SUMMARY OF THE UNFCCC WORKSHOP ON TECHNOLOGY NEEDS ASSESSMENTS: 1-2 JUNE 2011

The United Nations Framework Convention on Climate Change (UNFCCC) Workshop on Technology Needs Assessments (TNAs) convened in Bonn, Germany, from 1-2 June 2011. The objective of the workshop was to: share good practices and lessons learned from non-Annex I parties' experiences in conducting TNAs; identify specific needs and practical actions to assist parties in implementing their results; and discuss the roles of TNAs in the context of the implementation of the Technology Mechanism as established at COP 16 in Decision 1/CP.16 (the Cancun Agreements).

Nearly 70 participants from governments, international organizations and civil society engaged in the two-day workshop, which operated under Chatham House Rules of non-attribution. Following a brief opening session providing background and discussing workshop expectations on Wednesday morning, 1 June, the participants addressed national perspectives on lessons learned and good practices in conducting TNAs in the second session. On Wednesday afternoon, the second session continued with international perspectives. The third session on Wednesday afternoon addressed implementing the results of TNAs, focusing on international and private sector perspectives.

On Thursday morning, the third session continued with a panel discussion on experiences and lessons learned from supporting technology transfer activities. The fourth session on Thursday afternoon, on strategies and recommendations for the future of the TNA process, began with background information and continued with a panel discussion on the role of TNAs in enhanced action on technology development and transfer to support action on mitigation and adaptation. In the afternoon, the fourth session continued with breakout sessions on: the role of TNAs in enhanced action on technology development and transfer, including the possible role of TNAs in facilitating delivery of technological and financial support for mitigation and adaptation actions; preparing and implementing national mitigation and adaptation actions; and the Technology Mechanism. Late in the afternoon, the final session was convened to discuss ways forward.

A BRIEF HISTORY OF THE UNFCCC AND TECHNOLOGY NEEDS ASSESSMENTS

The international political response to climate change began with the adoption of the UNFCCC in 1992, which sets out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous anthropogenic interference" with the climate system. The UNFCCC entered into force on 21 March 1994 and now has 195 parties.

In December 1997, delegates to Third Conference of the Parties (COP 3) to the UNFCCC in Kyoto, Japan, agreed on a Protocol to the UNFCCC that commits industrialized countries and countries in transition to a market economy to achieve emission reduction targets. These countries, known as Annex I parties under the UNFCCC, agreed to reduce their overall emissions of six greenhouse gases by an average of 5.2% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The Kyoto Protocol entered into force on 16 February 2005 and now has 193 parties.

At COP 7 in Marrakech, Morocco, in December 2001, the Marrakech Accords were adopted, which contained a framework for technology transfer, including technology needs assessments (TNAs) (4/CP.7). Developing country parties have been conducting TNAs since COP 7. The Global Environment Facility (GEF) has funded 92 non-Annex I parties' TNAs, while 78 supported by the UN Development Programme (UNDP) and 14 by the United Nations Environment Programme (UNEP) have been undertaken. A handbook on Conducting TNAs for Climate Change was released in 2004 by the UNFCCC Secretariat to provide guidance on the identification of needs for mitigation of, and adaptation to, climate change.

A workshop on best TNA practices was held in Bangkok, Thailand, from 27-29 June 2007, which provided a forum for exchanging lessons learned from conducting assessments and provided assistance to non-Annex I parties to identify needs and practical actions, as well as to complete TNAs and implement results.

The GEF, in response to Decision 4/CP.13 (Development and transfer of technologies under the Subsidiary Body on Implementation), which was adopted at COP 13 in Bali, Indonesia, created a strategic programme to scale up the level of investment for technology transfer and proposed a funding window to support TNAs. The GEF-financed TNA project commenced under the Poznań Strategic Programme on Technology Transfer in November 2009 to provide assistance to developing countries to carry out TNAs. In November 2010 an updated handbook for Conducting TNAs for Climate Change, was prepared and released by UNDP, with the Expert Group on Technology Transfer and Climate Technology Institute (CTI).

At COP 16 in Cancun, Mexico, parties adopted the Cancun Agreements (1/CP.16), which decided to establish a Technology Mechanism, including a Technology Executive Committee (TEC) and a Climate Technology Centre and Network (CTCN). The Cancun Agreements also mandate the TEC to provide an overview of technological needs and analysis of policy and technical issues related to the development and transfer for mitigation and adaptation, and the CTCN to, at the request of a developing country party, provide advice and support related to the identification of technology needs and the implementation of environmentally sound technologies, practices and processes.

SUMMARY OF THE WORKSHOP

The UNFCCC Subsidiary Body on Scientific and Technological Assistance (SBSTA) Chair Mama Konaté (Mali) opened the UNFCCC Technology Needs Assessment (TNA) Workshop by laying out his hopes for a successful exchange of ideas on the TNA process, lessons learned and further development of the TNA process. Konaté also highlighted progress already made on TNAs, noting that the ongoing second round of TNA submissions has seen significant improvements in the level of sophistication and connection to national development priorities compared to the previous round.

Wanna Tanunchaiwatana, UNFCCC Secretariat, welcomed participants to Bonn and recalled the progress made over the past decade of work on TNAs within the UNFCCC. She emphasized the importance of the workshop in providing ideas and guidance to upcoming UNFCCC negotiations on the implementation of the Technology Mechanism established by the Cancun Agreements.

All presentations made at the workshop are available on the UNFCCC's Technology Transfer Clearinghouse website: http://unfccc.int/ttclear/jsp/TrnDetails.jsp?EN=TNAWshpBonn

SESSION I: SETTING THE SCENE

Workshop Chair Kishan Kumarsingh (Trinidad and Tobago) stressed the importance of comprehensive early recognition of technology needs, and laid out his expectations on the workshop's objectives to: share good practices and lessons learned; aid in the implementation of practical and actionable aspects of TNAs; and discuss the role of TNAs in the Technology Mechanism of the Cancun Agreements, as well as how the Technology Mechanism can serve TNAs. Chair Kumarsingh then invited parties to voice their individual expectations for the workshop.

A developing country delegate said he would like to engage in discussions on TNA Action Plans, as well as to clarify the relationship between technology roadmaps, Nationally Appropriate Mitigation Actions (NAMAs), National Adaptation Programmes of Action (NAPAs), low carbon development strategies, the Cancun Agreements, and TNAs.

A delegate from a country with an economy in transition (EIT) said it would be useful to discuss the most effective and most efficient methods to conduct and update TNAs as new technologies emerge. She also expressed interest in a database of successful environmentally sound technologies, and other tools to assist in the TNA process. One developing country delegate raised the issue of technology diffusion within national contexts and was interested in sharing experiences on private sector responses to national TNAs.

A developed country delegate said TNAs are crucial to the Technology Mechanism for identifying both technology needs and barriers. He noted that already in 2005, financiers had said that the money was there, but what was lacking were good proposals.

Another developed country delegate looked forward to constructive discussions comparing: success stories, limitations, gaps and challenges countries face in carrying out TNAs. He was also interested in how countries link TNAs to their development priorities if TNAs are coordinated with neighboring countries, and how mitigation and adaptation needs are balanced.

One developing country delegate inquired about how to better incorporate traditional knowledge into TNAs. Another said he wanted to learn not only about technologies that may be available in five years in the future, but also about open source technologies available now, such as vulnerability assessment tools.

Vladimir Hecl, UNFCCC Secretariat, presented a paper summarizing good practices in conducting and implementing the results of TNAs. He noted that successful TNAs had included: a knowledgeable project leader; team experts who were previously involved in similar activities; linking project successes with development plans; and interaction with neighboring countries. Hecl lamented that while 264 project ideas were outlined in the TNAs reviewed, most were not complete proposals.

Lawrence Agbemabiese, UN Environment Programme (UNEP), and Jyoti Painuly, UNEP Risoe Centre, presented on TNAs under the Poznań Strategic Programme on Technology Transfer. Agbemabiese noted that expected outcomes of TNAs include: national consensus on priority technologies; development of Technology Action Plans (TAPs); and improved regional networks. Painuly highlighted lessons from previous TNAs, such as: strong institutional frameworks are paramount; stakeholder roles needs to be well defined and their involvement strengthened; analyses of barriers for prioritized technologies are necessary; and the need to include TNAs in the frameworks of wider development plans to ensure political acceptance.

SESSION II: LESSONS LEARNED AND GOOD PRACTICES IN CONDUCTING TNAS

Participants made presentations on their experiences conducting TNAs and supporting TNAs during two sub-sessions on national perspectives and international and private sector perspectives.

NATIONAL PERSPECTIVES: Kamal Uy, Ministry of Environment, Cambodia, presented on how Cambodia prepared for the TNA, saying that identification of development priorities relied on existing government documents and a preliminary list of proposed technologies were selected. He highlighted the Multi-Criteria Decision Analysis (MCDA) Model, which was used to prioritize technologies providing the highest development benefits in various sectors and sub-sectors. On lessons learned he noted that national communications are a good basis for TNA development and that MCDA is a good model to prioritize potential technologies, but requires further practical experience by local experts.

Francisco Villalobos, Environment, Energy and Telecommunications Ministry, Costa Rica, noted the need to focus on sectors that are primarily responsible for emissions, highlighting that transport accounts for 64% of energy sector emissions. He explained that Costa Rica's TNA is in the barrier analysis phase, which includes the mapping of markets and validation by stakeholders. On lessons learned, he stressed: that the TNA methodology and associated technical support are very good assets but need to incorporate country specificities; the need for regional workshops for capacity building; and the need for knowledge exchange between country teams and experts.

Birama Diarra, Ministry of Equipment and Transport, Mali, highlighted multi-criteria analyses for prioritization of technologies, the choice of four technologies and barriers for implementation and development of a national action plan. On ongoing actions, he noted they are identifying barriers, conducting market studies and developing the national action plan. He recommended appropriate actions to facilitate implementation of national action plans.

In discussions, Villalobos highlighted that stakeholder engagement in the TNA process creates co-benefits in other areas by establishing the basis for cooperation among groups.

Claudia Figallo, Ministry of Environment, Peru, highlighted the importance of project coordination and having a highly multi-disciplinary team for identification of social, environmental, technical, and political goals and ensuring the feasibility of these goals. Concerning good practices,

she emphasized having a detailed work plan; establishing a communication procedure; following up on consultants' activities; and building on existing experience and data.

El Hadji Mbaye Madien Diagne, National Climate Change Committee, Senegal, shared lessons learned on Senegal's ongoing development of its TNA, which included: the importance of participation by all relevant experts in working groups and carefully defining criteria and their weight for analyses; the need for reflection on how to engage policymakers in implementation of results; and the need to organize regional workshops on preparing technology transfer projects for financing.

Can Wang, Tsinghua University, noted that the TNA process has not been completed in China but presented on relevant studies for the Chinese TNA, noting their key findings. He underscored the lack of a comprehensive overview of major sectors and regional differences. He said the TNAs should stress the cost and potential of technologies, and that not enough attention has been focused on adaptation. He said most studies focus on technology receivers rather than suppliers and noted the absence of technology review by potential supplier countries.

In discussions, a developed country delegate asked for clarity on lessons learned, including how reviews and revision of TNAs are conducted. Another questioned whether criteria for prioritizing technologies are national or international.

INTERNATIONAL PERSPECTIVES: On Wednesday afternoon, Hilary McMahon, UNDP, highlighted uses of the UNDP's TNA Handbook, climate TechWiki and TNAssess, the Excel-based MCDA Support Tool, saying these tools build upon one another and should be used symbiotically. She noted questions on the: absorptive capacity at the country and local level for new technologies; translation of results into actions; and inclusion of adaptation as a priority.

On Climate Technology Initiative (CTI) experiences in supporting parties with conducting TNAs, Elmer Holt, Department of Energy, US, highlighted that CTI adds value to the TNA process by facilitating interaction between government agencies and business. He highlighted important factors in CTI engagement in TNAs in Bolivia, Malawi and Ghana. On takeaway messages, he underscored creating a living dynamic document, capacity building, realism, creating and accessing informal networks on specific technical areas, engaging "movers and shakers," and the importance of an engaged, dynamic leader.

Daniel Bongardt, German Society for International Cooperation (GIZ), Germany, presented on renewable energy, energy efficiency and transport technologies in TNAs, specifically addressing the use of TNAs to support sustainable development. He said it is useful to examine the full technology cycle in TNAs, including research and development (R&D), deployment and diffusion. He noted the need for a participatory process to ensure the inclusion of sectoral participants and to consider overlap with other processes, including national communications and development plans. Bongardt said TNAs are good at identifying low-cost options offering sustainable development co-benefits. On lessons learned, he underscored the variation in structure and quality of analyses, better linking

with NAMAs and NAPAs, and that TNAs should: be short and focused; be country specific; avoid general descriptions; and include non-technological options in tools and handbooks.

On capacity building and involving stakeholders, a developed country delegate highlighted concerns about the capacity to absorb the high level of information available in databases and said guidance should be provided on how to best use the information. A developing country delegate said national and international criteria have to be balanced since projects must be country specific, but also acceptable to international funding mechanisms.

Holt highlighted the use of the CTI-PFAN to screen TNAs for financing. Bongardt said setting up working groups and responsible organizations to facilitate the process is necessary, as are financing and involving experts. McMahon underscored engaging users of information on usability to ensure successful feedback loops. She said a prescriptive model should be avoided, and encouraged dynamic and flexible options-based approaches.

SESSION III: IMPLEMENTING THE RESULTS OF THE TNAS

Taking place on Wednesday afternoon and Thursday morning, this session began with presentations on international and private sector perspectives and continued the next day with a panel discussion.

INTERNATIONAL AND PRIVATE SECTOR PERSPECTIVES: On behalf of Robert Dixon, GEF, Lawrence Agbemabiese, UNEP, gave an update on the Poznań Strategic Programme on Technology Transfer, and the GEF's role on funding technology transfer. He said the Poznań Programme has a funding level of US$35 million from GEF-4 and US$15 million from the Special Climate Change Fund. He noted that the GEF has supported technology transfer pilot projects in 16 countries in cooperation with six agencies, with a total GEF funding of US$58 million and US$195 million of co-financing. He closed by presenting the Long-Term Programme on Technology Transfer.

Bert van der Plas, UNFCCC Secretariat, presented on preparing technology transfer projects for financing. He began by discussing funding opportunities for TNA findings, covering, *inter alia*: bilateral funding; the GEF; Clean Development Mechanism/Joint Implementation; the Adaptation Fund; and private financing. He followed this by discussing typical proposal submission problems, including: incomplete or imbalanced proposals; proposals submitted to the wrong entity; those not customized to the funder to whom it was sent; and those linguistically difficult to understand. He said: there is no single formula for successful proposals; addressing financial structure should be done early in the preparation process; and there is a lack of support for project preparation, which often represents about 5% of total project costs.

Peter Storey, CTI-PFAN, introduced CTI-PFAN's work to bring private funds into climate technology. He said CTI-PFAN provides free support and advice to project sponsors and developers to help them meet the criteria of the investment community. He said pointing out attractive projects for private sector investment by international institutions for TNAs would create win-win situations.

Cyrille Arnould, Global Energy Efficiency and Renewable Energy Fund (GEEREF) and European Investment Bank, presented on the GEEREF, which is a public-private partnership (PPP) that acts as a fund for renewable energy and energy efficiency funds, and whose public donor money is registered as official development assistance. He said these funds are currently leveraged by a factor of US$35 for every US$1 of public money invested. He explained that the goal of the GEEREF is to fund projects too small or too remote for private equity, focusing on Africa, Asia and Latin America. He lamented that many countries desperate for energy investments lack the regulatory frameworks such investments require.

During the discussion, a developing country delegate asked whether the technology transfer pilot projects are connected to TNAs. Another noted the "impressive" leverage of GEF activities and wondered whether matching could occur in parallel with other steps to facilitate progress, and said he was encouraged by the inclusion of adaptation under the CTI-PFAN. In response to questions, Arnould noted the challenge of making investments in technology transfer compatible with the private sector, which he stressed as inherently conservative. A delegate from an economy in transition underscored the need to review and revise TNAs, while a developing country delegate highlighted support for expanding TNAs to sectors not originally included in the assessments.

To conclude the day, Chair Kumarsingh offered a synopsis of important workshop themes thus far, highlighting among others: awareness of specific national conditions is a key asset when undertaking technology transfer exercises; learning from similar countries can be an efficient strategy for identifying appropriate technologies; key stakeholder involvement not only improves outcomes but may attract potential financiers and donors; and that the TNA process can prove vitally important for developing NAMAs and NAPAs.

PANEL DISCUSSION: On Thursday, the third session continued with a panel discussion on experiences and lessons learned from supporting technology transfer, facilitated by Kunihiko Shimada (Japan), and was structured around four guiding questions.

On lessons learned from funders, Toru Kubo, Asian Development Bank, said deployment of commercially viable technology is easy, but even profitable projects will not come to fruition if policy frameworks do not exist. He stressed that for serious consideration by funders, proposals must align with national development priorities and be co-funded by national partners. Jochen Harnisch, KfW Bankgruppe, said development banks do not focus on technology dissemination, but national development goals, and TNAs need to consider this. Binu Parthan, Renewable Energy and Energy Efficiency Partnership, stressed that funders should not dictate technologies to be used. Sarah Eastabrook, Alstom/World Business Council for Sustainable Development, reminded participants that companies follow the demands of customers, but cannot service customers in contexts lacking adequate and transparent regulatory and policy frameworks. She recommended that delegates use the Technology Mechanism to simplify and streamline technology transfer governance as much as possible.

On barriers to technology transfer, Parthan warned that skewed pricing is a barrier to investment in some cases and recommended rationalization and elimination of fossil fuel subsidies. Eastabrook said the private sector rarely puts money into isolated markets and that regional coordination is key. Kubo said attention to end-use affordability is an obstacle, stressing that the development community is mandated to fund projects that are affordable for the poor. He said available private money will not flow to high-risk areas without more government engagement in PPPs. Harnisch recalled that bilateral agencies answer to taxpayers.

On factors influencing financing decisions, Eastabrook said to engage the private sector effectively, TNAs need to holistically scope out problems to be overcome. She also noted that the presence of skilled labor is key for private sector decision-making, and, as such, capacity building is of utmost importance. Parthan said TNAs should be updated regularly because problems, and therefore funding needs, change over time. Harnisch recommended more donor coordination on identifying the desirable project types. Kubo urged that TNAs not be wish lists, but rather focused on implementation, and that stakeholders involved in the TNA process be chosen accordingly, stressing the benefits of joint ventures for the success of projects.

On how governments should assess adequacy of financial resources, Harnisch noted the importance of early dialogues with funders to ensure compatibility with their guidelines. Parthan said the private sector must participate in the TNA process. Eastabrook said experiences of others need to be sought out and learned from.

During discussions, a developed country highlighted that enabling environments are key and investors require predictability. He noted that implementation should be an objective function of TNAs. A developing country delegate emphasized the importance of establishing markets for adaptation technologies. Eastabrook urged moving into implementation and said PPPs are an important tool to get things moving. She said it is key to attract the attention of companies with predictable markets. Parthan highlighted the benefits of engaging relevant stakeholders, including the private sector, going forward he said regulators should focus on establishing frameworks. Harnisch said the answer is not just to create an environment for the market to maximize profits, but that barriers must be addressed and that reducing risk via the creation of benign environments to release market creativity is important. Kubo said adaptation needs are crucial and that TNAs must be balanced between mitigation and adaptation.

SESSION IV: STRATEGIES AND RECOMMENDATIONS FOR THE FUTURE OF THE TNA PROCESS

BACKGROUND: Andrew Higham, UNFCCC Secretariat, presented on the Cancun Agreements and the Technology Mechanism, noting that the Technology Mechanism builds on existing initiatives including the Technology Transfer Framework and explaining that the TEC governance model has been agreed upon, but the modalities and procedures for making its functions operational have not. He underscored that less has been agreed related to the CTCN governance model.

Wytze van der Gaast, Joint Implementation Network, presented the background paper on the possible role of TNAs in the context of the implementation of the Technology Mechanism. He said TNAs have a role in defining technology projects, programmes and strategies with action plans and serve as an important input for low carbon development strategies and NAMAs and NAPAs. He said aggregating information from TNAs could provide information to the TEC on technology needs, addressing barriers, and good practice, enabling the TEC to translate this information into broader policies. He noted the CTCN could support developing countries in conducting or updating TNAs and enhancing TNA outputs, building national and international networks, and playing a facilitative role as a matchmaker linking countries with needs to finance, technologies and capacity building. He said it is possible that TNA outputs could influence the design of the CTCN.

A developing country delegate highlighted that many of these issues have not been decided by parties and said discussions should inform the negotiations rather than prejudge them. A developed country delegate said the TEC has a possible role in providing input on how TNAs should be conducted.

THE ROLE OF TNAS IN ENHANCED ACTION ON TECHNOLOGY DEVELOPMENT AND TRANSFER TO SUPPORT ACTION ON MITIGATION AND ADAPTATION: A panel discussion convened on Thursday morning on this issue.

On the sufficiency of TNAs for assessment and identification of technology needs, George Manful, UNEP, said revision of the UNDP handbook for conducting TNAs should be driven by the UNFCCC process. Zitouni Ould-Dada, United Kingdom, noted that the handbook should be fit for purpose and flexible enough to respond to local conditions. Carlos Fuller, Belize, underscored the decision in Cancun to increase national communications to every four years, saying the TNA process, national communications and NAPAs and NAMAs should be circular processes that feed into one another. He said it would be useful to develop regional adaptations of the handbook. Gabriel Blanco, Argentina, said the handbook is insufficient to cover all aspects of the TNA process, adding it would be useful to assess needs at all stages of the technology cycle.

On implementing TNA results, Cecilia Tam, International Energy Agency (IEA) encouraged more bottom-up analyses, and recommended using IEA's guidebook on creating national technology roadmaps. Manful noted the frustration of developing countries that have carried out assessment after assessment but rarely receive adequate support to act on their recommendations. Ould-Dada followed up by noting that implementation is easier when planning for it is incorporated into the assessment processes, and also that communication of findings go hand in hand with their implementation. K.Y. Oppong-Boadi, Ghana, said involving stakeholders from all relevant sectors is key. Fuller suggested that completion of full project proposals become a TNA requirement. Blanco reminded participants that preparing for implementation is not the aim of carrying out TNAs.

On the role of TNAs in the Technology Mechanism, Tam said it was important that the Mechanism consider the marginal impacts and technical viabilities of specific technologies. Manful said information contained within TNAs could guide the

process, but a precise role for them remains unclear. Ould-Dada agreed, adding that the Mechanism will not be the only channel to implement aspects of TNAs and stressed prioritizing high-impact projects. Oppong-Boadi lamented failed past technology transfer attempts, underscoring the importance of properly assessing needs and feasibility. Fuller said TNAs should be synergistic processes between international organizations, such as the International Renewable Energy Agency, and countries. Blanco said parties should streamline technology reporting for developing countries by choosing a single report or assessment to cover all technology issues.

FACILITATED BREAKOUT SESSIONS: In the afternoon, facilitated breakout sessions addressed issues relating to the roles of TNAs in enhanced action on technology development and transfer to support action on mitigation and adaptation, including the possible role of TNAs in facilitating delivery of technological and financial support, preparing and implementing national mitigation and adaptation actions and the Technology Mechanism. Group I was facilitated by Carlos Fuller, Belize, with El Hadji Mbaye Madien Diagne, Senegal, acting as rapporteur. Group II was facilitated by Susan Weston, Canada, with George Manful, UNEP, acting as rapporteur.

On approaches and methodologies, in Group I, many participants noted the process must be enhanced, and suggestions were made to hold more frequent TNA training sessions, including webinars. Another highlighted the importance of having a tool for countries at any stage of development. A final participant said one of the key links between TNAs and their implementation is choosing a project champion and an entity to push it.

In Group II, some delegates highlighted the need to add steps related to: all elements of the technology cycle, including R&D; adaptation of existing technologies; local development of technologies; possibilities for joint ventures; indigenous technologies; conducting cost-benefit analyses of selected technologies and plans; and ecological assessments. One delegate highlighted that the handbook is a guidance tool and suggested a less prescriptive approach that highlights options. Another suggested building a knowledge management network based on TNAs. One participant from an international organization noted that the handbook does not preclude any of these actions but that economic benefit analysis was missing from the handbook, although it is now available on the website.

On identifying and overcoming barriers, Group I participants highlighted the importance of interaction with stakeholders and getting opinions from outside the country to add perspective. To overcome barriers, participants stressed the need to update policies to ensure predictability and transparency, and bring TNAs into overall national climate change planning. One commenter also suggested computer-based policy scenario modeling to investigate policy options. Another participant urged the sharing of experiences of failed projects, which he said often offer better lessons learned than success stories.

In Group II, participants identified barriers, including: that the TNA process may overburden regional center capacity; absence of spare parts in local economies to maintain installed technologies; and lack of information to identify barriers in the first place. One participant noted that regional centers are a

means of overcoming barriers through technical support. Another noted barriers including lack of finance, and related risk and affordability issues.

One delegate underscored the role of NGOs and the private sector in overcoming barriers and said positive incentives can be used to encourage adoption of technology, while another stressed that the Technology Mechanism should be an important component in overcoming barriers and noted the need for enabling frameworks for technology transfer. A final participant highlighted the importance of including all stakeholders.

On implementing results, in Group I, one participant stressed that championed technologies need to be extensions of countries' endogenous capacities, noting that if significant capacity building is needed, the wrong technology has been chosen. Another recalled presentations on bridging the idea-funding gap. One participant emphasized the fundamental nature of having high-level governmental commitment. The final commenter recalled that technology is only a tool, and technology transfer is not an ultimate goal but a first step.

In Group II, one participant said there should be a platform to share technologies and ideas to allow parties to jumpstart technology transfer before TNAs have been completed. On TAPs, delegates suggested including development strategies, NAMAs and technology mechanisms.

On interlinkages with other mechanisms, tools and processes, in Group I, one participant noted that TNAs are ahead of other processes on adaptation technologies, while another highlighted that guidance from above on the best technologies for drastically reducing developing country emissions while promoting their economic development. A further participant questioned the need to require so many different assessments and plans from developing countries. Another participant, from an international organization, mentioned the example of Montenegro, which is currently combining work and resources for multiple UNFCCC deliverables.

In Group II, one participant noted that TNAs should inform other mechanisms, tools and processes, without being prescriptive, he stressed that TNAs are beneficial, but stressed not prejudging ongoing work in the negotiations on the Technology Mechanism. He noted some of the key findings, including the utility of TNAs for NAMAs and NAPAs, provide "a good beginning" but had not been agreed on. Another noted that TAPs are the next step in the process, but there is little practical experience in developing them. He highlighted that TAPs are a policy framework to promote policy diffusion and identification of projects linked to finance requirements.

Following the breakout sessions, facilitators reported main points back to the larger workshop group. For Group I, Diagne reported on methodology, saying that having different processes for mitigation and adaptation technologies would be useful, and the handbook should be flexible enough to be used by countries with or without national development plans. On barriers, he reported that: TNA teams need to be broadened for barrier analyses, including experts from other countries; and that the supply side should be considered along with the demand side. On implementing results, he recalled that: capacity building and government commitment are crucial; R&D for indigenous technology development is important; and public funding is

needed to enhance private sector support. On interlinkages with other mechanisms, he said that: TNAs need to be mapped with, and evaluated against, other initiatives such as NAMAs, NAPAs, national communications and low carbon development strategies; they should be useful for the Technology Executive Committee; and UNEP/UNDP should include international contexts on development in the handbook, not only the climate change context.

For Group II, Weston said the discussion revealed: the importance of country context and that the TNA is a work in progress; barriers include access to finance and lack of information regarding barriers; capacity of regional centers as a barrier to scaling-up; and the benefits of a multi-stakeholder process. She noted that: the CTI-PFAN could provide a filter and this role could be strengthened or formally incorporated in the TNA process; TAPs are difficult to develop; TNAs could inform NAMAs, NAPAs, and low carbon development strategies and that these may need to be integrated into various country-level planning frameworks; and TNAs could inform a global overview of technology needs.

One delegate noted that during discussions no consensus had been reached and wondered whether conclusions would be presented during the 34th session of the UNFCCC Subsidiary Bodies. The Secretariat underscored the report would capture the elements important to TNAs and would not make any attempt to drive the process, and only reflect ideas presented. Another delegate highlighted the importance of capturing ideas so they could be incorporated into the TNA process.

SESSION V: THE WAY FORWARD

Chair Kumarsingh presented a summary of the workshop findings, emphasizing the utility of the workshop and thanking participants. He stated that participants had helped to: deepen understandings of experiences and lessons from conducting TNAs; gather insights on further needs and actions to pass on to Parties to assist in further implementing of TNAs; and enhance understanding of possible roles of TNAs in enhanced action on technology transfer for mitigation and adaptation. The Secretariat thanked participants and presenters and the workshop concluded at 5:17 pm.

UPCOMING MEETINGS

UNFCCC Subsidiary Bodies: The 34th sessions of the SBSTA and SBI will take place in June, along with meetings of the AWG-KP and AWG-LCA. **dates:** 6-17 June 2011 **location:** Bonn, Germany **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** secretariat@ unfccc.int **www:** http://unfccc.int

Vienna Energy Conference 2011 (VEC 2011): This Conference, organized by the UN Industrial Development Organization (UNIDO), will convene under the banner "Energy for All: Time for Action." Core themes to be addressed will include: agreeing on a common understanding of energy access; agreeing on a strategy to ensure universal access to modern energy services and increase energy efficiency by reducing energy intensity by 40% until 2030; identifying indicative targets and policies in support of these objectives; and prioritizing

key national and regional actions on energy access and energy efficiency. **dates:** 21-23 June 2011 **location:** Vienna, Austria **www:** http://www.unido.org/index.php?id=1001185

Climate Investment Funds (CIF) Partnership Forum 2011: The CIF Partnership provides an opportunity for stakeholders— governments, civil society, indigenous peoples, private sector and others—to contribute to deepening global understanding of climate change and development in the CIF context. **dates:** 24-25 June 2011 **location:** Cape Town, South Africa **contact:** CIF Admin Unit, World Bank **phone:** +1-202-458-1801 **email:** CIFAdminUnit@worldbank.org **www:** http://www. climateinvestmentfunds.org/cif/partnership_forum_2011_home

World Climate Research Programme's (WCRP) Open Science Conference: The World Climate Research Programme's conference will gather the international scientific community working to advance understanding and prediction of variability and change of the Earth's physical climate system on all spatial and temporal scales. The Programme is sponsored by the International Council for Science, the WMO and the UNESCO Intergovernmental Oceanographic Commission (IOC). **dates:** 24-28 October 2011 **location:** Denver, US **contact:** WCRP Joint Planning Staff **phone:** +41-22-730-8111 **fax:** +41-22-730-8036 **email:** wcrp@wmo.int **www:** http://conference2011.wcrp-climate.org/

UNFCCC COP 17 & COP/MOP 7: The 17th meeting of the COP and the 7th meeting of the COP/MOP will take place in Durban, South Africa. **dates:** 28 November - 9 December 2011 **location:** Durban, South Africa **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** secretariat@unfccc.int **www:** http://unfccc.int/

GLOSSARY

CTCN	Climate Technology Centre and Network
CTI	Climate Technology Institute
CTI-PFAN	Climate Technology Initiative-Private Financing Advisory Network
GEF	Global Environment Fund
GEEREF	Global Energy Efficiency and Renewable Energy Fund
IEA	International Energy Agency
MCDA	Multi-Criteria Decision Analysis
NAMAs	Nationally Appropriate Mitigation Actions
NAPAs	National Adaptation Plans of Action
PPP	Public private partnership
R&D	Research and development
SBI	Subsidiary Body on Implementation
TAC	Technical Advisory Committee
TAPs	Technology Action Plans
TEC	Technology Executive Committee
TNA	Technology Needs Assessments
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change

Sustainable Development Policy & Practice
http://uncsd.iisd.org/

A knowledge management project carried out by the International Institute for Sustainable Development Reporting Services (IISD RS) in collaboration with the UN System Chief Executives Board for Coordination (CEB)

This knowledgebase tracks international activities preparing for the UN Conference on Sustainable Development (UNCSD, or Rio+20).

It features:
- News on UN and intergovernmental activities (publications, meetings, statements, projects) related to the UNCSD. The posts are researched and produced by IISD's team of thematic experts, resulting in all original content, and they are searchable by several categories.
- A clickable world map, enabling searches of the latest sustainable development news by region.
- A calendar of upcoming UNCSD-related events, along with an automatically updating iCal application, through which the event data can be downloaded to your own calendar.

New posts to the knowledgebase are circulated via the *UNCSD Update*, which is distributed exclusively through the UNCSD-L listserve. UNCSD-L is a companion project managed by IISD RS. This community listserve offers participants an opportunity to post announcements regarding publications and meetings.

To receive the *UNCSD Update* and to subscribe to the UNCSD-L community listserve: http://uncsd.iisd.org/about-the-uncsd-l-mailing-list/

To subscribe to the iCal of UNCSD-related events: http://uncsd.iisd.org/icalendar/

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