



## UNFCCC WORKSHOP ON ENABLING ENVIRONMENTS FOR TECHNOLOGY TRANSFER: 9-10 APRIL 2003

The workshop on enabling environments for technology transfer convened from 9-10 April 2003, at the Het Pand Conference Center, Ghent University, Belgium. The workshop was organized by the Secretariat of the UN Framework Convention on Climate Change (UNFCCC) in collaboration with the Center for Sustainable Development, Ghent University. The workshop was convened in response to a request by the UNFCCC's Subsidiary Body for Scientific and Technological Advice (SBSTA) at its seventeenth session, held in October 2002. The SBSTA also requested the Secretariat to prepare a technical paper on enabling environments for the transfer of environmentally-sound technology (ESTs) for consideration by the UNFCCC Expert Group on Technology Transfer (EGTT) at its third meeting in late May 2003. In response to this request, the Secretariat commissioned the Tata Energy and Resource Institute (TERI) to develop a draft technical paper on the issue. The paper was submitted in early April.

Fifty-three representatives of governments, intergovernmental organizations, non-governmental organizations (NGOs), business and industry groups, and academic institutions attended the workshop. Plenary sessions on Wednesday, 9 April, and Thursday, 10 April, provided an overview of the technology transfer issue, reviewed the draft technical paper on enabling environments, and examined barriers and opportunities to technology transfer. On Thursday morning, participants also convened in two working groups to discuss: the means for governments to identify barriers to technology transfer and ways to overcome them; and the role that multilateral lending institutions, bilateral programmes and the private sector could play to assist governments in overcoming those barriers. Workshop participants also provided inputs for the work of the EGTT and elements for possible actions to promote enabling environments, for further consideration by the EGTT and the SBSTA.

### A BRIEF HISTORY OF THE UNFCCC AND TECHNOLOGY TRANSFER

Climate change is considered one of the most serious threats to the world's environment, with negative impacts expected on human health, food security, economic activity, water and other natural resources, and physical infrastructure. Global climate varies naturally, but scientists agree that rising concentrations of anthropogenic greenhouse gas emissions in the Earth's atmosphere are leading to changes in the climate. According to the Intergovernmental Panel of Climate Change (IPCC), the effects of climate

change have already been observed. Despite some lingering uncertainties, the majority of climate scientists believe that prompt and precautionary action is necessary.

The international political response to climate change began with the UN Framework Convention on Climate Change (UNFCCC). Adopted in 1992, the UNFCCC sets out a framework for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous interference" with the climate system. The greenhouse gases to be limited include methane, nitrous oxide, and, in particular, carbon dioxide. The UNFCCC entered into force on 21 March 1994. It currently has 188 Parties.

**TECHNOLOGY TRANSFER:** Technology transfer is considered a key element in combating climate change under the UNFCCC. Technology transfer activities have been on the agenda of every session of the SBSTA and the Conference of the Parties (COP). UNFCCC Article 4.5, which addresses the need for technology transfer, states that "developed country Parties...shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention," adding that "in this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties."

At SBSTA-16, held in June 2002, Parties adopted the 2002-2003 work programme of the Expert Group on Technology Transfer (EGTT), which focused on enabling environments for the

### IN THIS ISSUE

A Brief History of the UNFCCC and Technology Transfer . . .	1
Report of the Workshop . . . . .	2
Technology Transfer Overview . . . . .	2
Barriers to and Opportunities for Technology Transfer: Case Studies and Lessons Learned. . . . .	3
Working Groups . . . . .	5
Synergies and Consistency between UNFCCC Activities and Other Relevant Organizations in Supporting Enabling Environments for Technology Transfer . . . . .	6
Closing Session . . . . .	7
Things to Look for Before COP-9 . . . . .	7

This issue of the *Earth Negotiations Bulletin* © <enb@iisd.org> is written and edited by Karen Alvarenga <karen@iisd.org>, Duncan Marsh <duncan@iisd.org>, and Chris Spence <chris@iisd.org>. The Editor is Pamela S. Chasek, Ph.D. <pam@iisd.org> and the Director of IISD Reporting Services is Langston James "Kimo" Goree VI <kimo@iisd.org>. The Sustaining Donors of the Bulletin are The Netherlands Ministry of Foreign Affairs, the Government of Canada (through CIDA), the Swiss Agency for Environment, Forests and Landscape (SAEFL), the United Kingdom (through the Department for International Development - DFID), the European Commission (DG-ENV), the Danish Ministry of Foreign Affairs, and the Government of Germany (through German Federal Ministry of Environment - BMU, and the German Federal Ministry of Development Cooperation - BMZ). General Support for the Bulletin during 2003 is provided by the United Nations Environment Programme (UNEP), the Ministries of Foreign Affairs and Environment of Finland, the Government of Australia, the Ministry of Environment and the Ministry of Foreign Affairs of Sweden, the Ministry of Foreign Affairs and Trade of New Zealand, the Ministries of Foreign Affairs and Environment of Norway, Swan International, the Japanese Ministry of Environment (through the Institute for Global Environmental Strategies - IGES), the Japanese Ministry of Economy, Trade and Industry (through the Global Industrial and Social Progress Research Institute - GISPRI), and the Ministry for Environment of Iceland. The opinions expressed in the *Earth Negotiations Bulletin* are those of the authors and do not necessarily reflect the views of IISD or other donors. Excerpts from the *Earth Negotiations Bulletin* may be used in non-commercial publications with appropriate academic citation. For information on the *Bulletin*, including requests to provide reporting services, contact the Director of IISD Reporting Services at <kimo@iisd.org>, +1-212-644-0217 or 212 East 47th St.#21F, New York, NY 10017, USA.



transfer of ESTs. The SBSTA asked the EGTT to take into account Parties' views and relevant IPCC reports in implementing its work, and requested a brief progress report at SBSTA-17. SBSTA-16 also requested the Secretariat to: initiate an outreach programme to make its technology information system available to the public; update and maintain the system; assess the system's effectiveness and report on it at SBSTA-19; and cooperate with the Global Environment Facility (GEF), United Nations Development Programme (UNDP), and other relevant organizations and initiatives to develop a simplified handbook on methodologies for technology needs assessments, which it is to report on at SBSTA-18.

At SBSTA-17 in October 2002, Parties agreed to a decision (FCCC/SBSTA/2002/L.29/Add.1) requesting the SBSTA Chair to conduct consultations and ensure collaboration among expert groups on the cross-cutting issues of their work programmes, including issues relating to technology transfer and capacity building. The SBSTA also called on SBSTA-19 to consider innovative ways to address outcomes of the technology needs assessments under the EGTT work programme. It urged developed country Parties to continue to provide support to developing country Parties, noted several initiatives on technology transfer, and requested the Secretariat to prepare a technical paper and organize a workshop on enabling environments for technology transfer. The technical paper will be considered by the EGTT in late May 2003.

### REPORT OF THE WORKSHOP

Olivier Deleuze, Belgium's Secretary of State for Energy and Sustainable Development, opened the workshop on Wednesday morning, 9 April. He noted that technology transfer is a crucial instrument for the implementation of the UNFCCC and related agreements. Recalling the World Summit on Sustainable Development (WSSD) *Plan of Implementation* and the 2002 UNFCCC New Delhi Declaration, he highlighted the need for urgent action at all levels and in all relevant sectors to support mechanisms for the development, transfer and diffusion of ESTs, especially to developing countries and countries with economies in transition (EITs). Underscoring the importance of partnerships and interaction among research institutions and the public and private sectors, he noted that identifying and removing barriers are key responsibilities of governments. Deleuze expressed the hope that this workshop would contribute to the creation of conditions to enable technology transfer.

COP-8 President T. R. Baalu, India's Minister of Environment and Forests, stated that in order to promote technology transfer for climate change mitigation and adaptation, this workshop should enhance understanding of policy, regulatory and institutional barriers and opportunities, and focus on developed countries' role in transferring publicly-owned technologies and in providing incentives to the private sector. Reminding participants that the New Delhi Declaration focused on the dissemination of technology and on adaptation, Baalu highlighted the need for partnerships and cooperation among a range of stakeholders and suggested focusing on "green credit," waste minimization, favorable international terms of trade, and the needs of the most vulnerable individuals. He announced his plan to organize an international "Technology Bazaar" in New Delhi in November 2003, to take stock of progress on technology transfer in the context of the UNFCCC.

Tahar Hadj-Sadok, UNFCCC Deputy Executive Secretary, noted that at COP-7, Parties had reached a significant agreement on the implementation of technology transfer, adopting a framework for action and establishing the EGTT. He pointed out that sharing, analyzing and compiling experiences are useful for governments when designing policies.

### TECHNOLOGY TRANSFER OVERVIEW

On Wednesday morning, participants heard several presentations that gave an overview of the technology transfer issue. The presentations focused on three related topics: the development and transfer of technologies in the context of the UNFCCC; enabling environments for technology transfer; and a draft technical paper on enabling environments.

*Editor's Note: As a matter of policy, the Earth Negotiations Bulletin does not directly attribute statements made by participants in workshop sessions when requested to do so.*

#### TECHNOLOGY TRANSFER IN THE UNFCCC

**CONTEXT:** EGTT Chair William Kojo Agyemang-Bonsu highlighted the importance of transferring ESTs in implementing the UNFCCC. He drew attention to UNFCCC Article 4.5, which calls on Annex II Parties (developed country Parties) to take all practicable steps to promote, facilitate and finance technology transfer, particularly to developing countries. He observed that the Marrakesh Accords agreed to at COP-7 had established a framework for technology transfer, and had constituted the EGTT to support this work. He reported that the EGTT had formally convened twice and developed a work programme, and the challenge now is to move from discussion to supporting actual implementation of technology transfer. Stating that timely and appropriate technology transfer remains largely a "mirage," he called for greater collaborative efforts among all Parties to bridge the "ever increasing [technology] gap" between developing and developed countries.

Wanna Tanunchaiwatana, Manager of the UNFCCC's Technology Subprogramme, presented an overview of the UNFCCC and the Kyoto Protocol, noting that 106 countries have ratified the Protocol to date, and that this represents 43% of developed country emissions (55% is required for the Protocol to enter into force). Reflecting on technology transfer under the UNFCCC, she highlighted recent work in this area, including the technology needs assessments conducted in over 60 countries, and the information exchange facilitated by the TT:CLEAR website (<http://ttclear.unfccc.int/>). She said this workshop would provide input on the draft technical paper on enabling environments that had been called for by SBSTA-17 and prepared for the Secretariat. The workshop would also help identify possible next steps to promote enabling environments, as well as further actions to enhance work on technology needs assessments. Identifying upcoming challenges and tasks for the EGTT, she said it would need to consult with other groups that address "developing country issues" under the UNFCCC, in order to identify cross-cutting issues and potential synergies.

#### ENABLING ENVIRONMENTS FOR TECHNOLOGY

**TRANSFER:** EGTT member Bernard Mazijn (Belgium) described the evolution of discussions on technology transfer since the 1970s, noting that it was now considered an integral component in sustainable development, as demonstrated by the numerous references to the issue in the WSSD *Plan of Implementation*. He highlighted a recent EU initiative focusing on technology transfer in the context of climate change, sustainable production and consumption, water, soil protection and cross-cutting enabling activities. At the international level, he argued that common ground existed among developed and developing countries for the removal of barriers to technology transfer. While supporting a clear focus on technology transfer in the climate change context, he also called for developing synergies with other multilateral environmental agreements and at a "meta-level" with other agencies and processes.

Daniele Violetti, UNFCCC Secretariat, outlined the history of work on enabling environments in the climate change context, including various recommendations and decisions taken since SB-



5 in 1997. He took note of a survey (FCCC/SBSTA/1998/INF.5) carried out in 1997 by the Secretariat and the University of Amsterdam that had identified Annex I Parties' public policies for promoting technology transfer. These policies included measures to create awareness, disseminate information, provide technical assistance, create an appropriate fiscal environment, and remove trade barriers. Violetti also drew attention to another technical paper on barriers and opportunities to technology transfer (FCCC/TP/1998.1) that had identified institutional, political, technical, financial, general, and cultural barriers, as well as opportunities relating to legal instruments and tax regimes, partnerships, the dissemination of information on government programmes, and economic instruments and environmental standards.

Participants also heard a presentation on enabling environments from Ogunlade Davidson, Co-Chair of IPCC Working Group III. Noting the importance of broad stakeholder involvement, he said it is essential to identify the motivations that drive various stakeholders to engage in the technology transfer process. To develop an enabling environment for technology transfer, he said developed countries should support the development agenda and local capacities in non-Annex I Parties and EITs, establish systems that are sufficiently flexible to cope with the unique conditions in different developing countries, and support effective consultations and long-term commitments. Developing countries should establish a clear development agenda, identify indigenous capacities, coordinate external resources, set up an effective consultative process, and develop appropriate monitoring and evaluation systems.

**DRAFT TECHNICAL PAPER ON ENABLING ENVIRONMENTS FOR TECHNOLOGY TRANSFER:** Malini Ranganathan, UNFCCC Consultant, presented the draft technical paper, noting that a combination of instruments is needed to create enabling environments for technology transfer. Emphasizing that the paper does not recommend best practices but rather synthesizes implemented policies, she outlined the paper's structure, which includes chapters setting out a common understanding of enabling environments through experience sharing, and on connecting enabling environments with different sectors. The paper also contains case studies and conclusions relating to cross-cutting and other issues. She explained that the ten dimensions of enabling environments identified by the IPCC were referenced throughout the paper in order to analyze what has been done to date. This includes work on:

- national systems of innovation;
- human and institutional capacity;
- sustainable markets;
- national legal institutions;
- macroeconomic policy frameworks;
- social infrastructure and participatory approaches;
- codes, standards and certification;
- equity considerations;
- rights to productive resources; and
- research and technology development.

Ranganathan explained that the paper identifies barriers and enabling environments for technology transfer in different sectors of the economy. In the construction, transport, industrial and energy supply sectors, barriers related to failures in: reflecting economic and environmental costs in prices; enforcing regulations; ensuring awareness of relevant measures; and developing affordable cleaner technology. Positive measures to establish enabling environments included liberalization and deregulation, the setting of appropriate standards, support for market transformation, adaptive research and development, and the strengthening of capacities.

For agriculture and forestry, she noted barriers relating to sources of food and livelihood security for developing countries,

the high cost of patented technology, and the limited short-term profitability of some ESTs. Responses to these barriers could include involvement of NGOs and participatory programmes with stakeholders, cooperation with international institutions, the use of national plant breeding laboratories, and research and development. On solid waste management, barriers include limited finance, greenhouse gas abatement, insufficient technological know-how, and inadequate institutional capability. Responses could include measures to encourage private sector participation, recognition of socially-marginalized groups, proactive NGOs, and adaptive research and development.

In the areas of public health and coastal zone adaptation, barriers identified by the draft paper include the high degree of uncertainty and costs of advanced information gathering systems. Responses include the development of information on sea-level monitoring in the public domain, the active involvement of NGOs and national networks, and capacity building.

Identifying some cross-cutting issues raised in the paper, Ranganathan stressed that market instruments often play a more significant role for mitigation-focused sectors such as construction, industry, transport and energy, while government and socially-oriented organizations play the primary role in adaptation-focused sectors such as agriculture and forestry, and in coastal zone development. On the liberalization and restructuring of the energy sector, she indicated that a portfolio of policy instruments, public awareness raising, and regulation must be combined with market based measures. She said that efforts to create enabling environments for technology transfer are necessary in both investor and host countries.

**DISCUSSION:** In the subsequent discussion, a number of delegates said the draft technical paper was very useful, while several noted the absence of detailed empirical information. Responding to questions about the purpose of the paper, Ranganathan answered that it aims to provide background information for policy makers and will feed into the EGTT and SBSTA-18 discussions. One developed country speaker said the report could have considered certain issues in more detail, including the conditions and circumstances that have led to successes and failures, the issue of licensing, and the elements needed to replicate success from one area to others. Another developed country requested more information on the report's consideration of macro and micro level matters. Responding to these requests for more detailed information, Ranganathan observed that case studies of technology transfer in the context of environmental issues were not particularly well described in the existing literature. She also noted concerns that the document should not be overly long. One developing country participant stressed the importance of considering cross-sectoral issues. On the question of adaptation and mitigation responses, he suggested that some responses to climate change, such as pollution prevention, could be categorized as both adaptation and mitigation.

#### ***BARRIERS TO AND OPPORTUNITIES FOR TECHNOLOGY TRANSFER: CASE STUDIES AND LESSONS LEARNED***

On Wednesday afternoon, participants heard presentations on two related issues: barriers to and opportunities for technology transfer in specific sectors with regard to mitigation and adaptation; and enabling environments for technology transfer – incentives, standards, legal instruments and institutional arrangements. The session was chaired by EGTT Vice-Chair Richard Bradley (US).

**BARRIERS TO AND OPPORTUNITIES FOR TECHNOLOGY TRANSFER IN SPECIFIC SECTORS WITH REGARD TO MITIGATION AND ADAPTATION TECHNOLOGIES:** EGTT member Holger Liptow (Germany) presented case studies under a programme developed between Brazil and





Germany, in Minas Gerais, Brazil, aiming at energy policy and planning, energy efficiency and renewable energy sources. He described a project to establish centers that house shared/communally-owned machinery, and noted the need to determine users' expectations, the existence of a market for their product, and ways to enhance production. Ensuring suitable financial arrangements for the machinery and interaction with the relevant agricultural service organizations was also found to be important. Liptow noted that from 1995-2000, this programme identified and removed various obstacles, including inadequacies relating to:

- scientific, engineering and technical knowledge;
- research and test facilities;
- information relevant for strategic planning and market development;
- assessment of selected technologies and their appropriate adaptation;
- information on technology selection appropriate to development priorities;
- consumer awareness and acceptance of technologies; and
- technical standards and institutions for supporting the standards.

Andrej Kranjc, Ministry of Environment, Spatial Planning and Energy, Slovenia, identified three major steps in the technology transfer process: technology needs assessments, the creation of enabling environments, and the transfer or deployment of a given technology. Noting comments that the private sector was responsible for up to ten times more technology transfer than the public sector, he said it was clear the public sector had a lot of work to do. He suggested a strong focus on three issues raised in the IPCC's *Special Report on Methodological and Technological Issues in Technology Transfer*, namely human and institutional capacities, national legal institutions, and equity considerations. He also discussed the likely impact of EU expansion on countries with economies in transition, including strengthened national legal institutions and human and institutional capacity, as well as access to relevant EU programmes.

Frederick Manyika, Senior Environmental Officer, Tanzanian Division of Environment, presented a case study on barriers to the transfer of solar photovoltaics (PV), in Mwanza. Noting that less than ten percent of Tanzania's population has access to grid electricity services and that most rural communities use kerosene lamps for lighting, Manyika highlighted that solar PV technology is an economically viable option for off-grid electrification. He identified barriers to solar PV, including: limited awareness of and experience with this technology; inadequate business knowledge and capacity for distribution; the high costs involved in start-up, operation and maintenance; and the low purchasing power of rural communities.

Manyika also proposed some means of removing these barriers, including:

- building business knowledge and capacity for distribution;
- reducing tax and import duty;
- stimulating local manufacture and assembly of components;
- raising financial opportunities and public awareness;
- enacting appropriate legislation; and
- developing and enforcing standards.

He concluded that government support is a key component in creating energy efficiency and that technology transfer requires financial support.

Peter Pembleton, Industrial Development Officer, UN Industrial Development Organization (UNIDO), reported on its work on technology transfer and on promoting the Clean Development Mechanism (CDM) in a number of developing countries. Identifying interventions taken at the national level, he highlighted work

to develop appropriate legal frameworks, including the incorporation of international treaties such as the UNFCCC into the national legal system. Other national interventions have included:

- reducing and simplifying investment approvals and procedures;
- increasing the amount of public funding allocated to the development of innovative systems, structures and institutions;
- creating venture capital to support innovation;
- reducing banks' interest rates; and
- achieving macro-economic stability.

**DISCUSSION:** In the ensuing discussion, Holger Liptow responded to a question about the dissemination of lessons learned during individual projects by noting that stakeholder organizations could disseminate information both internally and externally. In the case of the Brazil-Germany programme, the approach had spread to other utilities, even outside of Brazil. On a question about mitigation and adaptation, Andrej Kranjc indicated that, so far, more emphasis had been given to mitigation-related technologies. However, he predicted that the profile of adaptation-related technologies would increase over time. Noting participants' comments on the CDM, Liptow highlighted the interest in using this mechanism to help achieve technology transfer.

**ENABLING ENVIRONMENTS FOR TECHNOLOGY TRANSFER: INCENTIVES, STANDARDS, LEGAL INSTRUMENTS AND INSTITUTIONAL ARRANGEMENTS:** Andrea Marroni, Expert on Developing Countries' Issues with the Italian Ministry for Environment and Territory, presented a paper on experiences and lessons learned from Italy's programmes and projects relating to technology transfer. He explained that Italian cooperation activities are aimed at, *inter alia*:

- continuing research and investment to promote diffusion of renewable energy technology and transfer of low emissions technologies under the UNFCCC;
- testing new technologies;
- fostering competitiveness of recipient countries; and
- stimulating long-term investments to enhance stakeholders' participation and financial mechanisms.

Marroni highlighted various lessons learned, including that the private sector is the main source of technology, that strengthening the enabling environment in host countries is a prerequisite for technology transfer, and that relevant international bodies should support recipient countries in their domestic reform efforts. On financing technology transfer for developing countries, he said Italy favors debt-related actions such as the Debt for Environment Swap, which provides for the debt conversion into local currency funds devoted to environmental protection.

Li Junfeng, Energy Research Institute, China, highlighted major barriers for technology transfer, including a lack of capacity for innovation and diffusion, obstacles to market creation and expansion, the initial cost of technology research and development, and inadequate institutional arrangements and human capacity. He said that specific actions to encourage technology transfer included incentives for the private sector to deliver technologies to developing countries, and stressed that actions to create enabling environments must be undertaken in both developed and developing countries. He concluded that technology transfer needs special financial support and could be transmitted through official development assistance (ODA).

Shigetaka Seki, Director for Environmental Affairs with Japan's Ministry of Economy, Trade and Industry, outlined Japan's recent work on technology transfer. This includes the establishment of an inter-ministerial Liaison Committee for using the Kyoto mechanisms. The Committee will design Joint Implementation (JI) and CDM project approval and procedures guidelines and consider



JI/CDM project applications. He outlined some public policies to facilitate CDM projects, including: a Kyoto mechanisms guidebook in Japanese; development of Japan's National Registry System; the Asia CDM capacity-building initiative; and cooperation through the Climate Technology Initiative (CTI), an intergovernmental organization founded by a number of OECD countries to promote technology transfer. He concluded that the major barriers for the CDM and JI include:

- uncertainties related to institutional settings, rules and procedures in host countries, including interpretation of the concept of sustainable development;
- uncertainties related to rules and procedures under the UNFCCC;
- difficulties in setting baselines;
- protection of intellectual property rights;
- pricing that fails to reflect true costs; and
- insufficient enforcement of legislation.

Michael Gerbis, President of the Delphi Group, presented a private sector perspective on enabling environments in the context of the CDM and JI. Stressing the opportunities offered by these mechanisms to facilitate technology transfer, he said barriers to private sector investment include uncertainty about the levels of risk involved, and restrictive rules and regulations. Outlining some of the lessons learned during the Canada-Argentina Capacity Building Initiative, he said the private sector required clear risk assessment, strong returns on investment, consistent and transparent rules from government, and a high potential for replication of the business opportunity. While cautioning that the building of enabling environments is often "difficult and slow," he concluded that the process can succeed if it remains clear and straightforward.

**DISCUSSION:** In the ensuing discussion, Michael Gerbis responded to a question about the impact of the recent economic difficulties in Argentina on the Canada-Argentina initiative, noting that stakeholders had agreed to proceed with the project regardless, since it presented an opportunity to improve efficiency.

Noting the discussion on the CDM and JI, one developing country speaker stressed that technology transfer under the CDM should be additional to the technology transfer that takes place under Article 4.5. In response, Gerbis acknowledged that the issue of additionality is a "gray area," but noted that the CDM can be used to support technology transfer and ultimately help move forward on implementing Article 4.5.

**CHAIR'S SUMMARY:** Summarizing the afternoon's discussions, Session Chair Richard Bradley noted that the traditional differences between North and South remained unresolved, with developed countries often focusing on the private sector and market forces, while developing countries tend to stress the role of the public sector and intergovernmental agreements. However, he highlighted participants' unanimous agreement that governments have an important role in terms of developing enabling environments. He also drew attention to participants' comments on the importance of sustainable, continuing engagement in technology transfer projects, on the need to consider how projects can lead to multiple benefits, and on the "adaptation versus mitigation" issue. He suggested that the linkages between micro and macro approaches might require further discussion. He also noted comments on the role international mechanisms, such as the CDM, could play in encouraging technology transfer.

#### WORKING GROUPS

On Thursday morning, 10 April, participants met in two parallel working groups to stimulate a more free-flowing discussion on several key questions relating to enabling environments for technology transfer, taking into account the previous day's plenary

discussion on the draft technical paper and case studies. Both working groups included participants from developing and developed countries and addressed identical set of questions. Working Group I (WG-I) was chaired by Holger Liptow (Germany) with Susanne Haefeli (World Business Council for Sustainable Development) as Rapporteur. Working Group II (WG-II) was chaired by Kishan Kumarsingh (Trinidad and Tobago), with Richard Bradley (US) as Rapporteur. Participants' discussions in the working groups were reported to the plenary and are to provide inputs and contribute to the final report of the workshop. The questions raised in the two working groups, and participants responses, are set out in the section below.

**What are the key elements for creating enabling environments conducive to transfer of ESTs, keeping in mind the various dimensions possible?** Participants in WG-I made the following points: governments have an important role to play in creating enabling environments for the transfer of ESTs; policy actions can be taken at macro, meso and micro levels; technology transfer should be integrated into overall national development frameworks, as well as broader environmental, economic, social and health policies; technology transfer efforts should be directed at adaptation as well as mitigation; both national and international standards can enhance flows of technology transfer; and risk reduction and management are important in creating enabling environments.

Delegates in WG-II identified a number of key elements, including the importance of: comprehensive awareness and involvement among stakeholders; appropriate means for resolving stakeholders' conflicting interests; links between sustained capacity building and academic institutions; clear definitions of public and private interests; and the incorporation of sustainable development goals in policies and programmes.

**What could governments do to identify the barriers to technology transfer and the means to overcome these barriers?**

WG-I recommended a number of policy actions to support enabling environments for technology transfer, including:

- needs assessments;
- evaluation of existing policies that influence the enabling environment;
- intra-governmental coordination;
- protection of intellectual property rights and legal contracts;
- political support for programmes and institutions that support technology transfer;
- seed investment programmes to stimulate private sector investment; and
- capacity building for major stakeholders.

Participants also discussed a proposal to place government actions to identify and address barriers to technology transfer in a four-element framework focusing on clarity, consistency, transparency and dissemination.

In WG-II, participants pointed out the need for, *inter alia*:

- greater communication and interaction between key ministries;
- delineation of the roles of the private and public sectors in both developed and developing countries;
- economic incentives targeting industries that are not currently participating in international trade; and
- ensuring that technology transfer initiatives are compatible with national sustainable development agendas.

**What role could other stakeholders – such as multilateral lending institutions, bilateral programmes, NGOs, and the private sector – play in creating an enabling environment for technology transfer?** WG-I participants responded to this question by highlighting, *inter alia*, the engagement of multilateral and bilateral implementing agencies, such as the GEF and regional



institutions in creating enabling environments for technology transfer; and building the capacity of regional experts to support technology transfer to least developed countries (LDCs).

WG-II stressed the need to identify different roles for each stakeholder, foster awareness among donor agencies of the environmental impacts of their projects, increase dialogue between ministries and donor organizations, and promote cooperation between NGOs and other stakeholders.

**What role could international organizations such as the World Trade Organization (WTO) and multilateral environment agreements (MEAs) play in promoting enabling environments for technology transfer? How could lessons learned from other MEAs be used in creating enabling environments for technology transfer?** Participants in WG-I responded to these questions by underscoring the overlap between technology transfer efforts under the UNFCCC and other MEAs and recommending increased communication among technology transfer bodies across various MEAs. They also suggested further investigating the linkages between WTO rules on trade regimes and technology transfer under the UNFCCC.

WG-II suggested, *inter alia*:

- increasing cooperation between the secretariats of MEAs to identify synergies and avoid overlaps and duplication of effort;
- minimizing potential conflict between international agreements, including the WTO and UNFCCC;
- enhancing dialogue and maximizing synergies between relevant MEAs and organizations; and
- providing a forum for discussion and international understanding of the interactions between environment and socio-economic issues.

**Is there a common ground for the removal of barriers for technology transfer in general, not only from an environmental perspective, in both Annex I and non-Annex I Parties?** Participants in WG-I acknowledged that developed and developing countries often face similar barriers to market penetration. They suggested that some actions to cultivate an enabling environment, particularly at the macro level, may have benefits for the transfer of all technologies, and not just for ESTs. They also considered ways to ensure that actions be targeted at supporting the transfer of ESTs.

WG-II identified poverty alleviation as a common ground for the removal of barriers for technology transfer within the context of sustainable development.

**What could the next steps be to address the issue of enabling environments in the context of the UNFCCC process?** In WG-I, participants advocated defining concrete actions as a follow-up to the draft technical paper. Discussions in WG-II highlighted some possible next steps, including:

- a high-level segment for discussing enabling environments at the next COP;
- a workshop involving the secretariats of various MEAs and other organizations;
- recognition of successful EST projects through awards;
- the organization of fora for the private sector to exchange experience on ESTs;
- support and funding for the establishment of, and exchange between, academic programmes in developing countries, and the provision of scholarships for studies on climate change and ESTs that are consistent with national technology transfer priorities; and
- the enhancement of domestic educational programmes on climate change and ESTs.

**Can you identify concrete suggestions for improvement of the draft technical paper?** Participants in WG-I suggested including or embellishing the following elements:

- analysis of trends and common elements of technology transfer across all sectors;
- examining failures and success stories, and methods of replicating the latter;
- consideration of Parties' national communications to observe the evolution of technology transfer under the UNFCCC; and
- increased attention to technology transfer for adaptation.

In WG-II, delegates suggested including a glossary of terms, employing simpler language, and checking for accuracy.

#### **SYNERGIES AND CONSISTENCY BETWEEN UNFCCC ACTIVITIES AND OTHER RELEVANT ORGANIZATIONS IN SUPPORTING ENABLING ENVIRONMENTS FOR TECHNOLOGY TRANSFER**

On Thursday afternoon, 10 April, delegates met in plenary to hear presentations and engage in discussions on synergies and consistency between the UNFCCC and other organizations. The session was chaired by SBSTA Chair Halldor Thorgeirsson (Iceland).

Mark Radka, Energy Programme Coordinator for the Technology, Industry, and Economics Division of the United Nations Environment Programme (UNEP), expressed the opinion that there is generally a high-level of consistency in the work of various agencies and organizations on technology transfer related to climate change. However, he noted that some overlap or duplication of work can exist, particularly on more straightforward projects – for instance, in the publication of handbooks on the CDM by several different organizations. Regarding enabling environments for technology transfer, he noted the limited number of potential partners with the necessary expertise in developing countries, and said this needs to be addressed.

Observing that “synergy is not accidental,” Radka said technology needs assessments should identify gaps in the enabling environment, and that relevant organizations and agencies should help fill these gaps. He suggested that the UNFCCC Secretariat could help coordinate efforts to fill such gaps. He also highlighted the importance of information sharing and awareness raising. Drawing attention to the proposal made earlier in the meeting for a workshop looking at enabling environments in the context of other MEAs, he noted UNEP's expertise in this area, and its willingness to be involved in organizing such a meeting.

Peter Pembleton, UNIDO, noted the need to develop synergies with various MEAs and pointed out that each agency has different mandates and deals with different stakeholders. He underscored that there is scope for fostering synergies among secretariats and suggested that synergies could be developed within each country.

Recognizing that technology plays a key role in the sustainable growth of developing countries and EITs, Elmer Holt, CTI, highlighted the essential role of the private sector in the long-term transfer of technology. He highlighted CTI's collaboration with the GEF, UNDP, UNFCCC and UNEP on issues relating to country-driven technology needs assessment and essential measures to foster the engagement of business and financial communities in technology transfer. Holt underscored a variety of benefits of collaborating with other MEAs, including: leveraging limited financial and human resources on issues of common interest; integrating and strengthening regional and country level activities through information-sharing and joint activities; and providing a platform for multilateral approaches and consistency in technology transfer.

Florin Vladu, UNFCCC Secretariat, reported on the information on enabling environments provided under the TT:CLEAR website, which includes case studies from various countries and international organizations, website addresses and links, and





papers on innovative capacities. He noted possible additional information that the TT:CLEAR could provide for fostering enabling environments, including additional information on certification, equity consideration, social impacts and training, and links to other clearinghouses. Janos Pasztor, UNFCCC Secretariat, highlighted that governments have an important role to play in enabling environments for technology transfer and described some UNFCCC activities in organizing workshops and establishing the TT:CLEAR. He noted that the ten dimensions of enabling environments identified by the IPCC could provide a useful basis for each participant to identify the means to contribute in creating enabling environments for technology transfer. He also highlighted the need to ensure coherence both within and outside the UNFCCC.

**DISCUSSION:** Highlighting the need for synergies beyond the UN system, a participant from a developing country expressed concern at the lack of involvement of the Bretton Woods institutions in these discussions, especially given their impact on policy making in developing and least developed countries. In response, Wanna Tanunchaiwatana said representatives from the World Bank and other organizations had been invited but were unable to attend, although the GEF had sent some information to the UNFCCC Secretariat prior to the meeting. Elmer Holt noted that the Bretton Woods institutions had contributed to the consultative process, and said he detected a growing environmental focus within those institutions. Janos Pasztor said mainstreaming environment issues in such institutions is happening gradually, although he would prefer to see it occur more rapidly. He believed the WSSD and CSD processes could assist in this mainstreaming exercise. Mark Radka noted the funding limitations placed on the GEF, and suggested that the SBSTA – through the EGTT – could recommend to the GEF possible priority areas in terms of technology transfer and enabling environments. He supported directing this funding towards education, training and strengthening relevant institutions. One developed country speaker noted that it is rare for governments to direct one intergovernmental body to tell another intergovernmental body what to do, and drew attention to governance issues. However, he also observed that information sharing with such institutions was fairly common. Janos Pasztor noted that the UNFCCC is required to give guidance to the GEF on funding priorities in relation to climate change.

Another developed country participant highlighted the value of translating documents into multiple languages. Responding to this comment, Mark Radka noted that, while this could be carried out formally through the UN system, it is often more efficient and cost effective for individual countries and organizations to take the lead.

Reflecting on these discussions, Chair Thorgeirsson said the climate change process is moving towards the mainstream and placing the issue in a broader context, with the effect of enhancing enabling environments.

### CLOSING SESSION

Participants heard closing statements on Thursday afternoon. EGTT Chair William Agyemang-Bonsu thanked the UNFCCC staff for all their efforts and all participants for their attendance, especially COP-8 President T.R. Baalu. He also expressed his appreciation to the Government of Belgium and other countries for sponsoring this workshop, and thanked the *Earth Negotiations Bulletin* for its accurate, detailed reporting on climate change meetings.

Wanna Tanunchaiwatana, UNFCCC Secretariat, congratulated all EGTT members, Chairs and Rapporteurs, Ghent University and local staff, the UNFCCC technology team, and colleagues from UN agencies for their support in this workshop. Chair Agyemang-Bonsu closed the meeting at 5:18 pm.

## THINGS TO LOOK FOR BEFORE COP-9

### 14TH ANNUAL EARTH TECHNOLOGIES FORUM

**(ETF):** This meeting will be held from 22-24 April 2003, in Washington DC, United States. For more information, contact: ETF; tel: +1-703-807-4052; fax: +1-703-528-1734; e-mail: earthforum@alcalde-fay.com; Internet: <http://www.earthforum.com>

### INTERNATIONAL CONGRESS ON RESTRUCTURING THE ENERGY SECTOR IN TRANSITION COUNTRIES:

This event will be held from 28-30 April 2003, in Leipzig, Germany, and is organized by Verbundnetz Gas AG, Stadtwerke Leipzig and the World Bank. For more information, contact: Pauline Massart; tel: +49-341-1492-393; fax: +49-341-91-37-669; e-mail: [p.massart@ombiasy.com](mailto:p.massart@ombiasy.com); Internet: <http://www.restc.com>

### 19TH LATIN AMERICAN CONFERENCE OF RURAL ELECTRIFICATION (CLER):

This meeting will be held from 5-10 May 2003, in Havana, Cuba. For more information, contact the organizers at: tel: +537-202-7096; fax: 537-202-9372; e-mail: [cler@geprop.cu](mailto:cler@geprop.cu); Internet: <http://www.geprop.cu/cler/cler.htm>

### EUROPEAN REGIONAL WORKSHOP ON THE NEW DELHI WORK PROGRAMME ON UNFCCC ARTICLE

**6:** This workshop will be held from 6-8 May 2003, in Le Grand Hornu, Belgium. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); Internet: <http://unfccc.int/sessions/workshop/060503/index.html>

### INTERNATIONAL CONFERENCE ON ENERGY AND THE ENVIRONMENT (ICEE):

This event is being organized by the University of Shanghai for Science and Technology and George Washington University and will be held from 22-24 May 2003, in Shanghai, China. For more information, contact: Daoping Liu; tel: +86-21-6568-9564; fax: +86-21-6568-0843; e-mail: [dpliu@online.sh.cn](mailto:dpliu@online.sh.cn); Internet: <http://www.gwu.edu/%7Eeem/ICEE/firstpagenew.htm>

### UNFCCC EXPERT GROUP ON TECHNOLOGY

**TRANSFER (EGTT):** The third meeting of the EGTT will be held from 30-31 May 2003, in Bonn, Germany. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); Internet: <http://www.unfccc.int>

### 18TH SESSIONS OF THE UNFCCC SUBSIDIARY

**BODIES (SB-18):** The Subsidiary Body for Implementation and the Subsidiary Body for Scientific and Technological Advice will meet from 4-13 June 2003, in Bonn, Germany. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); Internet: <http://unfccc.int/sessions/sb18/index.html>

### INTERNATIONAL SOLAR ENERGY SOCIETY (ISES) SOLAR WORLD CONGRESS 2003:

This congress will be held from 14-19 June 2003, in Göteborg, Sweden. For more information, contact: ISES; tel: +46-31-81-8220; fax: +46-31-81-8225; e-mail: [ISES2003@gbg.congrex.se](mailto:ISES2003@gbg.congrex.se); Internet: <http://www.congrex.com/ISES2003/>

### THE THIRD WORLD CONFERENCE ON CLIMATE

**CHANGE:** This conference will be held from 29 September-3 October 2003, in Moscow, Russian Federation. For more information, contact: Conference Secretariat; tel: +95-252-0708; fax: +95-252-0708; e-mail: [wccc2003@mecon.ru](mailto:wccc2003@mecon.ru); Internet: <http://www.meteo.ru/wccc2003/econc.htm>

**UNFCCC COP-9:** The ninth Conference of the Parties to the UNFCCC will be held from 1-12 December 2003, in Milan, Italy. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: [secretariat@unfccc.int](mailto:secretariat@unfccc.int); Internet: <http://www.unfccc.int/>