology transfer. He outlined possible roles for the TEC, including, *inter alia*: bringing these issues to the attention of high-level policy makers; setting the direction of research; facilitating more exchange of joint RD&D; and promoting best practices.

FURTHER FOLLOW-UP ACTIVITIES

TNAS: On Friday morning, Vice-Chair Blanco suggested that the TEC hold a workshop to disseminate the findings of the TEC on TNAs at TEC 7, when the TNA Brief and the third TNA Synthesis Report will be presented in advanced forms.

Elhassan supported this suggestion, noting that financiers in particular should be invited. Klinecicz interjected that while dissemination is very important, financiers may not be the right audience for the results of these two particular documents.

Jura suggested that ground truthing activities on TNA implementation be planned to illustrate the ways that TNAs are affecting real world progress on climate adaptation and mitigation.

Thompson explained the CTCN is expecting that requests on capacity building and knowledge from parties will often directly stem from TNA conclusions, and as such noted the proposed workshop would benefit the TEC, as well as the CTCN.

Sadeghzadeh, supported by Elhassan, suggested contacting the GCF to fund in-depth investigations of case studies of progress on TNA implementation. Chair Pflüger recalled that before such a plan can move forward, modalities of collaboration with the GCF must be established.

TRMS: Chair Pflüger introduced this agenda item, and Klincewicz informed the TEC that the TRM task force had edited the draft TEC Brief on TRMs based on comments made during the first day of TEC 6. Klincewicz suggested, and the TEC agreed, to accept further comments on the lessons learned and conclusion sections.

Further to a suggestion from Kennedy, supported by Thompson, on disseminating the Briefs authored by the TEC, the UNFCCC Secretariat was mandated to formulate a communication strategy for the TEC's products to be discussed at TEC 7. The TEC also agreed to request the UNFCCC Secretariat to prepare a note on the TEC mandate regarding its formulation of recommendations, for consideration at TEC 7.

ENABLING ENVIRONMENTS AND BARRIERS TO TECHNOLOGY DEVELOPMENT AND TRANSFER:

Hecl presented document TEC/2013/6/10, a draft synthesis of a selection of the second round of TNAs focused on enabling environments and barriers to technology development and transfer, and an associated database quantifying results. He explained that the most prominent overall mitigation barriers identified by parties were, in order of importance: inappropriate economic and financial incentives and disincentives; insufficient legal and regulatory frameworks; market failure or imperfection; technical barriers; network failures; information awareness; institutional and organizational capacity; human skills; and social, cultural and behavioral barriers. Hecl noted the most prominent overall adaptation barriers identified by parties were, in order of importance: economic and financial issues; market failure or imperfection; policy, legal and regulatory issues; human skills; information and awareness; technical challenges; institutional and organizational capacity; network failures; and social, cultural and behavioral issues.

Sadeghzadeh and Wang reasserted the importance of IPR for the TEC. Hecl then added that while IPR was considered in the report, it was not noted as an explicit barrier in most TNAs, but was rather subsumed under political and economic barriers. Kennedy and Sill explicated on IRENA's work on IPR in the form of a recently-published report and a further upcoming report on the topic as it relates to energy, and, supported by Sadeghzadeh, suggested inviting IRENA to the next TEC meeting to present on this issue.

Responding to a comment by Noboa lamenting that solutions offered to developing countries on IPR often focus on importing technologies from developed countries, Chair Pflüger and Shimada noted that support mechanisms in Germany and Japan for developing country technology development often go underutilized.

Uosukainen stated that the findings within the current paper are adequate to use in forming messages to the COP on enabling environments and barriers. Supported by Thompson, he voiced concerns over IPR within the context of barriers and enablers. Thompson added that most complaints on IPR are unsubstantiated by real world examples and that IPR is not a decisive issue in trade flows of climate-relevant technologies.

Binger cited a waste disposal technology example to illustrate IPR issues, and explained that developing countries often face challenges negotiating fair terms for technology acquisition.

Chair Pflüger suggested, and the TEC agreed, to make the draft report public and request responses from stakeholders on barriers and enablers of technology development and transfer. He said the final version of the report will include all TNAs submitted thus far and be made available prior to TEC 7. The TEC also decided to invite IRENA to the TNA workshop to be held at TEC 7 to discuss its TEC-relevant work.

TECHNOLOGY INFORMATION PLATFORM

Asher Lessels, UNFCCC Secretariat, provided an update on the TT:CLEAR website, highlighting the following improvements since TEC 5: a new page for TEC members only; a catalogue of upcoming technology-related events; the addition of a social media component for interaction with off-site stakeholders during TEC meetings; and a searchable database on bilateral support relevant to the transfer of, and access to, environmentally sound technologies and knowhow. He also indicated that a new technology portal, featuring information on TNAs and technology briefs, will be live by TEC 7.

TEC members then suggested options for further simplifying and optimizing the page, including creating a dedicated webpage for discussions and linking information to a geographical system to facilitate searchability by region or country.

OTHER MATTERS

DATES AND VENUE OF THE NEXT MEETING: Tanunchaiwatana announced that TEC 7 is planned for 4-7 September 2013, in Bonn, Germany, and will include a workshop on Friday 6 September on TNA-related matters, to which the CTCN Advisory Board will be invited in the run up to its meeting on 9-11 September.

ISSUES FOR FURTHER CONSIDERATION AT THE NEXT MEETING: Chair Pflüger summarized that TEC members had agreed to consider the following at TEC 7: revised or final drafts of TEC briefs on TNAs and TRMs; the TEC's communication strategy on its deliverables; an updated version of the paper on linkages with relevant institutions; the rolling TEC work programme for 2014-2015; and the joint TEC/CTCN report to the COP. Can suggested, and TEC members agreed, to add an agenda item on identifying follow-up activities, including on IPR and HFCs.

Chair Pflüger thanked TEC members and other participants, and closed the meeting at 3:07 pm.

UPCOMING MEETINGS

Fifth Africa Carbon Forum: The Africa Carbon Forum is a trade fair and knowledge-sharing platform for carbon investments in Africa, and will consider ways to promote access to low-carbon development in Africa. The Forum aims to connect project developers and buyers of carbon credits through facilitation sessions, and will discuss the latest development in the carbon market and how the Clean Development Mechanism and other mitigation mechanisms can be successful in Africa. **dates:** 3-5 July 2013 **venue:** The Golf Hotel **location:** Abidjan, Côte d'Ivoire **contact:** Emilie Wieben **e-mail:** acf@risoe.dtu.dk **www:** <http://africacarbonforum.com/2013/english/>

Pacific Climate Change Roundtable 2013: The Pacific Climate Change Roundtable was established to coordinate climate change dialogue and networking in the region and to facilitate linking global and regional stakeholders with those at the national and community levels. **dates:** 3-5 July 2013 **location:** Nadi, Fiji **contact:** Secretariat of the Pacific Regional Environment Programme **phone:** +685 21929 **fax:** +685 20231 **e-mail:** sprep@sprep.org **www:** <http://www.sprep.org/climate-change/sprep-gears-up-for-2013-pacific-climate-change-roundtable-pccr>

Joint Meeting of the Pacific Platform for Disaster Risk Management and Pacific Climate Change Roundtable: This Roundtable is organized around the theme “Strengthening Resilience: An Integrated Regional Strategy for Disaster Risk Management and Climate Change for the Pacific” and will bring together actors in disaster risk management and climate change to discuss key issues, challenges and opportunities that can be taken into consideration in the formulation of an integrated regional strategy for disaster risk management and climate change, which is to be adopted by 2015, as well as succeed current frameworks. **dates:** 8-11 July 2013 **venue:** Sofitel Resort and Spa **location:** Denarau Island, Fiji **www:** <http://www.pacificdisasterclimatemeeing2013.net/>

First Meeting of Experts on Long-term Finance: This expert meeting is being held under the UNFCCC extended work programme on long-term finance, and will discuss topics, including: parameters for identifying pathways for mobilizing scaled-up climate finance; public policy and financial instruments that facilitate the mobilization of climate finance for mitigation and adaptation activities in developing countries; and enabling environments and policy frameworks for effective deployment of climate finance. **dates:** 16-17 July 2013 **location:** Manila, Philippines **contact:** UNFCCC Secretariat **phone:** +49 228 815 1000 **fax:** +49 228 815 1999 **e-mail:** longtermfinance@unfccc.int **www:** http://unfccc.int/cooperation_support/financial_mechanism/long-term_finance/items/6814.php

Second Meeting of Experts on Long-term Finance: This expert meeting is being held under the UNFCCC extended work programme on long-term finance. **dates:** 19-20 August 2013 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49 228 815 1000 **fax:** +49 228 815 1999 **e-mail:** longtermfinance@unfccc.int **www:** http://unfccc.int/cooperation_support/financial_mechanism/long-term_finance/items/6814.php

Latin American Carbon Forum 2013: The Seventh Latin American and Caribbean Carbon Forum will discuss prospects for carbon projects in Latin America. **dates:** 28-30 August 2013 **venue:** Centro de Convenções Sul America **location:** Rio de Janeiro, Brazil **contact:** Miriam Hinojosa, UNEP Risø Centre **phone:** +45-4677-5180 **e-mail:** mihl@dtu.dk **www:** <http://www.latincarbon.com>

Seventh meeting of the TEC of the UNFCCC: TEC 7 will consider: revised or final drafts of TEC briefs on TNAs and TRMs; the TEC’s communication strategy on its deliverables; an updated version of the paper on linkages with relevant institutions; the TEC work programme for 2014-2015; the joint TEC/CTCN report to the COP; and follow-up activities. **dates:** 4-7 September 2013 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **e-mail:** secretariat@unfccc.int **www:** http://unfccc.int/ttclear/templates/render cms_page?s=TEM_TEC_meetings

Second Advisory Board Meeting of the CTCN: The CTCN Advisory Board will continue its work on establishing modalities and procedures of the CTCN, including approving prioritization criteria for requests and approving criteria for membership in the Network, hiring and staffing, and NDEs. **dates:** 9-11 September 2013 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **e-mail:** secretariat@unfccc.int **www:** http://unfccc.int/ttclear/templates/render cms_page?TEM_tcn and <http://www.unep.org/climatechange/ctcn/>

37th session of the Intergovernmental Panel on Climate Change (IPCC 37): IPCC 37 will consider two methodology reports for approval: the “2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands”; and good practice guidance on estimating greenhouse gas emissions and removals from land use, land use change and forestry under the Kyoto Protocol. **dates:** 14-18 October 2013 **location:** Batumi, Georgia **contact:** IPCC Secretariat **phone:** +41-22-730-8208 **fax:** +41-22-730-8025 **e-mail:** IPCC-Sec@wmo.int **www:** http://www.ipcc.ch/scripts/_calendar_template.php?wg=8

19th Session of the Conference of the Parties to the UNFCCC: The 19th session of the Conference of the Parties to the UNFCCC (COP 19), the ninth session of the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP 9) and the Subsidiary Bodies will convene in Warsaw, Poland. **dates:** 11-22 November 2013 **location:** Warsaw, Poland **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **e-mail:** secretariat@unfccc.int **www:** <http://www.unfccc.int>

GLOSSARY

ADP	<i>Ad Hoc</i> Working Group on the Durban Platform for Enhanced Action
CGE	Consultative Group of Experts on National Communications from Parties not included in Annex I to the Convention
COP	Conference of the Parties
CTCN	Climate Technology Centre and Network
GEF	Global Environment Facility
GCF	Green Climate Fund
HFCs	Hydrofluorocarbons
IEA	International Energy Agency
IPR	Intellectual property rights
IRENA	International Renewable Energy Agency
LDC	Least developed country
LEG	Least Developed Countries Expert Group
NAMA	Nationally appropriate mitigation action
NAP	National adaptation plan
NDE	National designated entity
RD&D	Research, development and demonstration
SBSTA	Subsidiary Body on Scientific and Technological Advice
TAP	Technology Action Plan
TNA	Technology needs assessment
TEC	Technology Executive Committee
TRM	Technology Roadmap
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change