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DEVELOPMENT AND TRANSFER OF TECHNOLOGIES

Report of the UNFCCC workshop on enabling environments for technology transfer, Ghent, Belgium, 9–10 April 2003

Note by the secretariat

Summary

In response to a request by the Subsidiary Body for Scientific and Technological Advice, at its seventeenth session, the secretariat organized a workshop on enabling environments for technology transfer in Ghent, Belgium, from 9 to 10 April 2003.

This document summarizes the discussions that took place at the workshop. Based on recommendations from two working groups and general discussions in the plenary, a provisional list of possible next steps to address the issue of the enabling environments for technology transfer under the UNFCCC process has been identified.

This report also aims to facilitate discussions on possible approaches to enhance the implementation of the enabling environments component of the technology transfer framework agreed in the Marrakesh Accords (decision 4/CP.7).

CONTENTS

I. INTRODUCTION

A. Mandate

1. The Subsidiary Body for Scientific and Technological Advice (SBSTA), at its sixteenth session, adopted the work programme of the Expert Group on Technology Transfer (EGTT) for the biennium 2002–2003. The work programme covers six key areas: technology needs assessments, technology information system, enabling environments, capacity-building, mechanisms, and cross-cutting activities (FCCC/SBSTA/2002/6, para. 38 (b) and annex II).

2. The two main activities envisaged for the enabling environments part of the EGTT programme of work for the year 2003 were the preparation of a technical paper on enabling environments for technology transfer, and the organization of a workshop on enabling environments for technology transfer.

3. The SBSTA, at its seventeenth session, requested the secretariat, resources permitting, to organize a workshop on enabling environments for technology transfer in April 2003, and to report on the findings of the workshop to the SBSTA at its eighteenth session. At the same session, it welcomed the offer of the Government of Belgium to host the workshop (FCCC/SBSTA/2002/13, para. 36 (j)–(k)).

B. Scope of the note

4. This report of the UNFCCC workshop on enabling environments for technology transfer, held in Ghent, Belgium, from 9 to 10 April 2003, contains a summary of the 14 workshop presentations and the panel and general discussions, and the outcomes of two working groups. All presentations are available in hard copy, on CD-ROM, and on the secretariat web site.[1]

5. This report was prepared in consultation with the Chair and Vice-Chair of the EGTT. It takes into account presentations by country nominated representatives and experts, and discussions at the workshop. Ideas on possible further activities on enabling environments for technology transfer, suggested in the working groups and in plenary sessions, can serve as input to further discussions and considerations by the SBSTA at its eighteenth session.

C. Possible action by the SBSTA

6. The SBSTA may wish to take note of the information contained in this document and, where necessary:

(a) Seek technical advice from the EGTT on possible next steps for the promotion of enabling environments for technology transfer under the Convention;

(b) Provide further guidance to the secretariat with regard to its work to facilitate the work of the EGTT and the Parties for the promotion of enabling environments for technology transfer.

II. REPORT OF THE WORKSHOP

A. Introduction

7. The workshop was organized by the secretariat with the kind assistance of the Department for Energy and Sustainable Development, Government of Belgium, and the Centre for Sustainable Development, Ghent University, Belgium. Financial support for the organization of the workshop was provided by the governments of Belgium, Canada, Finland, Germany, Japan (NEDO/CTI), the

[1] http://unfccc.int/sessions/workshop/090403/index.html

United Kingdom and the United States. At the same venue, the EGTT also convened its one day special meeting on 11 April 2003. The Chair of the EGTT will provide his oral report on the outcomes of this special meeting, and of the third meeting of the EGTT scheduled for 30–31 May 2003 in Bonn, to the SBSTA at its eighteenth session.

8. The agenda of the workshop was designed, in consultation with the Chair of the EGTT, to address issues relating to enabling environments for technology transfer and to provide inputs to the draft technical paper on enabling environments for technology transfer. The draft technical paper was made available to participants as a background document for the workshop.

9. The workshop was opened jointly by Mr. Olivier Deleuze, Secretary of State for Energy and Sustainable Development, Belgium, and Mr. T. R. Baalu, Minister of Environment and Forests, India, and President of the eighth session of the Conference of the Parties (COP 8). The workshop was chaired by Mr. William Kojo Agyemang-Bonsu of Ghana, Chair of the EGTT. The Chair of the SBSTA, Mr. Halldor Thorgeirsson, also participated in the workshop.

10. In his opening remarks Mr. Deleuze highlighted the need for urgent action at all levels and in all relevant sectors to support mechanisms for the development, transfer and diffusion of environmentally sound technologies (ESTs), especially to developing countries and countries with economies in transition (EITs). He also noted that identifying and removing barriers are key responsibilities of governments.

11. Mr. Baalu emphasized that the New Delhi Declaration focused on the dissemination of technology and on adaptation, and highlighted the need for partnerships and cooperation among a range of stakeholders. He suggested some priority areas for activities, such as “green credit,” waste minimization, favourable international terms of trade, and the needs of the most vulnerable individuals.

12. Mr. Tahar Hadj-Sadok, Deputy Executive Secretary, UNFCCC secretariat, highlighted the important step that Parties had made at COP 7 by adopting the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, of the Convention and by establishing the EGTT. He also underlined the importance of technology transfer in the context of the UNFCCC process and the benefit from experience sharing and exchange of information when Parties design national and international policies.

13. The workshop was attended by 53 participants: 17 from non-Annex I Parties representing Africa (6), Asia and the Pacific (5), Latin America and the Caribbean (5) and small island States (1); 17 from Annex I Parties; representatives from four international organizations and bodies and three non-governmental organizations; and one representative from the private sector.

14. The aims of the workshop were:

(a) To facilitate the work of the EGTT on enabling environments for technology transfer;

(b) To facilitate the implementation of the technology framework (decision 4/CP.7);

(c) To identify the barriers and challenges to a successful transfer of environmentally sound technologies and ways and means to overcome these barriers;

(d) To discuss the main elements for an enabling environment consistent with the requirements of Article 4.5 of the Convention;

(e) To recommend to the SBSTA possible further actions or next steps to implement the enabling environments component of the framework for meaningful and effective actions to enhance the implementation of Article 4.5 of the Convention as defined in decision 4/CP.7.

15. This report summarizes the proceedings of each session of the workshop; the headings of the following sections correspond to the workshop agenda items.

B. Overview of the issue of technology transfer

16. The Chair of the EGTT, Mr. Agyemang-Bonsu, presented an update on the work of the EGTT since its establishment at COP 7 and described the EGTT programme of work for 2003. He also stressed the challenge before the EGTT and the Parties to move from discussions encompassing elements of the technology framework towards actions for the implementation of technology transfer activities on the ground. Recognizing the difficulties in transferring technologies to where they are most needed at the right time, the EGTT Chair urged all Parties to increase efforts to cooperate in an effective way to bridge the gaps between developed and developing countries.

17. Ms. Wanna Tanunchaiwatana, UNFCCC secretariat, presented an overview of technology transfer activities under the UNFCCC process, focusing on key elements of the technology framework including the work done on technology needs assessments and the useful information available on the secretariat's TT:CLEAR web site.

C. Enabling environments for technology transfer

18. The issue of enabling environments in the context of the climate change process dates back to 1997 when the SBSTA at its fifth session took note of a list of topics that could be addressed by the secretariat in a series of papers. This list included activities undertaken by governments to facilitate the introduction and use of environmentally sound technologies (FCCC/SB/1997/1).

19. In 1998 the secretariat prepared a technical paper on barriers and opportunities relating to the transfer of technology (FCCC/TP/1998/1) that 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. This technical paper also served as a background document for the three regional workshops organized under the technology transfer consultative process in response to decision 4/CP.4.

20. The paper and the workshop reports provided bottom-up contributions on all issues relating to technology transfer and set the basis for the definition of the framework for meaningful and effective actions to enhance the implementation of Article 4.5 of the Convention. The framework defines enabling environments as "government actions, such as fair trade policies, removal of technical, legal and administrative barriers to technology transfer, sound economic policy, regulatory frameworks and transparency, all of which create an environment conducive to private and public sector technology transfer" (FCCC/CP/2001/13/Add.1, decision 4/CP.7, annex, para. 12).

D. Draft technical paper on enabling environments for technology transfer

21. The draft technical paper does not recommend best practices but rather synthesizes implemented policies in order to suggest options for further activities that could be replicated in different countries. It also sets out a common understanding of enabling environments through experience sharing and case studies relating to cross-cutting and other issues in different sectors.

22. The draft technical paper covers research and analysis, supported by numerous case studies documented by governments, international organizations and the private sector following the 10 dimensions of enabling environments identified by the Intergovernmental Panel on Climate Change (IPCC) special report on *Methodological and Technological Issues in Technology Transfer*. This includes work on:

(a) National system of innovation

(b) Human and institutional capacity

(c) Sustainable markets

(d) National legal institutions

(e) Macroeconomic policy frameworks

(f) Social infrastructure and participatory approaches

(g) Codes, standards and certification

(h) Equity considerations

(i) Rights to productive resources

(j) Research and technology development.

23. The draft technical paper also identifies some barriers and enabling environments for technology transfer in different sectors of the economy. For example, in the construction, transport, industrial and energy supply sectors, barriers relate mainly to failures in: reflecting economic and environmental costs in prices; enforcing regulations; creating awareness about relevant policies and measures; and developing affordable cleaner technology. In the same sectors, measures to create enabling environments could include: liberalization and deregulation; establishment of appropriate standards; support for market reforms; support for research and development; and strengthening of human and institutional capacities.

24. Other examples are taken from the agriculture and forestry sectors, where barriers relate to food availability and security of basic living standards, the high cost of patented technology, and the limited short-term return on investment of some ESTs. Measures to overcome these barriers could include involvement of a wider range of stakeholders, cooperation with international organizations, and an increase in investment on research and development. In the public health and coastal zone sectors, barriers suggested by the draft technical paper include the high degree of uncertainty and costs of advanced monitoring systems. Responses could include the development of public sea-level monitoring systems, the active involvement of NGOs and national networks, and capacity-building.

25. The draft technical paper was well received by workshop participants. It served as a good background and generated several ideas for further discussion by the workshop participants. Many participants viewed this draft technical paper as very useful, but some would like to see more detailed empirical information. Suggestions for improving the paper include: a more comprehensive analysis of technology transfer for adaptation; an increase in the number and regional distribution of case studies to better represent differences around the world; and a deeper analysis of conditions and circumstances that have led to successes and failures in technology transfer activities, including elements needed to replicate success in different countries.

26. The revision of the draft technical paper will take into consideration inputs from the workshop and from the EGTT. The secretariat will prepare a final draft of the technical paper for consideration and finalization by the EGTT at its third meeting on 30–31 May 2003 in Bonn. The paper will be made available to the SBSTA at its eighteenth session.

E. Barriers and opportunities for technology transfer in specific sectors with regard to mitigation and adaptation technologies

27. Presentations on experiences and lessons learned in the context of removal of barriers to the transfer of ESTs and the creation of enabling environments conducive to an effective transfer of technology highlighted different perspectives, from investor and recipient countries. Some key elements were stressed on both sides, giving an interesting signal of convergence.

28. Barriers from an investor point of view were identified as:

(a) Lack of technical and scientific knowledge, including limited experience with new technologies

(b) High start-up costs to adopt new technologies and lack of proper financial instruments

(c) Lack of technical standards and institutions for supporting these standards

(d) Inadequacy of information on technology selection that is coherent with national development priorities

(e) Low consumer awareness and acceptance of new technologies.

29. Some ideas on possible actions to overcome those barriers, from the recipient country point of view, were suggested:

(a) Building business knowledge and capacity for the dissemination of new technologies

(b) Reducing tax and import duties

(c) Simulating local manufacture and assembly of components

(d) Rising financial opportunities and public awareness

(e) Stimulating the introduction of appropriate legislation, including the development and enforcement of standards.

30. The important role of international organizations was also highlighted. Experience with their work in certain countries showed that additional assistance can be provided, for example, in contributing to the development of appropriate legal frameworks that incorporate into the national legal system the goals of international treaties such as the UNFCCC. Other support activities could include the stimulation of venture capital towards innovation and policies to achieve macroeconomic stability.

F. Enabling environments for technology transfer: incentives, standards, legal instruments and institutional arrangements

31. Experts from Annex I and non-Annex I Parties, and the private sector, described their experiences with technology transfer projects. Experts from Annex I Parties focused on:

(a) The need to continue to support research and investment to promote the diffusion of ESTs and enhance the transfer of technology under the UNFCCC

(b) The need to stimulate long-term investments to enhance stakeholders' participation

(c) The need to strengthen enabling environments in recipient countries as a prerequisite for technology transfer

(d) The uncertainties relating to institutional arrangements and legal frameworks in some recipient countries which are slowing the technology transfer process

(e) The key role of the private sector as the main source of technologies.

32. In discussing financing for technology transfer to developing countries, an alternative action such as the Debt for Environment Swap, which provides for debt conversion into local currency funds devoted to environmental protection, was also presented as a viable option to increase the amount of funds made available to developing countries.

33. In presenting lessons learned from their experience, experts from non-Annex I Parties focused on:

(a) The need for actions to create enabling environments in developed and developing countries

(b) Encouraging the private sector, via specific incentives, to deliver new technologies to developing countries

(c) The need for financial support through official development assistance to foster technology transfer

(d) The high initial cost of new technology research and development

(e) The need to strengthen institutional arrangements and human capacity which are vital to initiate a successful process of technology transfer.

34. In presenting lessons learned from his experience, a representative from the private sector focused on:

(a) The concerns relating to uncertainty about the levels of risk involved and restrictive rules and regulations existing in some countries

(b) The key elements for the successful involvement of the private sector, for example, clear risk assessment, returns on investment, and a high potential for replication of the business opportunity

(c) The opportunities offered by the Kyoto mechanisms in involving companies in the UNFCCC process.

35. In drawing conclusions from the above presentations, the following messages were reiterated:

(a) Developed countries give more attention to the private sector and market forces, and developing countries focus more on the role of the public sector and intergovernmental agreements. Participants agreed that governments have an important role in developing enabling environments;

(b) Adaptation and mitigation are often closely related, and the need for projects that could lead to multiple benefits is increasing;

(c) International mechanisms such as the clean development mechanism and joint implementation could play an important role in fostering the transfer of technology and eventually in helping the implementation of Article 4.5 of the Convention.

G. Synergies and consistency between UNFCCC activities and other relevant organizations in supporting enabling environments for technology transfer

36. A panel discussion on synergies in activities in supporting enabling environments, chaired by Mr. Halldor Thorgeirsson, Chair of the SBSTA, with panellists from the UNFCCC secretariat, the United Nations Environment Programme, the United Nations Industrial Development Organization and the Climate Technology Initiative, highlighted the following points:

(a) There is generally consistency in the work of various agencies and organizations on technology transfer relating to climate change. However, overlaps and duplication of work may exist, and there is scope for fostering existing synergies and creating new ones;

(b) There is a need to develop synergies between various multilateral environment agreements (MEAs) and to continue to exchange information among the secretariats of different MEAs;

(c) Other organizations working on enabling environments for technology transfer, including the Bretton Woods institutions, were encouraged to continue and to increase their work relating to the 10 dimensions of the enabling environments for technology transfer identified in the IPCC special report on *Methodological and Technological Issues in Technology Transfer*;

(d) The development of synergies at the national level with different national stakeholders is a key action towards successful technology transfer.

H. Outcome of the working groups: conclusions and suggested possible next steps

37. Two working groups were set up to share and discuss ideas on several key questions relating to enabling environments for technology transfer, taking into account the plenary discussions, the draft technical paper and case studies. Both working groups included participants from developing and developed countries and addressed an identical set of questions. Working group I was chaired by Mr. Holger Liptow (Germany) with Ms. Susanne Haefeli (World Business Council for Sustainable Development) serving as rapporteur. Working group II was chaired by Mr. Kishan Kumarsingh (Trinidad and Tobago) with Mr. Richard Bradley (USA) serving as rapporteur. Discussions in the working groups were reported and discussed in the plenary.

38. The working groups emphasized that governments play an important role in creating enabling environments for the transfer of ESTs and that technology transfer should be integrated into overall national development goals. They also acknowledged that national and international standards can enhance technology transfer; and the importance of a comprehensive awareness and involvement of all stakeholders. A clear distinction between the role of governments and the private sector in both developed and developing countries was also stressed.

39. Suggestions relating to the role of governments in identifying and removing barriers included:

(a) Greater communication and interaction between key ministries;

(b) Political support for programmes and institutions that support technology transfer;

(c) Support for investment programmes to stimulate private sector investment, including economic incentives targeting industries that are not currently participating in international trade;

(d) Ensuring that technology transfer initiatives are compatible with national sustainable development agendas;

(e) Support for capacity-building activities and programmes for major stakeholders.

40. The working groups also addressed the links between MEAs, the World Trade Organization (WTO) and other international organizations in creating enabling environments for technology transfer. They suggested increasing cooperation and information flow between the secretariats of MEAs and other international organizations to identify synergies and avoid overlaps and duplication of efforts, and further investigating the link between WTO rules on trade regimes and technology transfer under the UNFCCC.

I. Recommendations for the SBSTA on enabling environments for technology transfer

41. Based on the reports of the two working groups and the discussions that followed the presentation of these reports to the plenary, it is recommended that the SBSTA:

(a) Requests the secretariat to organize a workshop to enhance the dialogue and maximize synergies between MEAs and other international organizations in promoting enabling environments for technology transfer;

(b) Requests the secretariat to initiate a UNFCCC technology award programme to recognize successful EST projects;

(c) Proposes the organization of a high-level segment for discussing enabling environments at the next COP. (Some participants were also of the view that it may be not feasible to introduce such segment at COP 9 and suggested that it may be more practical to plan it for a subsequent session of the COP);

(d) Organizes a specific forum for the private sector to exchange experience on ESTs;

(e) Provides support and funding for the establishment of, and exchange between, academic programmes in developing countries, and scholarships for studies on climate change and ESTs that are consistent with national technology transfer priorities;

(f) Enhances domestic educational programmes on climate change and ESTs.

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