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TECHNOLOGY TRANSFER AND SCIENTIFIC AND TECHNICAL COOPERATION

Addendum

Preparation of proposals on options to apply measures and mechanisms to facilitate access to and adaptation of technologies, and exploration of possibilities and mechanisms of cooperation with processes in other conventions and international organizations

Note by the Executive Secretary

I. INTRODUCTION

1. This addendum to the note by the Executive Secretary on progress in implementation of the programme of work of technology transfer and scientific and technical cooperation (UNEP/CBD/COP/8/19) presents the outcome of the work carried out in response to paragraph 7 of decision VII/29 of the Conference of the Parties. The background to this work and the process through which it was undertaken is described in paragraphs 6-11 of the above-mentioned note by the Executive Secretary. Suggested action by the Conference of the Parties is contained in paragraphs 12-14 of the same note.

II. PREPARATION OF PROPOSALS ON OPTIONS TO APPLY MEASURES AND MECHANISMS TO FACILITATE ACCESS TO AND ADAPTATION OF TECHNOLOGIES

2. At its meeting of 27 November 2005, the Expert Group on Technology Transfer and Scientific and Technical Cooperation generally agreed that the proposals prepared by the Executive Secretary were a useful first step in providing guidance to Parties in their efforts to implement the activities foreseen in

* UNEP/CBD/COP/8/1.

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element three of the programme of work, on the understanding that the proposals: (i) are non-binding and (ii) identify *options* for activities.

3. The direct relevance and practicability of some elements, and in particular of those under chapter B of the proposals, was questioned. The Group eventually agreed to keep the proposals broad at this stage and hence to keep these elements for the time being in order to reflect the broad mandate given to the Group.

4. It was also noted that more work would be needed to develop a set of guidelines on enabling environments for technology transfer and scientific and technical cooperation. The Group expressed the opinion that this work should be undertaken through a more elaborated technical process in the next biennium, leading to the ninth meeting of the Conference of the Parties.

5. In undertaking this work, the Group identified a need to prioritize further work on enabling environments. The Group identified a number of elements as options for prioritization, including: (i) the strengthening of national capacities and capabilities pertaining to research and innovation systems; (ii) a number of technological priorities such as valuation and monitoring techniques as well as technology packages for the sustainable use of components of biodiversity.

6. The Group also recognized that it would be important to make the link, and clarify the differences, between technology transfer and technological cooperation. It would be important to provide a vision that technology transfer, in particular in the context of the third objective of the Convention, will not be effective as an on-off activity, but should rather be embedded in integrated, long-term mechanisms of technological cooperation, which would be key means to build capacity with the objective of empowerment. The further development of this vision would be another important element in the further work to be undertaken in the next biennium.

7. The meeting also made a number of specific recommendations to improve the first draft prepared by the Executive Secretary, which were reflected in the remainder of this section.

A. General remarks

8. Article 16, paragraph 1 of the Convention on Biological Diversity recognizes that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of the Convention, and requires that each Contracting Party undertakes to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant harm to the environment. Hence, relevant technologies under the Convention are those that contribute to meeting the three objectives of the Convention: the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

9. Article 16 establishes a number of other conditions regarding technology transfer. First, its paragraph 2 stipulates that access to and transfer of technology to developing countries “shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21”. Secondly, in the case of technology subject to patents and other intellectual property rights, paragraph 2 of Article 16 also states that access and transfer shall be provided on terms that recognize and are consistent with the adequate and effective protection of intellectual property rights.

10. A number of other provisions are of particular importance for the effective implementation of the third objective of the Convention relating to the fair and equitable sharing of benefits arising from the utilization of genetic resources. Paragraph 3 of Article 16 requires Parties to take legislative, administrative or policy measures with the aim that Parties which provide genetic resources, in particular those that are developing countries, are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law. Countries with users under their jurisdiction are to establish an enabling legal and policy environment for access to and transfer of such technology to countries that provide genetic resources. Paragraph 4 of Article 16 requires Parties to take legislative, administrative or policy measures with the aim that the private sector facilitates access to, joint development and transfer of technology for the benefit of both governmental institutions and the private sector of developing countries. A large part of global technology is owned by the private sector mainly under the jurisdiction of developed countries. Developed country Parties are, therefore, required to play a facilitative role through legislative and policy development that would act as an incentive for their private-sector actors to provide access to and transfer of technology to developing countries.

11. Related to these provisions are paragraphs 1 and 2 of Article 19, on biotechnology, which require Parties to establish legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities of Parties, especially developing countries, which provide genetic resources for such research; and to take practicable measures to promote and advance priority access by such Parties, on a fair and equitable basis, to the results and benefits arising from biotechnologies based upon the genetic resources provided.

12. Article 18, on technical and scientific cooperation, requires Parties to promote international cooperation in the field of conservation and sustainable use of biological diversity; develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies; and promote the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention.

13. In order to develop meaningful and effective action to enhance the implementation of Articles 16 to 19 as well as related provisions of the Convention, the Conference of the Parties, by decision VII/29, adopted a programme of work on technology transfer and technological and scientific cooperation. The programme of work shall promote and facilitate the transfer of and access to technologies from developed to developing countries, including the least developed among them and small island developing States, as well as countries with economies in transition, as well as among developing countries and other Parties. Element 3 of the programme of work provides for the creation of enabling environments in order to foster technology transfer and technological and scientific cooperation.

14. A number of activities under other elements of the programme of work will also contribute an enabling environment for technology transfer and technological and scientific cooperation:

(a) Technology assessment (programme element 1): The identification of the needs with regard to technology transfer and scientific and technological cooperation, including related needs for capacity building, will be a crucial precondition for any successful transfer of technology and technological and scientific cooperation. ^{1/} The preparation of transparent impact assessments and risk analysis will

^{1/} See section III of document UNEP/CBD/COP/8/19, and, in particular, the sub-section on programme element 1, on technology assessments, for pertinent activities. The section contains a brief analysis of the UNDP/GEF needs assessment handbook.

ensure that transferred technologies are economically viable, socially acceptable and environmentally friendly;

(b) Information systems (programme element 2): The development or strengthening of national, regional and international systems for the gathering and dissemination of relevant information on technology transfer and cooperation and technical and scientific cooperation, including the establishment of effective networks of electronic databases of relevant technology, has been recognized as a tool that facilitates the transfer of technology of relevant to the Convention, and will thus be an important element of an enabling environment; ^{2/}

(c) Capacity-building (programme element 4): The building or enhancement of technical, scientific, institutional and administrative capacity through financial and technical support and training is an issue of cross-cutting importance for effective technology transfer and scientific and technological cooperation. In this context, it is important to recall that Article 16 of the Convention makes explicit reference to Articles 20 (on financial resources) and Article 21 (on the financial mechanism).

15. According to the preamble of element three of the programme of work on technology transfer and technological and scientific cooperation, creating enabling environments refers to activities of Governments at national and international levels that aim to create an institutional, administrative, legislative and policy environment conducive to private and public sector technology transfer and to the adaptation of transferred technology and that aim to remove technical, legislative and administrative barriers to technology transfer and technology adaptation, inconsistent with international law. Pertinent activities can be distinguished according to whether they focus on fostering the *provision* of technologies or on the *reception, adaptation and diffusion* of technologies. While many countries may be mainly providing or mainly receiving technologies, it has to be borne in mind that individual countries may sometimes simultaneously provide and receive technologies from abroad. The preamble to programme element 3 recognizes that enabling environments are necessary in both developed and developing countries as a tool to promote and facilitate the successful and sustainable transfer of technologies for the purpose of the Convention on Biological Diversity. Consequently, the present proposals cover measures to be taken both on the providing as well as on the receiving end.

16. The preamble to the programme work recognizes that, in light of the numerous ongoing activities on technology transfer and technology cooperation under existing programmes and initiatives, particular attention should be given to the establishment of synergies with such programmes and initiatives, in order to avoid the duplication of work. This recognition is also important in the context of creating enabling environments for technology transfer and technological and scientific cooperation. Section III of the present note addresses possibilities and mechanisms of cooperation with processes in other conventions and international organizations, including on enabling environments.

17. In undertaking activities on enabling environments, it is important to recognize the crucial links and differences between technology transfer and scientific and technological cooperation—the two elements addressed by the programme of work. Technology transfer, in particular in the context of the third objective of the Convention, will not be effective as an on-off activity, but needs to be embedded in integrated, long-term scientific and technological cooperation, which would also provide key mechanism for the effective building or enhancement of capacity in developing countries and countries with economies in transition.

^{2/} See section III of document UNEP/CBD/COP/8/19, and in particular the sub-section on programme element 2, on information systems, for pertinent activities. See also document UNEP/CBD/COP/8/19/Add.1.

18. This observation is all the more important as the concept of technology as generally understood under the Convention includes both “hard” and “soft” technology. The notion of hard technology refers to the actual machinery and other physical hardware that is transferred, while the category of soft technology refers to technological information or know-how. Such “soft” technology is often transferred within long-term scientific and technological cooperation.

19. Against this background, the following options could be taken into consideration by Parties in their efforts to further develop national institutional, administrative, legislative and policy frameworks that foster an enabling environment for technology transfer.

B. Strengthen the legal, administrative, regulatory and policy framework for conservation and sustainable use of biodiversity

- i. Improve, both on the receiving and the providing end of technology transfer, the effectiveness of national strategies, plans and policies for conservation and sustainable use of biodiversity, in particular National Biodiversity Strategy and Action Plans (NBSAP), including through their improved enforcement, and improve the integration of biodiversity consideration into other relevant national strategies, plans and policies, including Poverty Reduction Strategy Papers.*
- ii. Promote, in accordance with international law, the application of standards for environmental performance and create awareness about products, processes and services that use biodiversity-sound technologies through means such as voluntary eco-labelling, product standards and codes.*

Rationale: Stronger and well-enforced strategies, plans and policies, by increasing the cost of non-compliance, can be effective instruments in promoting demand for environmentally sound technologies at the receiving end, including technologies for conservation and sustainable use of biodiversity. At the providing end, a strong, focused and well-enforced regulatory and policy framework for environmental protection in general, and for the conservation and sustainable use of biodiversity in particular, will promote the development and improvement of technologies that help to implement the policy targets set out in the framework in a more effective and/or cost-efficient manner.

Supporting activities by international organizations and initiatives and the Executive Secretary:

S1. International organization and initiatives could be invited to increase the technical support provided for the effective implementation of the Convention through, for instance, national biodiversity strategy and action plans, as well as for mainstreaming biodiversity into other plans, policies and programmes such as for instance Poverty Reduction Strategy Papers (PRSPs).

S2. International cooperation and funding, in partnership with financial institutions, will be key for capacity building and training need to enhance the effectiveness of national strategies, plans and policies for conservation and sustainable use of biodiversity, including through their improved enforcement.

C. Review other institutional, administrative, legislative and policy frameworks that are relevant for technology transfer under the Convention

- iii. Review, both on the providing and the receiving end of technology transfer and in accordance with international law, **national trade policies** with a view to ensure that they support the transfer of technology of relevance to the Convention.

Rationale: On the receiving end, removing tariff and non-barriers to trade can contribute to promote the effective transfer of technology by fostering the import of technology-intensive ^{3/} machinery and equipment (“hard” technology) and the related package of pertinent technological information and know-how in form of manuals, training, long term cooperation between importers and exporters, etc. On the providing end, trade policies can also contribute to increase the demand for imported biodiversity-related goods, which will subsequently increase the demand for technologies for sustainable use of the underlying biodiversity assets in exporting countries.

- iv. Review the institutional, administrative, legislative and policy frameworks that form the **national investment regime**, with a view to ensure that administrative processes will not impose prohibitive transaction costs on investors through tedious procedures relating to, for instance, licensing, tariff setting, and foreign exchange controls.
- v. Design and implement **procedures for technology-related risk assessments** that are effective in ensuring that transferred technologies are economically viable, socially acceptable and environmentally friendly, and that are predictable, speedy, and do not put onerous administrative burden on prospective technology users and providers.

Rationale: Foreign direct investment (FDI) is the dominant mechanism for technology transfer to developing countries. Technology disseminated through FDI generally includes the entire package including experts and their skills, and also contributes to technology transfer through on-the-job training and various forms of interaction among local and foreign firms. As it usually implies the long-term involvement of the investor, backward and forward linkages favour technological diffusion, as technologically advanced foreign affiliates help their local suppliers and host country firms involved in the production process to adopt new technologies.

- vi. Review the regime governing **land tenure** with a view to ensure that it supports the transfer of technology of relevance to the Convention.

Rationale: The regime governing land tenure has an important impact on biodiversity-related technology choices and associated transfer. Technology choices by land users will *inter alia* depend on who owns, controls and manages the resources both legally and in practice. Insecurity created by unclear property rights or conflicting claims deters investment, including investments into technology for the conservation and sustainable use of biodiversity.

- vii. Establish or strengthen programmes that enhance **access to capital markets**, in particular for small and medium enterprises, for instance through the establishment of small-scale loan facilities that provide **seed capital**, the **bundling of projects**, or the **provision of collateral and/or performance guarantees**.

^{3/} According to the OECD, exports from technologically-intensive industries are defined in accordance to its overall R&D intensity. See OECD Factbook 2005: Economic, Environment and Social Statistics.

Rationale: The acquisition of new technologies for sustainable use and conservation of biodiversity is constrained by limited access to capital. The high upfront costs and long pay-back periods that are sometimes associated with conservation and sustainable use technologies may also represent impediments in an environment where access to funding is restricted.

- viii. *Review, both on the receiving and the providing end, institutional, administrative, legal and policy frameworks with a view to ensure that they support and encourage the utilization of **intellectual-property-rights-related mechanisms for the sharing of benefits**, such as joint patents with stakeholders in countries of origin of genetic resources or joint research programmes with institutions in such countries.*

Rationale: Such mechanisms may provide important avenues for the transfer in particular of biotechnologies.

- ix. *Study national corporate actors in developing countries and identify their **strategies to cope with problems/challenges associated with intellectual property regimes**, with a view to assess their adaptive capacity, to gauge the need for political intervention, and identify possible entry points for political responses.*

Rationale: Relevant actors in OECD countries seem to often find pragmatic solutions to the problems that are sometimes associated with intellectual property regimes. However, it appears to be less clear whether and to what extent this finding also applies to the relevant actors in the developing world, which typically operate under more severe constraints in terms of legal expertise and capacity.

- x. *Consider policy recommendations emanating from the **technical studies** that further explore and analyse **the role of intellectual property rights in technology transfer** in the context of the Convention on Biological Diversity, as foreseen in activity 3.1.1 of the programme of work.*

Rationale: The studies are to identify options to increase synergy and overcome barriers to technology transfer and cooperation of relevance to the Convention.

- xi. *Undertake national studies to analyze whether and to what extent **export controls** present obstacles that impede the transfer of technologies of relevance to the Convention on Biological Diversity.*

Rationale: Export controls are legal and administrative systems designed to limit or to prohibit transfer of certain types of technology, and specifically equipment, materials and knowledge that have potential weapons uses. A concern has been raised that the current international system of export controls could be an obstacle to the transfer of technologies of relevance to the Convention. However, because of information constraints, it is very difficult to gauge whether and to what extent export controls present obstacles that impede the transfer of technologies of relevance to the Convention.

Supporting activities:

S3. The Executive Secretary could be requested to continue to follow and analyse the negotiations within the World Trade Organization (WTO) on paragraph 31 (iii) of the Doha Declaration, on the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services, and to analyse their relevance for technology transfer under the Convention on Biological Diversity.

Rationale: As such goods may also include technology-intensive machinery and equipment (“hard” technology) of relevance to the Convention, these negotiations have the potential to remove or alleviate an obstacle to the effective implementation of Article 16 of the Convention. Furthermore, the elimination of tariff and non-tariff barriers by developed countries for certain biodiversity-based goods from developing countries could foster the demand for these goods and, subsequently, the demand in those developing countries for technology for the sustainable use of the underlying biodiversity assets.

S4. International cooperation and funding, in partnership with financial institutions, will be key to the effective implementation of programmes for enhancement of access to capital markets by prospective technology users.

S5. Relevant international organizations could be invited to undertake global studies to analyse whether and to what extent export controls present obstacles that impede the transfer of technologies of relevance to the Convention on Biological Diversity.

D. Design and implement, or strengthen as appropriate, institutional, administrative, legislative and policy frameworks that foster access to, and transfer of, technologies of relevance under the Convention, in particular by strengthening domestic research and innovation systems in developing countries and countries with economies in transition

xii. *Consider the designation of appropriate existing institutions that could act, in close cooperation with National Focal Points for the Convention and its clearing house mechanism, as a central **consulting point on technology access and transfer** for other national or international actors to turn to.*

Rationale: Such a central gateway could facilitate the exchange of pertinent technology-related information, that is, on needs and opportunities for the transfer and adaptation of technology, on risk assessments as well as on related capacity needs and the support available, through for instance national and international training programmes and initiatives, in building or enhancing capacities, including for instance on the negotiation skills needed for the conclusion of technology transfer agreement or of technology transfer provision/clauses in other agreements. In so doing, it could cooperate closely with the national clearing-house of the Convention. It could also assist in the negotiation of such agreements, and/or negotiate, as appropriate under the circumstances of the individual countries, on behalf of relevant actors. It could support the harmonization of transfer agreements among public organizations in order to reduce the transaction costs of transferring intellectual property.

xiii. *Support the establishment of **research consortia** among research institutions in developing countries, including through for instance the establishment and work of **patent pools** or **intellectual property commercialization agents***

Rationale: Individual public research organizations in many developing countries are at a comparative disadvantage in accessing biotechnology products due to substantial economies of size in biotechnology research, small market size, and their weak bargaining position. However, public research institutions within the same region will often have similar goals, needs and assets, which is an incentive to pool resources. As a consortium they might be in a better position to gain access to technologies if they negotiate as a group and also could share the costs. For instance, such a consortium could enhance the sharing of biotechnology tools and germplasm products among public research institutions. In particular, patent pools may help companies to more easily obtain the licenses required to practice a particular

technology, which reduces transaction costs and facilitates the rapid deployment of new applications. Commercialization agents provide a mechanism to turn intellectual property into competitive and cost-effective products.

- xiv. *Foster **cooperation between research institutions** of developed and developing countries through for instance the establishment and financing of **twinning arrangements**.*

Rationale: On the providing end, a strong national research and innovation system will drive the process of technology development – a necessary precondition for any transfer. On the receiving end, research institutions that are located within the importing country will often be closer to local stakeholders and technology users and their wealth of indispensable information for successful dissemination and adaptation of technology.

- xv. *Promote the interaction between institutions of education and training as well as of research and development on the one side and the **private sector** on the other side, through **alliances, joint ventures or public-private partnerships**, and by establishing, or making use of existing **intermediary institutions and networks**.*

Rationale: Partnerships are being seen increasingly as an effective means to leverage public funds, thereby overcoming budget restrictions, while also harnessing the efficiency of the private sector and allowing it to operate more effectively through changes in public policy that create more business opportunities. While these partnerships should eventually develop and operate independently, public-sector support is often necessary to establish the basic framework for collaboration. Joint ventures and cooperative arrangements between Governments and firms may prove useful not only in channelling concrete private investments into technology but may also contribute to alter other firms' risk perceptions in the medium and in the long run, thus contributing to an increasing and more stable private-sector involvement. Public-private partnerships may also play an important role in the development of innovative funding mechanisms for technology transfer, such as through the promotion of institutions, arrangements and mechanisms that can provide innovative financing, including micro-financing, green finance, secured loans, and/or leasing arrangements. Intermediary institutions are often said to play a useful role in acting as a "honest broker", which focuses on creating public-private-partnerships by facilitating fact-based negotiations of transfer agreements, providing "managed" technology transfer, and providing access to financing facilities.

- xvi. *Support the set-up of long-term technological **cooperation between private firms in developed and developing countries**, including the co-financing of local businesses with little or no access to long-term investment capital, through for instance the establishment and strengthening of so-called **matchmaking programmes**.*

Rationale: Matchmaking programmes seek to facilitate information sharing and personal contacts between private sector technology producers and potential users of these technologies, for instance in the form of advisory services and support in identifying partners, study visits and examinations as well as the provision of information on technology transfer and the need to adapt and apply new technology to developing countries.

- xvii. *Consider, on the providing end, the use of measures and mechanisms that **provide incentives to the private sector** to enhance the transfer of pertinent technology, in accordance with international law. For instance:*

(a) *The use or adaptation of existing provisions in domestic tax systems on tax breaks or deferrals for charitable activities to provide adequate incentives for private companies to engage in the transfer of relevant technologies and related capacity-building activities;*

(b) *Existing guidelines for eligibility to research-oriented tax breaks or deferrals could be adapted to generate incentives for private-sector actors that engage in research making use of genetic resources, to implement adequate mechanisms for the promotion and advancement of priority access to the results and benefits arising from the biotechnologies that result from such research, in accordance with Article 19, paragraph 2 of the Convention. Such measures could in particular encourage: the provision of broad access to research tools (through free or preferential access or non-exclusive licenses), joint patents with providers of genetic resources in countries of origin of genetic resources, or joint research programmes with institutions in such countries. The measures could also discourage reach-through provisions;*

(c) *The application of subsidized export credits or loan guarantees that act as insurance against risks in international transactions with a view to provide incentives to private sector actors to engage in technology transfer for the purpose of the Convention on Biological Diversity.*

xviii. *Consider, on the receiving end, the use of **incentives to encourage foreign actors** to provide access to and transfer of technology to domestic public or private institutions.*

Rationale: The provision of incentive measures is an important element of an enabling environment in particular for the transfer of proprietary technologies. For such technologies, Governments have by definition only limited, if any, force in directly regulating or prescribing their transfer.

xix. *Review, on the providing end, the **principles and guidelines that govern the funding of public research institutions** and develop them further with a view to fully reflect the pertinent provisions and guidance of the Convention on technology transfer. In particular, the guidelines could foresee the implementation of adequate mechanisms for the promotion and advancement of priority access to the results and benefits arising from the biotechnologies that result from such research, in accordance with Article 19, paragraph 2, of the Convention, and could also encourage the broad access to research tools (through free or preferential access or non-exclusive licences), joint patents with stakeholders in countries of origin of genetic resources, joint research programmes with institutions in such countries, and discourage reach-through provisions.*

Rationale: Public research institutions are almost by definition mainly or exclusively funded by public monies. It therefore appears that public authorities have more leverage on the terms of reference that govern research undertaken by public institutions, when compared with the research undertaken by private-sector actors. In many countries however this comparatively high degree of leverage will nevertheless be restricted by a number of important factors, including: (i) the high value assigned to the policy principle that Governments should not interfere with research and science (freedom of research and science); and (ii) the fact that budgetary restrictions have led many Governments to put public research institutions under increasing pressure to look for private co-funding and for commercialization of their research results. In such cases, the approach outlined in the previous paragraph could be usefully complemented by the types on incentive measures provided to private-sector actors, as described in item xvii above.

Supporting activities by international organizations and the Executive Secretary

S5. Relevant international organization could be invited to continue their activities for strengthening the research and innovation systems of developing countries, including through the training of staff at all levels as well as the enhancement of technical and institutional capacity. Such training could also include the negotiation skills needed for the conclusion of technology transfer agreement or of technology transfer provision/clauses in other agreements.

S6. Assisted by the Secretariat, Governments that host relevant meetings of the Convention could organize international technology fairs and/or workshops, taking place back-to-back with the meetings, which would bring together technology providers and users.

Rationale: Personal contacts are often key to the successful identification of transfer opportunities and the successful conclusion of the transfer. Technology fairs or workshops are therefore important means to facilitate matchmaking.

S7. Parties may wish to engage in a collaborative effort to establish an international initiative with a view to support the implementation of Article 16 to 19 and the programme of work on technology transfer and scientific and technological cooperation, and in particular to facilitate the development and diffusion of relevant technologies through partnerships among countries members of the Organisation for Economic Co-operation and Development, developing countries, multilateral organizations and the private sector.

Rationale: The example of the Climate Technology Initiative (CTI), which was launched in 1995 by 23 OECD/International Energy Agency member countries and the European Commission to support the technology-related objectives of the United Nations Framework Convention on Climate Change, shows the useful role of such an international network for the effective implementation of provisions on technology transfer.

S8. The Executive Secretary could be requested to compile and analyse, in cooperation with relevant organizations and initiatives and with assistance by the expert group on technology transfer, existing technology transfer agreements or technology transfer provisions/clauses in other agreements such as for instance contractual agreements relating to access to genetic resources and associated traditional knowledge and the fair and equitable sharing of benefits arising out of their utilization. This compilation and analysis could also include existing templates for stands technology transfer agreements/provisions/clauses, and could be used to develop international guidance that could act as reference for good/best practice on the application of technology transfer agreements/provisions/clauses.

Rationale: The compilation and guidance could contribute to enhance the capacity of developing countries in the negotiation of technology transfer agreements/provisions/clauses, including in the context of contractual agreements relating to access to genetic resources and associated traditional knowledge and the fair and equitable sharing of benefits arising out of their utilization.

III. EXPLORATION OF POSSIBILITIES AND MECHANISMS OF COOPERATION WITH PROCESSES IN OTHER CONVENTIONS AND INTERNATIONAL ORGANIZATIONS

20. At its meeting of 27 November 2005, the Expert Group on Technology Transfer and Scientific and Technical Cooperation considered a draft version of the present section. The Group generally recognized the importance of cooperation with relevant processes in other Conventions and international organizations,

and made a number of specific recommendations to improve the first draft prepared by the Executive Secretary, which were reflected in the remainder of the present section.

A. Existing work

21. In decision VII/26, on cooperation with other Conventions and international organizations and initiatives, the Conference of the Parties made specific reference to cooperation among the three Rio conventions and well as the biodiversity-related Conventions through, *inter alia*, the establishment of joint liaison groups. Technology transfer was already explicitly addressed as a cross-sectoral area of cooperation by the joint liaison group of the three Rio Conventions.

22. A joint paper was prepared by the three convention secretariats on options for enhanced cooperation among the three Rio conventions. This paper was distributed as an information document to the Subsidiary Body on Scientific, Technical and Technological Advice at its tenth meeting, in February 2005 (UNEP/CBD/SBSTTA/10/INF/9), and was also made available, further to a request of the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the Convention on Climate Change, to the twenty-first session of the SBSTA, in December 2004 (FCCC/SBSTA/2004/INF.19).

23. The paper explained that the rationale for collaboration among the conventions stems from the interlinkages between the issues that they address—an insight that is also relevant for cooperation on technology transfer. For instance, climate change can be an important driver of desertification and biodiversity loss. Ecosystem dynamics can impact the earth's carbon, energy and water cycles and therefore affect climate. Further, measures undertaken under one convention to address climate change (including mitigation and adaptation activities), to combat desertification and land degradation, or for the conservation and sustainable use of biodiversity, might have consequences for the objectives of the other conventions. Noting the distinct mandates and independent status of each convention, the need for improved coordination and cooperation among the Rio conventions has been recognized as a means to capture synergy, reduce areas of potential conflicts between activities taken by Parties to fulfil the provisions under each agreement, avoid duplication of efforts, and use resources more efficiently.

24. The paper further notes that the conferences of the parties and their subsidiary bodies of the Rio conventions have already identified a number of elements of and modalities for cooperation which are also relevant for cooperation with regard to technology transfer, and already identified a number of possibilities for further collaboration on technology development and transfer, which are captured in the opportunities and mechanisms for cooperation identified in section C below.

B. Synergy and cooperation on technology transfer

25. The convention bodies have frequently emphasized the importance of synergy at the national and local levels. For example, according to SBSTTA, “the primary motivation for cooperation is to promote synergies at the national and local levels, where conventions are implemented. Efforts to promote synergies should be designed in accordance with national circumstances and priorities with a view to achieving sustainable development”.^{4/} Similarly, the SBSTA under the United Nations Framework Convention on Climate Change reiterated the “importance of promoting synergy at the national and local levels where implementation of the various conventions occurs, recognizing that this can lead to increased efficiency and can help avoid duplication”.^{5/} The Conference of the Parties to the United Nations

^{4/} SBSTTA recommendation IX/11.

^{5/} SBSTA 19 conclusion (FCCC/SBSTA/2003/15, para. 44 (d)).

Convention to Combat Desertification, at its fifth session, underlined the need for action at the national and local levels, noting that concerted action makes a significant difference at those levels. ^{6/}

26. Substantial synergy could be realized at the national level by identifying, providing access to, and transferring technologies that are of joint interest and relevance to several conventions. For instance, there seems to be a substantial overlap between technologies of relevance under the Convention on Biological Diversity and technology for adaptation for climate change. It is expected that in the future, the Global Environment Facility will fund climate-change-adaptation projects, and these may also contribute to the objectives of the Convention on Biological Diversity. At a recent, UNFCCC seminar on the development and transfer of environmentally sound technology for adaptation to climate change, most technologies that were presented in the case-studies on enhancing the adaptability of natural ecosystems (including agricultural ecosystems) to climate change seemed also to be useful for conservation and sustainable use of biodiversity. Moreover, some technologies that make use of genetic resources also seem to play a valuable role as technologies for adaptation to climate change, such as the development and transfer of drought-resistant crop varieties, an example that was mentioned by a number of speakers at the seminar.

27. All conventions share the overarching objective of achieving sustainable development. From this perspective, synergies may be realized in particular if focus is given not on the transfer of technology for narrow purposes, but rather on the transfer of entire “technology packages” to achieve the sustainable use of biological resources, including for instance specific biotechnological applications for the development of biotechnological products based on genetic resources.

28. There will however be limitations to synergy, which will need to be addressed through well-established and smoothly working channels of cooperation. For instance, in the case of technologies for adaptation to climate change, it also appears that a number of these technologies have neutral or even negative impacts on biodiversity, mirroring, on the technology level, a similar conclusion of the Ad Hoc Technical Expert Group on Biodiversity and Climate Change. In the case of negative impacts, cooperation between the relevant national authorities may seem to be all the more important to minimize the tradeoffs involved in the transfer and application of such technology. And in the case of technologies that make use of genetic resources being transferred as technologies for adaptation to climate change, there seems to be a need for close cooperation in order to ensure that such transfers meet the provisions of the Convention on Biological Diversity with regard to technologies that make use of genetic resources, in particular Articles 16, paragraph 3, and 19.

29. Another important area for realizing synergy on technology transfer, at national and international levels, is the development and application of advice, methodologies and tools, as many methodological issues arising in technology transfer, despite different mandates of the individual conventions, may be similar. At the international level, the exchange of pertinent information will be an important means to realize such synergy. For instance, a substantial amount of work undertaken by other conventions and multilateral processes as well as relevant international organizations has been analysed in the preparation of the draft guidance on measures and mechanisms that foster an enabling environment for cooperation as well as the transfer, adaptation and diffusion of relevant technologies, presented in the previous section of this note. ^{7/}

30. At the national level, enabling environments for technology transfer should be designed with a view to avoid overlapping responsibilities—to the extent possible, they should serve the technological needs under different conventions.

^{6/} UNCCD document ICCD/COP(5)/6.

^{7/} See document UNEP/CBD/COP/8/INF/9.

31. There are again limitations to realizing synergy on the development and application of such advice, methodologies and tools, which are due to specific provisions on technology transfer that may be unique to each convention. For instance, the provisions of, *inter alia*, Articles 16, paragraph 3, and 19 are unique to the Convention. However, cooperation both at national and international levels would again remain important. For instance, close cooperation and consultation at the national level could ensure that technology transfers for the purposes of other conventions are undertaken in a manner that is consistent with these provisions.

32. The work on intellectual property rights in the context of technology transfer under the Convention on Biological Diversity provides another example of useful cooperation and exchange of information, in particular at the international level. While this work is being undertaken to contribute to implement pertinent provisions of Article 16 that are again specific to the Convention on Biological Diversity, the results of this work, for instance in terms of the identification of lessons learnt and/or best practices in implementing these provisions, may also be of interest and relevance for other conventions.

C. Opportunities and mechanisms of cooperation under the elements of the programme of work

33. A number of opportunities for collaborative work can be identified along the different elements of the programme of work on technology transfer and scientific and technological cooperation, on: (i) technology assessments, (ii) information systems; (iii) enabling environments; (iv) capacity building.

(i) Technology assessments

National level

- Cooperation among relevant national focal points and other relevant national authorities with a view to ensure that technology transfers for the purposes of other conventions are undertaken in a manner that is consistent with Article 19 of the Conventions and activity 1.2.1 of the programme of work, on the “preparation, as appropriate, of transparent impact assessments and risk analyses of the potential benefits, risks and associated costs with the introduction of technologies, including new technologies whose risks and benefits are not yet determined.”
- In the context of promoting complementarity among the national biodiversity strategies and action plans (NBSAPs) under the Convention on Biological Diversity, the national action programmes (NAPs) of the Convention to Combat Desertification, and the national adaptation programmes of action (NAPAs) for least developed countries of the United Nations Framework Convention on Climate Change, cooperation among relevant national focal points and other relevant national authorities with a view to ensure that technology needs assessments that are conducted under NAPs and NAPAs fully reflect the technology needs of relevance to the Convention.

International level

- Technology risk assessments could be considered by the joint liaison group of the three Rio conventions as a cross-sectoral area of cooperation.
- Liaise with UNDP-GEF with a view to assisting in the exploration of the applicability of the UNDP-GEF Handbook on Technology Needs Assessment and to specify its relevance in particular to the transfer of technology and technological and scientific cooperation under the Convention, and in the exploration of options for realizing synergy in technology needs assessments for the purposes of different conventions.

(ii) *Information systems*

National level

- Cooperation among relevant national focal points and other relevant national authorities with a view to implement activity 2.4.1 of the programme of work (initiate and conduct consultations among relevant organizations, indigenous and local communities and all relevant stakeholders with a view to identifying options to further regional and international cooperation in the development or improvement of information systems on technology transfer and technology cooperation).
- Cooperation among relevant national focal points and other relevant national authorities with a view to ensure that activities 2.2.2, 2.3.1 and 2.4.3 of the programme of work, on developing or strengthening national information systems of technology transfer and technology cooperation identifying, and on implementing measures to develop or strengthen appropriate information systems of technology transfer and technology cooperation, including at the local level, is implemented in synergy with the objectives of other conventions.
- Further opportunities for cooperation under this programme element, at national and international levels, are identified in the documentation on activities 2.1.2 and 2.1.3, on the development of proposals to enhance the clearing-house mechanism, and on the development of advice and guidance on the use of new information exchange formats, protocols and standards to enable interoperability among relevant existing systems of national and international information exchange (UNEP/CBD/COP/8/19/Add.2).

(iii) *Enabling environments*

National level

- Cooperation among relevant national focal points and other relevant national authorities with a view to ensuring that activities to implement proposals on measures and mechanisms that foster an enabling environment for cooperation as well as the transfer, adaptation and diffusion of relevant technologies, are undertaken in a manner that is consistent and maximizes synergy with provisions on technology transfer of other processes and conventions. For instance, the designation of appropriate institutions acting as a central consulting point for technology transfer could be undertaken in close consultation with the national focal points of other conventions and other relevant national authorities in order to avoid duplication of efforts through overlapping mandates.
- Cooperation among relevant national focal points and other relevant national authorities with a view to ensure that technology transfers under other processes and conventions are consistent with the provisions of the Convention on Biological Diversity, and that technologies of joint interest and relevance are identified.
- Cooperation among relevant national focal points, including national focal points for the Global Environment Facility (GEF), and other relevant national authorities with a view to ensure that concrete technology transfers contribute to sustainable development, are undertaken in a manner that maximizes synergy whenever technologies have the potential to serve the objectives of different multilateral conventions and processes, and otherwise minimizes negative impacts to the extent feasible.

International level

- Cooperation with relevant multilateral processes and conventions, as well as with other international organizations, in the implementation of supporting activities identified in the proposals on measures and mechanisms that foster an enabling environment for cooperation as well as the transfer, adaptation and diffusion of relevant technologies, presented in the previous section. Other relevant organizations may for instance include the World Trade Organization (on relevant trade agreements and negotiations),^{8/} the United Nations Conference on Trade and Development (UNCTAD) and the World Intellectual Property Organization (WIPO) (on the role of intellectual property rights), as well as relevant international networks that act as intermediaries and facilitate technology transfer, such as International Service for the Acquisition of Agri-biotech Applications (ISAAA) or the Consultative Group on International Agricultural Research (CGIAR), as well as the United Nations inter-agency coordination network on biotechnology (UN-Biotech).
- Continue to exchange information on activities and of expertise as appropriate between the Expert Group on Technology Transfer and Scientific and Technical Cooperation and other relevant expert bodies, such as the Expert Group on Technology Transfer under the United Nations Framework Convention on Climate Change, as well as through the joint liaison groups of the three Rio conventions and well as the biodiversity-related conventions.
- Joint workshops with other conventions for instance on technologies of joint interest and relevance.

(iv) Capacity building

National level

- Cooperation among relevant national focal points, including national focal points for the Global Environment Facility (GEF), and other relevant national authorities with a view to ensure that capacity building activities related to technology transfer are undertaken in a manner that maximizes synergy among different multilateral conventions and processes.

International level

- Cooperation and consultation among funding institutions, including the Global Environment Facility (GEF), with a view to ensure that capacity building activities on technology transfer are designed and implemented in way that avoids the duplication of efforts and maximizes synergy between different multilateral conventions and processes.
- Cooperation with the United Nations Environment Programme (UNEP) to explore the nature and scope of the Bali Strategic Plan for Technology Support and Capacity Building with a view to identify possible collaborative activities and options to synergize.

^{8/} Such cooperation would be consistent with the recommendation of the first meeting of the Ad Hoc Open-ended Working Group on Review of Implementation of the Convention to request the Executive Secretary “to liaise with the secretariat of the World Trade Organization on relevant issues, including trade-related intellectual property rights, sanitary and phytosanitary measures, and environmental goods and services, *inter alia*, with a view to identifying options for closer collaboration, including developing a memorandum of cooperation to promote the three objectives of the Convention.” (recommendation I/6, paragraph 9 (h)).

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