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DEVELOPMENT AND TRANSFER OF TECHNOLOGIES (DECISION 13/CP.1)

Submissions by Parties

Note by the secretariat

1. At its eighth session, the Subsidiary Body for Scientific and Technological Advice (SBSTA) invited Parties to provide, by 15 August 1998, for compilation into a miscellaneous document, their views regarding: (a) technology development and transfer, and capacity building; and (b) the tasks described in document FCCC/SB/1997/1, and any additional tasks, as well as the strategic focus of the secretariat's work programme on the development and transfer of technologies (see FCCC/SBSTA/1998/6, para. 58).

2. Eight submissions have been received. In accordance with the procedures for miscellaneous documents, these submissions are attached and reproduced in the language in which they were received and without formal editing.

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* In order to make these submissions available on electronic systems, including the World Wide Web, these contributions have been electronically scanned and/or retyped. The secretariat has made every effort to ensure the correct reproduction of the texts as submitted.

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PAPER NO. 1: AUSTRIA
(on behalf of the European Community and its member States)

DEVELOPMENT AND TRANSFER OF TECHNOLOGIES

Austria, on behalf of the European Community and its Member States, would like to submit the views on technology transfer and capacity building as well as the strategic work on the development and transfer of technologies, as concluded by SBSTA and contained in Doc. FCCC/SBSTA/1998/6.

The EU expects the project-based flexible mechanisms established in the Kyoto Protocol to make a significant contribution to technology transfer.

The EU will reply to the proposals on Technology Development and Transfer and on Capacity Building as submitted by G77 and China during the eighth meeting of SBSTA and contained in document FCCC/SBSTA/1998/CRP.1 at the ninth meeting of SBSTA.

Work programme

With respect to the question of SBSTA's work on technology transfer, the EU believes that the idea of developing a comprehensive strategy for the Secretariat's work is an excellent one. It would indeed invite one of its officers to undertake informal consultations on its technology work, and its relationship to other international organisations, at the ninth session of SBSTA.

This work should primarily focus on what Governments and international organisations, such as international financial institutions, can do to improve technology co-operation. We must recognise that the private sector is the primary agent for technology transfer within and between countries. Through its day to day operations and investments, and working through supply chain mechanisms, it applies technical, managerial and entrepreneurial skills to make a reality of new ideas, and continually develops, adapts and improves old ones, making the benefits available through its products and services.

But private entities do not operate in a vacuum. Companies work within a framework of policies set by Governments, including policies developed and applied at the regional and international levels.

The European Union believes that consideration of technology issues needs to focus on the factors that influence technology development and diffusion. It needs to consider what shapes the demand for, and supply of environmentally friendly technologies and the roles of the various public and private sector players. Output should be focused on concrete actions aimed at stimulating demand and overcoming obstacles to supply.

The EU would therefore propose the identification and dismantling of institutional barriers to technology transfer as a topic for inclusion in the resulting work programme. For such work, the technology needs survey is also relevant.

Centres and Networks

The EU would refer to its previous views on this subject, which are contained in document FCCC/SBSTA/1998/MISC.4 and FCCC/SBSTA/1998/MISC.5. We believe that due to the considerable number of already existing centers there is no real need for the creation of new ones. Moreover, activities aimed at strengthening technological capabilities for the implementation of the Convention in developing countries should not be confined to specialized technology centers. They should rather take place within existing multilateral and bilateral co-operation frameworks and through private sector activities. Activities should address specific demands of firms and build on the analysis and the dissemination of best practice in technology co-operation.

Technology needs

Document FCCC/SBSTA/1998/INF.5 demonstrates the difficulties that non-Annex II Parties may face in identifying their priority needs for technology and technology information. And it is clear that technology transfer can only be successful if it is in response to a clearly defined need, as stated in the submission from South Africa contained in document FCCC/SBSTA/1998/MISC.3. The EU believes that the correct framework for identifying technology and technology information needs is the national communication. Therefore, the most practical step for the Secretariat to take would be to identify methodologies and best practice to enable non-Annex II Parties to identify their needs for technology transfer.

Such work should not concentrate only on new technologies. It is important to recognise that technology transfer involves co-operation in the transfer of skills and knowledge, not just technological hardware. Much can be achieved by improving the management of existing infrastructure: improving the efficiency of power plant and other industrial plant and the energy efficiency of buildings.

The EU welcomes the existing trends towards greater public participation, resulting in more demand-driven efforts at capacity building and the transfer of environmentally sound technology. Public - private partnerships can offer a means of increasing access to, and transfer of, environmentally sound technologies.

The EU stresses the need for legal and policy frameworks that would facilitate the transfer of environmentally sound technology and are conductive to technology related private sector investments.

Technology cooperation between and among economic actors of developed and developing countries and countries with economies in transition remain a key element. Efforts at enhancing technology cooperation should recognize the critical role of business and industry in technology development, transfer and diffusion, while recognizing the responsibility of Governments to develop policy, legal and institutional frameworks in order to promote technology development, transfer and co-operation.

The UN-FCCC Secretariat should look into the relationship between technology cooperation and technology transfer also with a view to involving the private sector and the necessary policy, legal and institutional frameworks needed for an improvement of the actual situation.

PAPER NO. 2: CAMBODIA

COMMENTS ON TECHNOLOGY DEVELOPMENT TRANSFER AND CAPACITY BUILDING

The UNFCCC secretariat should make planning to implement on education, training and public awareness for developing countries and the topics should be considered to the condition of the region.

The developing countries will implement their commitments depends on the extent to which developed countries will implement their own commitments related to provision of financial resources and transfer of technology, taking into account that the first and overriding priorities for developing countries are economic and social development and poverty eradication.

The GEF should organize programme to support and improve capacity building for developing countries, so that they can make planning for greenhouse gas emission collection data and find out technology to reduce its emission to atmosphere. The GEF should also promote specific project to train and set up new technology to the national specialist of developing countries.

PAPER NO. 3: GEORGIA

PROPOSALS OF GEORGIA

- Views and comments on technology development and transfer, and capacity building (FCCC/SBSTA/1998/6, para.58 (j) (i) and para. 58 (j) (ii)).

Taking into account the following barriers in the process of technology transfer:

Lack of incentives for private sector to invest and implement otherwise feasible measures for mitigation GHG. The main incentive- the access to the market of developing countries and countries in transition is not enough.

Lack of free capital in private sector of host countries. As it is known, GEF and other funds for grants give financial support only for incremental costs. Drawing up the investments for rehabilitation of old or construction of new technologies is very difficult and long term process for the countries with the economy in transition (absence of development plans even for 3-4 years ahead, non supportive legislative and regulatory framework, high risk, low collection of tariffs).

Lack of concrete demonstration project (insufficient financial support for completing the cycle feasibility study-demonstration project) showing not only the technical, but also the economic, environmental and financial feasibility of project with environmentally friendly technologies.

Delay of processes for privatization in countries with economies in transition which increase the risk for foreign partners. (The mechanisms for collection of tariffs is not always clear).

Energy produced from renewables in most cases requires to be included in the grid (in the case of wind) or is expensive in developing countries.

The most of the grants are for feasibility study. We recognize the necessity of feasibility studies for investors and in the process of technology transfer but it is waste of time, finance and labour if it is not in progress. Most of these feasibility studies have no continuation in pilot and demonstration projects. Only after the implementation of this full cycle will be possible to draw up the private sector to the technology transfer process.

We agree with the position that facilitation the developing countries and countries in transition to establish National or Regional Centers for Clean Technology Transfer removes most of above mentioned barriers.

We suggest that it is very important to establish International Center for getting the clean technologies from developed country and then transferring them to the developing countries and countries in transition and not only for gathering and disseminating information on clean

technologies and “know-how” (like GREENTIE and others). We recommend the secretariat to make the transfer process more centralized which makes it more efficient for the host countries Along with the transfer of ecologically sound technologies and Know-how from developed countries to developing countries a possibility is to be provided for the implementation of advanced and competitive technologies and Know-how elaborated in developing countries themselves.

PAPER NO. 4: MAURITIUS

VIEWS FROM PARTIES ON TECHNOLOGY DEVELOPMENT AND TRANSFER AND THE SECRETARIAT'S PROGRAMME

(i) Technology development and transfer, and capacity-building.

Technology development in Annex I Countries has already reached an advance stage. At the same time some technologies must have been developed between Annex I and non Annex I countries through common projects. An assessment of these technologies need to be undertaken especially those that are using strategies to slow down the global warming. Transportation will surely be the most important one.

During transfer of technologies between donor and recipient countries the following measures have to be taken into consideration:

- Objective and purpose of the transfer;
- Adaptability of the transferred technology;
- Modifications and innovations to enhance its efficiency;
- Capacity building available in recipient countries to absorb the technology in the national system;
- Transfer mechanism;
- Priority of maximizing profits; and
- Form of assistance to strengthen local capacity needs to integrate such technology.

Capacity building will play an important role in technology transfer especially to have the necessary human resources for a particular technology choice, its selection and adaptation with a view to innovate further in the future to increase its efficiency. Counterparts integration during the implementation of a technology by Consultants could pave the way.

(ii) Tasks described in document FCCC/SB/97/1

(a) Technology inventory data base

A survey be carried out among all Parties to gain maximum information on all technologies, existing at national level, in various fields such as Transport, Agriculture etc. to prepare an inventory on a sectorial basis. This inventory to be updated at a fixed interval of time and disseminated to Parties for their consideration and use.

(c) Technology information centres

Existing regional and sub-regional centres, either from the UN Organisations, national government, regional grouping to be used at the beginning for the collection and dissemination of technology information and to monitor progress.

A mechanism to be developed, whereby Parties could access to this information easily, for example through a web site developed by the Secretariat or managed by a UN Organisation like UNEP or UNIDO, whichever is more experienced in awareness campaign.

(d) Technology and Technology Information Needs

This will depend upon individual countries, whether they would like to have technologies for mitigation or adaptation purposes. The technology inventory data base will take care of this problem once it has been established. Mauritius, being a small island state, would prefer to borrow or use technology that are more suitable for adaptation measures.

(f), (g) and (h) could be discussed at the coming SBSTA Session to arrive at a consensus. These will be more of a policy measure decisions which will have to be endorsed by Parties.

I sincerely believe that the Secretariat must start work, at the soonest, on items (a) and (c).

PAPER NO. 5: PHILIPPINES

DEVELOPMENT AND TRANSFER OF TECHNOLOGY

Bases for action: The Framework Convention on Climate Change provides the basis for action of the Parties to the Convention in Article 4.5 on the matter of commitments by Annex II countries to "promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particular developing country Parties..."

Article 4.1.(c) also provides that all Parties, based on their common but differentiated responsibilities, and their specific national and regional development priorities, objectives and circumstances shall "promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes" for the control, reduction or prevention of anthropogenic emissions of GHGs in all relevant sectors.

Article 11.1 defines a mechanism for the provision of financial resources on a grant or consessional basis "including for the transfer of technology."

Article 12.3 states that Annex II countries shall "incorporate details of measures taken in accordance with Article 4, paragraphs 3, 4 and 5" in its national communications. Article 10.2 (b) provides for the consideration of the information communicated by Annex I Parties by carrying out reviews of policies and measures and their effects.

The Conference of the Parties then adopted Decisions 13/CP.1, 7/CP.2 and 9 CP.3 on the basis of these Articles. In particular, Decision 7/CP.2, paragraph 5, provides that the Conference of the Parties review "at each session of the Conference of the Parties... the implementation of Article 4.5 and 4.1(c) of the Convention as a separate agenda item under 'matters relating to commitments.'"

The Kyoto Protocol of the FCCC, in continuing to advance the implementation of commitments undertaken under Article 4.1 of the Convention, specifically provides in its Article 10 (c) that all Parties cooperate in the development and transfer of technology, "including the formulation of policies and programmes for the effective transfer or environmentally-sound technologies that are publicly owned or in the public domain, and the creation of an enabling environment for the private sector to promote and enhance the transfer of, and access to, environmentally sound technologies." Article 11.2 (b) of the Protocol provides for the financial resources needed to advance these existing commitments that are covered by its Article 10.

The Government of the Philippines therefore recognizes the commitment of developed country Parties on the matter of transfer of technology as a commitment both under the Convention and its Kyoto Protocol, when the latter enters into force. It also recognizes that much still remains to be done, four years after the first meeting of the COP. The Philippines deplores attempts to confine transfer of technology to the use of overseas compliance mechanisms under the Kyoto Protocol.

In order to move forward on this issue, from gathering information into action, the Philippines would like to urge a focus of technology development and transfer activities on capacity-building. In this regard, the results of the 6th Session of the UN Commission on Sustainable Development (April 1998) provide relevant recommendations and in its paragraph 57 (c) recognizes that "the development of human and institutional capacities to adapt, absorb and upgrade technologies, as well as to generate technological knowledge, is essential for technology transfer, management and diffusion." The secretariat might be urged by the Parties to focus its activities on this issue on ways and means to promote capacity-building.

In the light of recent developments in the FCCC, adaptation technologies should be given particular attention, also through additional guidance to the financial mechanism. The low GHG reduction targets in the Kyoto Protocol and current scientific evidence on the continued adverse effects of climate change and increasing vulnerabilities of developing countries require that adaptation should at last be given the necessary attention.

It is at the same time important to look to the transfer of technologies related to renewable energy production, energy efficient utilities, and "environment-friendly" transportation to assist developing countries in avoiding GHG emission in the course of their pursuit of their development goals.

In order to facilitate this transfer, including through financial assistance on grant and concessional terms, the Philippines also supports the establishment of a Technology Transfer Mechanism (TTM), as proposed by the Group of 77 and China at the June sessions. To service the special needs of Parties, discussions leading to the establishment of the Intergovernmental Technical Advisory Panels (ITAPs), should be finalized at the next session of the FCCC subsidiary bodies. Technology information centres that are relevant to the needs of developing countries, and consistent with the decisions of the Parties, in particular Decision 10/CP.2, should likewise be agreed upon.

PAPER NO. 6: SAMOA
(On behalf of the Alliance of Small Island States (AOSIS))

INITIAL VIEWS ON TECHNOLOGY AND TECHNOLOGY INFORMATION NEEDS OF DEVELOPING COUNTRIES

Introduction

AOSIS welcomes this opportunity to present further views on the development and transfer of technologies, especially as this relates to technology and technology information needs of developing countries. Several member States of AOSIS have in the past responded to the survey prepared by the UN Framework Convention on Climate Change (UNFCCC) Secretariat, and this paper is intended to further elaborate on the points raised to date.

Although small island developing States have many of the same technology needs as other developing countries, there are certain particular constraints of scale that makes the technology needs of small island developing States somewhat unique. Initially in the negotiations, AOSIS was of the view that for the small island developing States the primary focus should be on adaptation technologies. However, given the serious nature of the problem of climate change, and the less than adequate effort which the industrialised countries are willing to undertake, as evidenced by the Kyoto Protocol, AOSIS sees the need for all countries to do what they can, if the necessary support is forthcoming. Hence, AOSIS will also be looking into the possibilities for mitigation activities.

I. Technology transfer in general

There is evidence to suggest the basic position to be that a proportion of technology is held or owned by Governments and public institutions and that Governments exercise significant control and influence over the technological knowledge produced in publicly-funded research and development institutions. In short, there is potential for the generation of publicly-owned technologies which could be made accessible to developing countries.

The difficulty is that most of these research and development institutions are bound by their domestic legislation/regulations to certain terms and conditions affecting, inter alia, the use of these environmentally sound technologies at home, and issuance of licences for their use by domestic companies. This does not necessarily deny access and licence agreements for companies in developing countries, although it does make the terms rather stringent and often discouraging. Yet, if the international community is serious about resolving potentially disastrous global environmental problems, then there would be significant potential for the sharing and transfer of publicly-owned and environmentally sound technologies. AOSIS believes that there would be a good case for these technologies to be treated differently from other technologies. The incorporation of publicly-funded technologies in transfer and funding arrangements under multilateral environment agreements, especially with the Montreal Protocol experience in mind, would be of great potential value.

II. Technologies for mitigation

There has been a lot of work done on this aspect of technology development in AOSIS member States. However, the scale of the application of most of the new technologies would make their usage in the small island developing States difficult. AOSIS is therefore of the view that consideration be given to modifying mitigation technologies to make them more useful to the small island developing States. In particular, consideration should be given to concentrating on those technologies which are low cost, proven, high security and offers environmental benefit and which are also of greatest relevance to small island developing States, such as renewable energy technologies, and demand side management options, such as end-use energy conservation technologies, for the energy sector.

III. Technologies for adaptation

The members of AOSIS are at different stages in their national assessments of their vulnerabilities to climate change and the potential methods for adaptation to climate change. It has been recognised by AOSIS that in-depth studies, research and analysis will be required in order to assess as accurately as possible what the effects of climate change will be on the individual countries and regions of the group.

There is a great deal of work being done to make these assessments. More critically, there is existing urgency to respond with the right technology to the needs of several low-lying small island developing States whose national freshwater supplies are already significantly contaminated by saline intrusion caused by the rising sea levels and changes in ocean temperatures. Once this work becomes finalised in some member States of AOSIS, preliminary requirements for adaptation can be discussed. It is expected that in the process of making these assessments that the member States of AOSIS will identify a number of options and ideas for adaptation. However, it is recognized that the expertise in adaptation technology is available in all regions of the world, and that much of the available technologies are unavailable to the small island developing States. It is also clear that research programs and further studies on adaptation technologies could usefully complement and strengthen the efforts of the member States of AOSIS. AOSIS therefore calls for a co-operative arrangement to be developed in the context of the UNFCCC to better harness the creative capabilities of the scientific and technological communities in the development of new, proven and innovative adaptation technologies which are applicable to those States most vulnerable to climate change.

IV. Technology information - collection and dissemination

As part of the efforts by the small island developing States in assessing their vulnerabilities, there are also ongoing programs to seek information on the existing adaptation technologies. There are also several channels that could readily be utilised by the UNFCCC if such a decision can be reached at Buenos Aires. The work of the United Nations Development Program (UNDP) on Small Island Developing States Network (SIDS/NET) and Small Island Developing States Technical Assistance Program (SIDSTAP), which were started as a result of the Barbados UN Global Conference on the Sustainable Development of Small Island Developing States, are potentially valuable starting points for future collection and dissemination of

technology information. In this regard, AOSIS calls for the strengthening of these programs indicated above, while ensuring the availability of collected information through both electronic and other means. Assistance should also be given to connect existing centers with each other, SIDS/NET and other mechanisms, as a matter of priority.

V. Regional and sub-regional technology centres

In order to ensure that the collection and dissemination of technology information progresses in an effective manner, it is important that regional and sub-regional centres be established for this purpose. Where applicable, these may be housed with an existing institution, in order to economise as far as possible and to complement on-going activities. However, in some regions and sub-regions there may be a need to establish new centres.

VI. Financial requirements

AOSIS is of the view that work on technologies and technology information will be an important aspect of the UNFCCC process. Member States of AOSIS are already devoting considerable time, effort and funding to this work. It is clear that the financial and technical support of the international community will be vital if the work is to progress further. AOSIS therefore calls for such support to be made available to the countries and institutions involved in this work through multilateral and bilateral support mechanisms.

In conclusion, AOSIS reiterates the importance of concentrating international efforts on the development and transfer of appropriate, affordable and environmentally sound technologies and securing an international commitment to energy conservation and efficiency requirements for the development of renewable sources that can be used by all developing countries, but especially by small island developing States.

PAPER NO. 7: SWITZERLAND

TECHNOLOGY TRANSFER

In response to the call for comments at the eighth session of the Subsidiary Body for Scientific and Technological Advice on technology transfer, Switzerland presents the following views.

As noted by SBSTA at its eighth session, the national communications of non-Annex I Parties are an important means of identifying technology and technology information. Nevertheless, it seems that the identification of these technologies should not result from a theoretical exercise, but should result from real needs for implementing national strategies and national plans to combat climate change which take into account the specific needs of each non-Annex I Party and its national priorities for development.

In our view, in order to assure that technology transfer takes places in the best conditions, the following elements should be taken into account:

i) The national communications should correspond to a real national process for the elaboration of a national strategy to combat climate change in which all stakeholders have taken part; barriers to the implementation of the Convention should be removed in non-Annex I Parties

ii) no pressure of technology lobbies should interfere in the process of identifying technology needs;

iii) Human and institutional capacity building programmes should accompany the transfer of technology in order to assure sustainability;

iv) The process of identifying technology needs should be decentralised and take into account real existing demand of local populations and of the economy;

v) A reform of the framework conditions for facilitating the transfer of technology and the removal of barriers should accompany this process; and

vi) the private sector should be the driving force of the initiatives of technology transfer.

In our view, the GEF is one important player for technology transfer. We are convinced that in its learning process, GEF is now able to include the lessons learnt in transferring technology. It is also able to take into account the specific national circumstances of non-Annex I Parties in order to assure sustainable technology transfer. To that purpose, the GEF should consider as a priority the identification of project concepts where social, environmental and economic benefits (locally and globally) could be combined (win-win).

PAPER NO. 8: UNITED STATES OF AMERICA

COMMENTS ON DEVELOPMENT AND TRANSFER OF TECHNOLOGY

The United States welcomes the Secretariat's progress report on Development and Transfer of Technology (FCCC/SBSTA/1998/5) and the discussion at the Eighth SBSTA session in Bonn, in June 1998. We remain firm in our belief that technology development and diffusion are key components to addressing the climate change issue.

In our view, technology will flow most quickly and easily to those countries with the proper enabling environment to attract private sector technologies. Promoting such an environment thus becomes the primary objective of government-to-government cooperation; success will be marked by a better identification and implementation of innovative enabling activities that can lead to increased technology diffusion and that encourage the replication of similar projects in other countries. Actions may be technology and sector-specific, and may also include efforts to create stable macroeconomic conditions, transparent laws, and open trade and investment policies.

Technology Information Needs Survey

We read with interest the summary of the technology and technology information needs survey of developing country parties (FCCC/SBSTA/1998/INF.5), and congratulate the Secretariat, the University of Amsterdam and others involved on a very useful effort to obtain systematic information from a number of Parties to the FCCC on technology, and technology information needs and experiences. The surveys and resulting discussion in SBSTA have been useful in focussing attention and identifying common problems across many countries. This summary leads us to a number of conclusions:

- It is our strong view that the "top down," passive survey approach has reached its limits of utility in this area.

- Technology transfer issues are complicated and site and technology specific, and generic survey instruments administered by mail are unlikely to be sufficient for the level of detail that would help those in developed countries to really ascertain developing country technology needs in order to achieve concrete results.

- Many technology needs, opportunities, barriers and responses are only real and practical when applied to a specific country (or smaller region) sector or subsector, and time horizon, in the context of a broader development strategy.

Technology Diffusion: A Bottom-up Approach

In order to advance the technology needs and responses discussion in a practical sense, there is a need for approaches which move toward more country-specific, sectoral and interactive approaches. Properly understanding the range of applications needed is a key step in the process.

We believe that the most useful approach to technology diffusion is a country-by-country, bottom-up approach – where specific assistance is administered to address a specific problem. There are already examples of bottom-up approaches benefiting developing countries.

The U.S. Agency for International Development (USAID) is co-funding with the U.S. Energy Association a "utility partnership program" to bring U.S. and developing and transition country utilities together to address environment and related management issues. Over 36 partnerships have been established in 20 countries. A summit meeting of all utility partners is planned for the World Energy Congress this September in Houston, at which a handbook on utility climate change options will be made available. This program matches the technical expertise in a specific sector in a developed country with experts in developing and transition countries which can benefit from the transfer of information and technical assistance.

- One mechanism which the U.S. Government finds extremely promising is the Technology Cooperation Agreement. This concept is already being explored in at least two pilot efforts:

  - The Technology Cooperation Agreements Pilot Project (TCAPP), supported by US AID, US EPA, and US DOE, and implemented by the US National Renewable Energy Laboratory, working with expert teams in 6 countries.

  - The IEA, with support from the UK, is developing a proposed technology cooperation agreement pilot project with partners in China to explore opportunities for improving the efficiency of coal-fired power plants.

- The Climate Technology Initiative (CTI), currently chaired by the United States, with membership drawn from FCCC Annex II Parties, is also organizing other activities which could be relevant to this Pilot Program.

  - The CTI conducted a CTI/Industry Joint Seminar on Technology Diffusion in Asia during May 1998, in Beijing, China. This event, attended by representatives from 13 countries in the Asian region, was held for the purpose of sharing information among decision makers in the private and public sectors to establish meaningful dialogue on ways of increasing climate market activity in the region. Based upon extensive input from the developing country representatives, it was clear that generic solutions are inappropriate; technologies applied must be consistent with the sustainable development goals of the particular country or region. Further, building capacity is an essential step along the path to effective and lasting technology diffusion. Due to the success of this event, additional technology diffusion seminars are being planned elsewhere. Summaries of the outcomes from these seminars will be presented at Buenos Aires in November.

  - The CTI has established three Working Groups focusing on the following three areas (1) Capacity Building; (2) Technology Assessment, Analysis, and Strategy; and (3) Research and Development. Near-term activities underway through these working groups include:

- outreach/capacity building efforts (such as training courses on energy efficiency and management approaches for developing country representatives engaged in the analytical and/or decision making process); and

- the establishment of partnerships with developing countries under which in-country and outside technical experts will collaborate on the specific growth/energy needs and plans of the country with the goal of increasing the application of climate-friendly technologies in meeting those needs.

- Since being launched in 1995, the CTI has continued to promote the objectives of the Framework Convention by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices for all activities and greenhouse gases.

- Seminars, workshops and other mechanisms foster communication among industry representatives and interested governments. They can be effective ways of moving beyond the broad expression of technology needs to detailed identification of the policies and programs needed to overcome barriers and encourage private sector transfer of and investment in the desired technologies in a specific national setting.

- The United States also recognizes that significant progress has already been made in some developing countries in the advancement and commercialization of various technologies applicable to such key economic sectors as energy and transportation. The availability of these technologies provides important and timely opportunities for south-south cooperation which we endorse and encourage.

These are just a few examples of pilot activities underway or being planned now which could help address the problems of technology needs at a detailed and practical level. The United States proposes that COP 4 include in its technology transfer decision the establishment of a pilot program to encourage Parties to demonstrate practical specific and constructive mechanisms achieve clear identification of technology needs, opportunities, barriers and responses for specific technology areas and economic subsectors of interest. The Secretariat could serve as a focal point for reporting of various pilot efforts initiated, and should compile and synthesize results on these activities as they become available and report on these to the COP through the SBSTA.

Centers and Networks

As noted in the Secretariat's paper, considerable effort has already been expended in identifying and communicating with technology experts and existing centers in developing and transition countries. Results of this effort, as well as the considerable time spent debating the issue by Parties indicates that there is a widespread recognition that improvements are needed in the flow of information on key technologies and technology services and in the capacity within developing countries to access and utilize this information. It is clear from this work that:

- there are a large number number of expert centers and information networks already in operation in developing and transition countries;

- many of these provide useful services but for a variety of reasons are not reaching many potential users;

- many of these in-country centers and experts have difficulty identifying, obtaining and evaluating the quality of information which currently exists on the internet (as well as in many other forms);

- paradoxically there is a huge and rapidly increasing amount of relevant information currently available on the internet, and users are also increasing rapidly within developing countries as well as in industrialized countries.

- there are a large number of activities underway or planned which are increasing (and can be expected to continue to increase) the access of experts in developing countries to sustainable technology information.

The United States does not expect additional value-added from further surveys or questionnaires. Rather, the SBSTA should provide general guidance on a proposed approach and on specific questions, and seek to address some of the options for moving forward identified in the Secretariat paper. In particular, the SBSTA may seek to address:

- what kind of information services are desired;

- what mitigation and adaptation sectors/areas should be covered;

- key technology information needs, existing assets and gaps; and

- concrete, step-by-step proposals for improving the flow of technology information and services which can result in commercial transfer of technology.

It may be useful for the Secretariat to explore holding informal discussions among experts drawn from the Roster to facilitate the SBSTA decision process. This effort should involve credible experts from within developing countries who are familiar with the current conditions, institutions and problems; representatives of the key international and bilateral organizations which are suppliers of information and technical assistance on technology; representatives of the FCCC Secretariat; and interested negotiators involved in the SBSTA. Clearly any results, interim products, and recommendations from this expert process would need to be brought back to SBSTA and ultimately to the COP for full debate and possible action. It is hoped that by COP4 the results of initial informal consultations with experts and key institutions might be reported – or, failing that, the Secretariat might report on how such a process could be established.

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