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SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE
Ninth meeting
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Item 4.2 of the provisional agenda*

TECHNOLOGY TRANSFER AND COOPERATION

Proposals for the development of a programme of work on technology transfer and cooperation

Note by the Executive Secretary

Addendum

Review of status of implementation of decisions on technology transfer and cooperation

I. INTRODUCTION

1. At its sixth meeting, the Conference of the Parties endorsed, in its decision VI/30, the proposals contained in a note by the Executive Secretary regarding preparatory work for the seventh meeting of the Conference of the Parties (UNEP/CBD/COP/6/2). In paragraph 60 (a) (i) of the note by the Executive Secretary, it was suggested that the Executive Secretary should:

> "[P]repare a review of the status of implementation of all the decisions taken by the Conference of the Parties relevant to the implementation of Articles 16 and 18 and related provisions, partly based on the national thematic reports to be requested by the Conference of the Parties at its sixth meeting, and other national reports. The review will include an assessment of opportunities and challenges to the implementation of the decisions".

2. The present note provides such a review. Section II provides an overview, including the status of implementation, of relevant decisions of the Conference of the Parties on technology transfer and cooperation, as well as on recent recommendations by the Subsidiary Body for Scientific, Technical and Technological Advice and the Open-ended Inter-sessional Meeting on the Multi-year Programme of Work

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of the Conference of the Parties up to 2010. Section III provides an updated analysis of the second national reports. Section IV provides a preliminary analysis of thematic reports on technology transfer and cooperation, based on the reports submitted by Parties as of 15 June 2003. An overview of elements pertaining to technology transfer and cooperation in decisions, programmes of work and policy guidance on thematic areas and cross-cutting issues is annexed to this note.

II. OVERVIEW OF RELEVANT DECISIONS OF THE CONFERENCE OF THE PARTIES AND OF RELEVENT RECOMMENDATIONS OF OTHER BODIES OF THE CONVENTION

A. Second meeting of the Conference of the Parties

3. At its second meeting, the Conference of the Parties, in paragraph 1 of decision II/4 on ways and means to promote and facilitate access to, and transfer and development of technology, took note of recommendation I/4 of the Subsidiary Body for Scientific, Technical and Technological Advice on ways and means to promote and facilitate access to, and transfer and development of technology as envisaged in Articles 16 and 18 of the Convention. The remainder of the decision was retired by decision VI/27, paragraph 3.

B. Third meeting of the Conference of the Parties

4. At its third meeting, the Conference of the Parties, in paragraph 1 of decision III/16 on ways to promote and facilitate access to, and transfer and development of technology as envisaged in Articles 16 and 18 of the Convention, took note of decision II/4 of the second meeting of the Conference of the Parties and recommendation II/3 of the second meeting of the Subsidiary Body for Scientific, Technical and Technological Advice.

5. In paragraph 3 of this decision, the Conference of the Parties endorsed recommendation II/3 of the second meeting of the Subsidiary Body on Scientific, Technical and Technological Advice and requested the third meeting of the Subsidiary Body on Scientific, Technical and Technological Advice to conduct its work on technology transfer within sectoral themes related to the priority issues under its programme of work, as set out in recommendation II/12.

6. Pursuant to this request, technology transfer and cooperation was reflected in several recommendations of the third meeting of the Subsidiary Body for Scientific, Technical and Technological Advice, including those relating to inland waters, forests, agriculture, and the clearing-house mechanism.

7. Aspects of technology transfer and cooperation were subsequently integrated into relevant thematic programmes of work and programmes of work of relevant cross-cutting issues. An overview of related decisions as well as related programmes of work and policy guidance as adopted by the Conference of the Parties, is annexed to the present document.

8. An analysis of this overview shows that the importance of technology transfer and technology cooperation was adequately stressed in relevant policy guidance developed under the Convention (e.g., in the Bonn Guidelines on Access and Benefit Sharing or in the Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species). However, some programmes of work address the issue only on a general or indirect way. For instance, the programme of work on agricultural biodiversity (see decision V/5) refers to the identification of technology in its programme element on adaptive management, but does not give further guidance on the transfer of such technology. This observation suggests that there are opportunities to further strengthen

the integration of the issue of technology transfer and cooperation into thematic work programmes and work programmes on cross-cutting issues under the Convention.

C. Fourth meeting of the Conference of the Parties

9. At its fourth meeting, the Conference of the Parties, in paragraph 16 of decision IV/16, on institutional matters and the programme of work, decided that technology transfer and cooperation, as part of its long-term programme of work, would be taken up as an item for in-depth consideration by the seventh meeting of the Conference of the Parties.

10. The Conference of the Parties has viewed technology transfer and cooperation as one of the critical elements in access and benefit sharing arrangements. This is reflected in decisions taken by the Conference of the Parties since its third meeting. Further to paragraph 2 of decision III/16, technology transfer as related to access and benefit-sharing has been taken up by the Conference of the Parties at its fourth, fifth and sixth meetings. At its fourth meeting, the Conference of the Parties decided that the Panel of Experts on Access and Benefit-sharing should also address the role of technology transfer in access and benefit sharing (decision IV/8, paragraph 3 and annex). At its fifth meeting, the Conference of the Parties decided that technology transfer as a mechanism for benefit-sharing should be taken up by the Ad Hoc Open-ended Working Group on Access and Benefit-sharing (decision V/26, paragraph 11). The role of technology transfer as a mechanism to share benefits is reflected in the Bonn Guidelines on access and benefit-sharing adopted by the Conference of the Parties at its sixth meeting.

D. Sixth meeting of the Conference of the Parties

11. Lack of transfer of technology and expertise was identified, in the Appendix to decision VI/26, among the obstacles impeding the effective implementation of the Convention. The Strategic Plan of the Convention, adopted by the sixth meeting of the Conference of the Parties in its decision VI/26, under Goal 2, seeks to address this shortcoming by ensuring that Parties have improved technical and technological capacity to implement the Convention. In addition, in its decision VI/30, the Conference of the Parties endorsed the plans proposed by the Executive Secretary regarding the preparations for the consideration of technology transfer and cooperation at its seventh meeting (see paragraph 1 above).

E. Eighth meeting of the Subsidiary Body for Scientific, Technical and Technological Advice

12. In its recommendation VIII/1 B, the Subsidiary Body for Scientific, Technical and Technological Advice, at its eighth meeting, requested the Executive Secretary to synthesize information on positive and negative experiences on the development and transfer of technologies and technical cooperation, and propose, for consideration by the Subsidiary Body at its ninth meeting, a set of best practices on the transfer of technologies relevant to the conservation and sustainable use of mountain biodiversity and the fair and equitable sharing of the benefits arising from the utilization of genetic resources, taking into consideration the national thematic reports, the recommendations of the Open-ended Inter-Sessional Meeting on the Multi-Year Programme of Work and the outcome of the Norway/United Nations Conference on Technology Transfer and Capacity-Building, held in Trondheim, Norway, from 23 to 27 June 2003, and other relevant information.

13. The Subsidiary Body for Scientific, Technical and Technological Advice also requested the Executive Secretary to revise and expand the indicative list of technologies, both specific and broad mountain biodiversity technologies (UNEP/CBD/SBSTTA/8/7/Add.1) by taking into account, *inter alia*, the thematic national reports; traditional knowledge, innovations and practices of indigenous and local communities; the needs to implement the ongoing work programmes of the Convention; other thematic and

cross-cutting issues and initiatives (e.g., guidelines and guiding principles) of the Convention; legal and socio-economic aspects; and the need of developing countries and countries with economies in transition for capacity-building. The table should include, *inter alia*, information on:

(a) Availability of relevant documentation;

(b) Opportunities, requirements and possible barriers/obstacles to access, transfer and cooperation and absorption/adaptation of the technologies, including legal and socio-economic aspects; and

(c) Assessment of the possible impact of the technologies on biological diversity;

14. The Subsidiary Body for Scientific, Technical and Technological Advice also requested the Executive Secretary to develop, for consideration by the Subsidiary Body at its ninth meeting, a proposal on how the role of the clearing-house mechanism of the Convention could be enhanced so that it could become a central mechanism for exchange of information on technologies relevant to the conservation and sustainable use of biological diversity and the fair and equitable sharing of benefits arising from the utilization of genetic resources, access to these technologies, technology development, technical cooperation and transfer of technologies. The proposal could contain ways and means for:

(a) Developing a searchable catalogue (including database) of technologies that are in the public domain, taking into account ongoing initiatives while avoiding unnecessary duplication, and including reference to relevant examples or case-studies;

(b) Setting up a portal that international organizations can be encouraged to use to disseminate technologies.

15. In the same recommendation, the Subsidiary Body for Scientific, Technical and Technological Advice also requested the Executive Secretary to integrate the specific issues related to mountain biological diversity when preparing, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice at its ninth meeting, proposals on measures, including on training activities, that would facilitate and promote transfer of technology and technology cooperation.

E. The Open-ended Inter-sessional Meeting on the Multi-year Programme of Work of the Conference of the Parties Up To 2010

16. In recommendation 4 on the legal and socio-economic aspects of technology transfer and cooperation, the Open-ended Inter-sessional Meeting on the Multi-year Programme of Work of the Conference of the Parties up to 2010 recommended, *inter alia*, that the Conference of the Parties at its seventh meeting

(a) *Requests* the Executive Secretary, in cooperation with the World Intellectual Property Organization, the United Nations Conference on Trade and Development and other relevant international organizations, to develop or improve systems, as appropriate, of international information exchange and their inter-operability, relying, *inter alia*, on the clearing-house mechanism, with regard to available technologies for the conservation and sustainable use of biodiversity, and with regard to technology that makes use of genetic resources, and to use the clearing-house mechanism as a gateway to existing databases, including patent databases, and other information resources;

(b) *Requests* the Executive Secretary, as part of a comprehensive implementation support strategy for the Convention on Biological Diversity consistent with the multi-year programme of work and the Strategic Plan of the Convention, and drawing upon experiences from other international conventions

and processes, to develop proposals on options for mechanisms to facilitate access to technologies in the public domain and to proprietary technologies by developing countries and countries with economies in transition, and report thereon to the Conference of the Parties at its eighth meeting;

(c) *Requests* the Executive Secretary to collaborate with relevant international organizations and processes such as the ad hoc working group on technology transfer and cooperation of the Commission on Sustainable Development, with a view to developing and making available, through the clearing-house mechanism, a compendium of relevant technologies and their ownership status, including options for best practices, as well as relevant technologies arising from the use of knowledge, innovations and practices of indigenous and local communities, which are cross-referenced to relevant problems in the context of the Convention on Biological Diversity, taking into account the information contained in the thematic reports on technology transfer submitted by Parties in accordance with paragraph 4 of decision VI/25.

17. It is noteworthy that the requests to the Executive Secretary of the SBSTTA and the Inter-Sessional Meeting largely address the same subject-matter, but envisage different timelines. The proposals for the development of a programme of work on technology transfer and technology cooperation set out in the note by the Executive Secretary (UNEP/CBD/SBSTTA/9/7) make reference to a number of best practices and, in the section addressing the role of national and international information systems, present proposals on how the Clearing House Mechanism could be enhanced to act as a central mechanism for exchange of information on technology transfer and technology cooperation. Furthermore, a revised and expanded indicative list of technologies is being circulated as an information document (UNEP/CBD/SBSTTA/9/INF/13).

18. The development of a comprehensive set of proposals on options for mechanisms to facilitate access to technologies, including best practices, as well as the development of a comprehensive proposal on how to develop or improve systems, as appropriate, of international information exchange and their inter-operability, and on the use of the clearing-house mechanism as a gateway to existing databases, including patent databases, and other information resources, is reflected in the draft elements of a programme of work (UNEP/CBD/SBSTTA/9/7/Add.1), as activities for the inter-sessional period leading to the eighth meeting of the Conference of the Parties, in accordance with the recommendation of the Open-ended Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010.

III. ANALYSIS OF SECOND NATIONAL REPORTS

19. As of 10 June 2003, 89 second national reports have been submitted by Parties to the Convention.

20. Implementation of Article 16 of the Convention, on access to and transfer of technology, is afforded high priority by 34 Parties, or 38 per cent of those responding. Only 11 Parties (12 per cent) afford low priority to the implementation of this Article. For developing countries, the share of Parties affording high priority rises to almost 50 per cent (26 out of 53), and the share of Parties affording low priority decreases to 7 per cent. With regard to high prioritization, there appears to be no large difference between industrialized countries (5 out of 22, or slightly over 20 per cent) and countries with economies in transition (3 out of 13, or again slightly over 20 per cent). These results seem to indicate widespread support for this article.

21. Of all Parties that submitted reports, 80 per cent identify resources or the lack thereof as a limiting or severely limiting factor in meeting the obligations under this Article (53 for limiting; 21 for severely

limiting). When considering developing country Parties, this share increases to 95 per cent (34 out of 53 for limiting, 16 for severely limiting resources).

22. Many countries have some measures in place to facilitate access to, and transfer of technologies to other contracting Parties (41 out of 89 or 45 per cent). Few countries, however, have potential measures under review (7 out of 89 or approximately 8 per cent) and only industrialized countries have comprehensive measures in place. However, a significant number of developing countries have some measures in place (approximately 20 out of 53 or 37 per cent).

23. Approximately 25 per cent of all Parties (22 out of 89) have taken some measures so that Contracting Parties which provide access to genetic resources are provided access to and transfer of technology which make use of those resources, on mutually agreed terms, and an additional 13 per cent have potential measures under review (12 out of 89). For developing countries, the numbers are 20 per cent (11 out of 53) and 15 per cent (8 out of 53), respectively. These measures are mainly policy and administrative arrangements or legislation. No country, however, has comprehensive measures in place. In contrast, approximately 30 per cent of countries say that the issue is relevant, but have not taken measures so far (28 out of 89).

24. Approximately 20 per cent of Parties have taken some measures so that the private sector facilitates access to joint development and transfer of relevant technology for the benefit of government institutions and the private sector of developing countries, mainly policy and administrative arrangements. In addition, approximately 10 per cent have potential measures under review, and approximately 5 per cent have comprehensive measures in place. Measures are mostly policy and administrative arrangements.

25. The conduct and provision of case-studies, on the national level, on the impact of intellectual property rights on the achievement of the Convention's objectives remains deficient. More than 90 per cent of Parties reported that they had not conducted and submitted such cases studies. This seems to indicate an opportunity for further action. To initiate such research on the national level and to eventually compile and compare the research results at the international with a view to draw general lessons for suitable policy actions seems to be an important precondition to creating legal, administrative and policy environments that are conducive for the transfer of technologies, and in particular for proprietary technology.

26. With regard to Article 18 (Technical and scientific cooperation), Parties were asked if measures have been taken to promote international technical and scientific cooperation for the conservation and sustainable use of biodiversity. Only six developing countries (out of 53), one country with an economy in transition (out of 13), three least developed countries (out of 18) and three small island developing States (out of 16) stated that no measures had been taken. Conversely, 33 out of 53 developing countries, or more than 60 per cent, answered that some measures are in place, nine answered that potential measures are under review (approximately 15 per cent) and five (8 per cent) answered that comprehensive measures are in place.

27. These results indicate that, even while most Parties attach medium or even high priority to this item, and even while a number of implementing activities were already carried out by many Parties, more needs to be done to implement the Convention's provisions on technology transfer and cooperation. Lack of resources is identified by many Parties as the main challenge to the further implementation of these provisions. However, the fact that many countries have already taken some measures seem to indicate that there is an opportunity for the Convention and its Secretariat to act as an international platform to facilitate access to, and exchange of, relevant information on technology transfer and cooperation,

including information on institutional, legal and administrative enabling environments and best practices for technology transfer and cooperation.

IV. PRELIMINARY ANALYSIS OF THEMATIC REPORTS

28. In paragraph 4 of decision VI/25, on national reports, the Conference of the Parties invited Parties to submit national reports, *inter alia*, on technology transfer and cooperation in accordance with the format provided by the Executive Secretary, which should identify priorities in national biodiversity action plans, impediments to implementation, and existing and potential areas for cooperation and capacity-building, and aim to support the work on the Subsidiary Body for Scientific, Technical and Technological Advice.

29. Further to this request, the Executive Secretary sent notification 2003/009 dated 23 January 2003 reminding Parties to submit their thematic reports on Protected Areas and Transfer of Technology and Technology Cooperation by 30 March 2003. As of notification 2003/029, sent 25 March 2003, this deadline was extended to 31 May 2003, pursuant to a request of the eighth meeting of the Subsidiary Body for Scientific, Technical and Technological Advice contained in decision VIII/1 B, paragraph (a).

30. The Open-ended Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010, in its recommendation on the legal and socio-economic aspects of technology transfer and cooperation, gave further guidance on what issues and questions to focus the analysis of thematic reports. The Inter-Sessional Meeting requested the Executive Secretary to analyse the information contained in the thematic reports on technology transfer submitted by Parties and provide a report thereon to the Conference of the Parties at its seventh meeting, and indicated that the report shall identify possible gaps pertaining to, *inter alia*:

(a) The transfer of technologies in the public domain that are of importance to the thematic and relevant cross-cutting programmes of work;

(b) The transfer of technologies arising from the use of knowledge, innovations and practices of indigenous and local communities;

(c) Information on identified national needs in relation to technologies, including capacity-building needs;

(d) The transfer of technologies of relevance under relevant provisions of the Convention and the impact of intellectual property rights thereon;

(e) Case-studies, best practices and related information on the use of incentive measures, and on legislative, financial and policy measures for the transfer of technologies of relevance under the provisions of the Convention, from the perspective of recipient countries and providers, and on South-South cooperation in technology transfer.

31. As of 15 June 2003, national reports on technology transfer and technology cooperation have been submitted by the following Parties: Algeria, Austria, Canada, European Community, Ireland, Liberia, Oman, Sri Lanka, Tajikistan, Thailand, The former Yugoslav Republic of Macedonia. Given this limited number of submissions, a quantitative analysis, the identification of gaps or the assessment of opportunities and challenges is not possible at this stage. However, qualitative information given in the reports that is of relevance for the analysis is summarized below.

Information on transfer of technologies in the public domain that are of importance to the thematic and relevant cross-cutting programmes of work

32. Reporting countries do not have inventories in place for existing technologies for conservation and sustainable use of biodiversity. With regard to the development of new technology, Austria referred to its activities on molecular technologies to assess the intraspecific variation of forest trees and the interspecific variation in soil organisms. Technologies for *ex situ* collection seemed to be of special interest to submitting Parties. Algeria pointed to the role of cyroconservation. Austria reported to be active on the transfer of technologies for the maintenance and utilization of *ex situ* collections (application of research results on potatoes to the relevant worldwide gene bank collections). In its domestic programme to conserve forest genetic resources, technology development pertaining to clonal archives and to a Bacterial Artificial Chromosome (BAC) library for soil organisms is envisaged. The funding of studies on combining plant geography and genomic diversity fingerprinting is also planned. Liberia reported on a training programme for students on herbarium technology. Funding for this initiative was provided by Fauna and Flora International, through the Liberia forest re-assessment project.

33. Sri Lanka reported on the establishment of biorepositories in the National Museum and on plans to establish of public and private Zoological Gardens. With regards to other technologies for conservation and sustainable use, Liberia reported on the introduction of geographic information system (GIS) service by Conservation International in collaboration with Fauna and Flora International and the Government of Liberia. In July 2002, three Liberians received training in GIS in Washington, DC.

34. With regard to the assessment of impacts of technology transfer on biodiversity, Austria reported to be active in undertaking studies on genetically modified organisms (GMOs), but underlined that these studies are still at early stages. Canada reported to undertake impact assessment through various governmental regulatory, certification and review processes.

Information on the transfer of technologies arising from the use of knowledge, innovations and practices of indigenous and local communities

35. Liberia reported that, while indigenous technologies exist, they are not inventoried and developed, as they are contained within traditional beliefs and practices.

Information on identified national needs in relation to technologies, including capacity-building needs

36. Canada and Ireland reported to have undertaken technology needs assessments. Ireland identified ICT and biotechnology as relevant to industrial development at a national level. However, most countries reported to not have undertaken such a tech needs assessment. Lack of funds was frequently given as a main reason. Sri Lanka also referred to a lack of systematic prioritizations of important aspects in conservation and sustainable use of biodiversity.

37. With regard to capacity-building needs, reference was frequently made to the lack of institutional and human capacity. In particular, training was identified as an important element of capacity-building. Liberia and Tajikistan also pointed to the absence of infrastructure and research centres.

38. With regard to other limiting factors, Ireland pointed to company demand for technology transfer from developing countries. With regard to access, Ireland explained that the opportunities and approved practices relating to biodiversity issues in technology transfer from developing countries should be fully disseminated.

The transfer of technologies of relevance under relevant provisions of the Convention and the impact of intellectual property rights thereon

Role of intellectual property rights

39. Algeria noted that intellectual property rights are a limiting factor for the transfer of seed technology. Austria observed that, whereas it has been made clear that the technologies developed in Austria are accessible for developing countries, it has become increasingly difficult to acquire information and/or genetic material for sustainable use and development of crop diversity in developed countries. Canada noted that its patent regime seeks to balance the need for effective patent protection to encourage research and development into new products and processes that have positive environmental impacts (e.g. remediation, less toxic chemicals, etc.) for Canadians, while promoting the diffusion of information to facilitate access and use of these innovations, as well as further innovative research. Elements that help create this balance include time-limited rights, disclosure of patent application, exemptions from the rights for experimental uses, provisions allowing fair government use, and measures to address abusive practices.

40. Ireland said that intellectual property rights should probably not be a limiting factor if private companies are involved. Sri Lanka noted that most innovations related to biodiversity (farmers' rights, for seeds, breeders rights, etc.) would not be recognized under its intellectual property rights law and that there is no provision for protecting traditional technologies and public domain.

Use of technology transfer as a means to share benefits

41. Austria reported on a research project on sweet potato germplasm diversity assessment including associated nitrogen fixing bacteria that is undertaken in collaboration with CGIAR, under which unrestricted use of all results for the CGIAR system and partners in developing countries is ensured. Other initiatives include the draft proposal of a Virtual Training Center for Capacity Building (VTCCB) in cooperation with CGIAR centres, and the international capacity building programme on conservation and use of biological diversity for development, between the International Plant Genetic Resources Institute (IPGRI) and the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management.

42. Sri Lanka reported that a national policy on access to genetic resources and benefit sharing is under development by the Ministry of Environment and Natural Resources. Moreover, it has drafted an agreement for the transfer of genetic resources from Sri Lanka to an overseas research collaborator. Objectives of this agreement are to provide the legal conditions for the access to genetic resources, and the equitable sharing of benefits arising from such access through collaborative research and development.

Case-studies, best practices and related information on the use of incentive measures, and on legislative, financial and policy measures for the transfer of technologies of relevance under the provisions of the Convention, from the perspective of recipient countries and providers, and on South-South cooperation in technology transfer

Encouragement of the private sector for technology transfer

43. Algeria reported to cooperate with the private sector on pharmaceutical research, and also pointed to the financial support provided by the Ministry for the Environment for the development of research projects. Austria informed on the development of a new co-financing instrument (mixed financing) in development co-operation for private business partnerships in the micro, small and medium-sized

enterprises area that opens the possibility for members, including non-governmental organizations, from developing countries to co-operate with Austrian companies to realize projects in their home countries. High social and environmental standards are required (see also: www.bmaa.gv.at/eza).

44. Canada said it provides domestic incentives for the transfer of technology in the form of: (i) intellectual property embedded in transferred goods and services; (ii) management and business know-how to support production and distribution of goods and services; and (iii) human capacity-building. Several Canadian government departments, agencies and programmes are involved in providing incentives, either directly or indirectly, for Canadian enterprises and institutions to engage in activities involving technology transfer to developing country members and least developed countries, such as the Industrial Co-operation Division of the Canadian International Development Agency (CIDA) or the International Development Research Centre (IDRC). In addition, Industry Canada sponsors several programmes for the transfer of technology by Canadian institutions and enterprises to developing country members and least developed countries. This work aims to improve the domestic and international investment climate in order to create incentives to global markets, including developing country members and least developed countries, by spurring companies to make their products and services export-ready. It also supports international collaboration for Canadian research institutions in emerging high-growth areas of electronic commerce, genomics, environmental technologies and advanced engineering.

45. Liberia reported that, while there are no specific activities, there is an awareness program to encourage private sector to participate in such activities. Sri Lanka reported on a land lease programme by the government (in particular, the Forest Department of the Ministry of Environment and Natural Resources), and on the provision of incentives for private-sector non-governmental organizations for conservation activities such as the planting of trees or mangroves.

Technology cooperation

46. Algeria referred to its national action plan for the environment and sustainable development, as well as to its national strategy for conservation and sustainable use of biodiversity, which both include provisions on technology cooperation. Austria reported that its new Law for Development Co-operation (2001) includes mechanisms and measures to facilitate technology transfer. Austria reported on its participation in the European Cooperative Programme for Plant Genetic Resources, in IPGRI and the Ministerial Conference on the Protection of Forests in Europe with regard to forest-related technology cooperation, and in CGIAR. Moreover, the Austrian development co-operation incorporates environmental aspects in its programmes and projects and systematically conducts environmental impact assessments for projects and thus promotes the transfer of ecologically sound and innovative technologies. For instance, the transfer of know-how is an element of a project, undertaken in collaboration with the International Centre for Integrated Mountain Development (ICIMOD), in Nepal, to promote the beekeeping of local bee species (*Apis cerana*) in the Himalayan region in order to combat the negative impact on traditional land use systems by the growing introduction of alien bee species (*Apis mellifera*).

47. Canada said that it supports technology cooperation through the Canadian Food Inspection Agency. Ireland reported that successful methodologies are well established for technology transfer with developed countries, and that success stories in European technology transfer are published on the Innovation Relay Centre's website at http://irc.cordis.lu.

48. Liberia said that technology transfer is part of the National Environmental Policy of Liberia, and that the National Environmental Commission of Liberia has been in constant touch with many institutions in other countries to assist Liberia in transfer of technology, and this. The institution is now collaborating with the University of Liberia to include environmental programmes in its curriculum. The aspect was also

addressed within the tri-national work to conserve the Mount Nimba massif shared by Guinea, Ivory Coast and Liberia.

49. Sri Lanka said that a policy on science and technology including technology cooperation has been developed by the Ministry of Science and Technology. It also reported on an ongoing project funded by FAO on integrated management solutions for invasive noxious aquatic weeds in wetlands, which includes international expertise and technology cooperation. Tajikistan pointed to established channels of cooperation UNEP/GEF and other institutions, and also referred to its national strategy and action plan for biodiversity conservation. With regard to cooperation between public research and development institutions from developing countries and private-sector firms from industrialized countries and the training of developing country scientists in the application of new technologies, the Former Yugoslav Republic of Macedonia reported on the organization of a training course on the application of molecular methods in selection and conservation of domestic animals technology partnerships, and also point to the ongoing exchange of information between relevant national institutions and IPGRI, FAO and other international institutions. However, it also said there are no established formal links between national government institutions and scientific institutions.

Joint research projects

50. Algeria pointed to a number of joint research project with France, Italy and the United States, respectively. Austria pointed to its membership in several networks of the European Forest Genetic Resources Programme (EUFORGEN) and to the joint research programme "biodiversity of soil organism in forests". Canada pointed to the FireM3 work out of the Northern Forestry Centre. The Former Yugoslav Republic of Macedonia said that, while such programmes are not established on the national level, there are research activities among agricultural faculties from the former Yugoslavia for estimation of genetic diversity and genetic distances between strains of *pramenka* breed.

ANNEX

Overview of elements pertaining to technology transfer and cooperation in decisions, programmes of work and policy guidance on thematic areas and cross-cutting issues

Decision Reference	Text of decision	Comments
Strategic Plan		
Decision VI/26: Annex, Goal 2 Decision VI/26, annex, goal 2.3	Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention. Developing country Parties, in particular the least developed and the small island developing States amongst them, and other Parties with economies in transition, have increased resources and technology transfer available to implement the Cartagena Protocol on Biosafety.	
Decision VI/26, annex, goal 2.5	Technical and scientific cooperation is making a significant contribution to building capacity.	
Decision VI/30, paragraph 1	Welcomes the proposals put forward by the Executive Secretary in his note on preparations for the seventh meeting of the Conference of the Parties [(66)] and requests that preparation for the priority themes for the seventh meeting of the Conference of the Parties continue as outlined in that document;	The Executive Secretary, in addition to the preparation of the present review, compiled the thematic reports submitted by Parties; and drafted a proposals for the development of a programme of work on technology transfer and cooperation.
Decision VI/30, paragraph 3	Invites Parties, other Governments and relevant international organizations to provide appropriate financial support for the organization of the ad hoc technical expert groups on mountain biological diversity, protected areas, and technology transfer and cooperation.	
Thematic Areas		
Agricultural Biodiversity		
Decision VI/5, paragraph 21	Decides to establish an ad hoc technical expert group on genetic use restriction technologies to further analyse the potential impacts of genetic use restriction technologies on smallholder farmers, indigenous and local communities […]	AHTEG meeting in Montreal, 19-21 February 2003; report to be submitted to SBSTTA-9 and COP-7.
Decision VI/5, paragraph 23	Also invites the Food and Agriculture Organization of the United Nations to study the potential impacts of the applications of genetic use restriction technologies in the framework of the International Treaty on Plant Genetic Resources for	In progress by FAO.

	Food and Agriculture, and to consider genetic use restriction technologies in the further development of the Code of Conduct on Biotechnology as it relates to genetic resources for food and agriculture;	
Decision VI/5, paragraph 24	Invites the International Union for the Protection of New Varieties of Plants (UPOV), the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the World Intellectual Property Organization (WIPO) and other relevant organizations to examine, in the context of their work, the specific intellectual property implications of genetic use restriction technologies, particularly in respect of indigenous and local communities;	In progress by UPOV and WIPO. UPOV's position on GURTs adopted by the Council of UPOV on April 11, 2003 presented to SCBD and considered by the AHTEG on GURTs (reference to paragraph 21).
Decision VI/5, paragraph 25	Requests the Executive Secretary: a. To integrate the issues related to the impacts of genetic use restriction technologies on smallholder farmers, indigenous and local communities and on Farmers' Rights in the work under the Convention regarding Article 8(j) and related provisions and Article 14, paragraph 2, on liability and redress; b. To invite the Food and Agriculture Organization of the United Nations, in collaboration with other organizations to investigate the potential impacts of the applications of genetic use restriction technologies in forestry, livestock, aquatic and other ecosystems, and to take into account the findings of the these organisations in the development of the relevant programmes of work; and c. Given the distinct nature of genetic use restriction technologies and their potential impacts on indigenous and local communities, to invite relevant organizations to examine the applicability of existing, and to explore the need to develop new, legal mechanisms to address the application of genetic use restriction technologies.	SCBD report on the Informal Consultation of 3 February 2002 submitted for consideration by the Ad-hoc open-ended working group on Article 8(j) on 4-8 February 2002 and by COP-6.
Decision VI/5, annex 1, table 1	Programme element 2 on adaptive management such as activity 2.2) Analysis of information on cost effective practices and technologies, for 2003, by SCBD and FAO.	Compilation of information ongoing.
Decision VI/5, annex 2 "Plan of action of the International Pollinator Initiative".	Programme element 2 on capacity building: to identify management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on pollinator diversity and activity, in order to enhance productivity and the capacity to sustain livelihoods, by expanding knowledge, understanding and awareness of the multiple goods and services provided by pollinators. 2.1. Carry out a series of case-studies, in a range of environments and production systems, and in each region: […] (c) To monitor and assess the actual and potential impacts of existing and new	Ongoing activities undertaken by various institutions. GEF funding to FAO project in contribution to the implementation of the Plan of Action of IPI approved in June 2003.

	agricultural technologies. 2.2 Identify and promote the dissemination of information on cost-effective practices and technologies, and related policy and incentive measures that enhance the positive and mitigate the negative impacts of agriculture on pollinator diversity, productivity and capacity to sustain livelihoods, through: (a) comprehensive analyses in selected production systems of the costs and benefits of alternative management practices and technologies on pollinator conservation and effectiveness, […]	
Decision V/5, paragraph 23	Recommends that, in the current absence of reliable data on genetic use restriction technologies, without which there is an inadequate basis on which to assess their potential risks, and in accordance with the precautionary approach, products incorporating such technologies should not be approved by Parties for field testing until appropriate scientific data can justify such testing, and for commercial use until appropriate, authorized and strictly controlled scientific assessments with regard to, inter alia, their ecological and socio-economic impacts and any adverse effects for biological diversity, food security and human health have been carried out in a transparent manner and the conditions for their safe and beneficial use validated. In order to enhance the capacity of all countries to address these issues, Parties should widely disseminate information on scientific assessments, including through the clearing-house mechanism, and share their expertise in this regard.	Reaffirmed in decision VI/5.

Decision III/11, paragraph 1(f)	Decides to establish a multi-year programme of activities on agricultural biological diversity […] which will have the following components: […] (f) The sharing of experiences and the transfer of knowledge and technologies;	Programme of work adopted and further developed by decision V/5 and VI/5.
Decision III/11, paragraph 8	Requests that the clearing-house mechanism be used to promote and facilitate the development and transfer of technology relevant to the conservation and sustainable use of agricultural biological diversity by facilitating contacts among: […] (a) Groups needing solutions to specific problems; (b) Holders of technologies developed and maintained by many sources; (c) Technology -transfer brokers; (d) Enabling agencies which fund technology transfer;	The web site contains: Roster of Experts on Agricultural Biodiversity, case-studies, collaborative working page on GURTS, and an inter-active info-bulletin on financing where tech. brokers, agencies, holders of technology etc. can post information.
Decision III/11, Annex 3	INITIAL ISSUES FOR CONDUCTING CASE-STUDIES: […] the identification and promotion of best practices and technologies for more sustainable agriculture	Case-studies provided by Parties, other Governments and relevant organizations collected and promoted through the clearing-house mechanism. On-going activity.
	[…] the identification and promotion of the transfer of technologies for the detection of symbiotic soil micro-organisms and their use to enhance nitrogen fixation and phosphorous absorption […]	Case-studies provided by Parties, other Governments and relevant organizations collected and promoted through the clearing-house mechanism. On-going activity to be followed-up through the International Pollinator Initiative adopted by Decision VI/5, paragraph 8 and facilitated by FAO.
Forest Biodiversity		
Decision VI/22, paragraph 16	(Expanded programme of work) Urges donors and the international community to	

	contribute through financing and technology transfer to country-identified or regionally-identified priorities for forest biodiversity, with an understanding of the impact of scarce resources on the effective implementation of the objectives of the Convention;	
Decision VI/22, paragraph 19(g)	Requests the Executive Secretary to initiate the following actions addressing some initial focus areas which are identified as important first steps towards the implementation of regional and international activities of the expanded programme of work […] g) Servicing capacity-building. The Executive Secretary shall provide through the clearing-house mechanism a service for Parties, including through an Internet portal, to seek and provide support and partnerships in order to facilitate implementation of the expanded work programme on forest biodiversity. To this end, the Executive Secretary shall encourage Parties to communicate their national priorities and shall invite other Governments, regional and international organizations, and non-governmental organizations to support the programme of work through capacity-building, technology transfer and provision of financial resources;	Portal created and available on the forest biodiversity section of the web site.
Decision VI/22, annex, goal 4, objective 1(c)	Support regional cooperation and work on sustainable use of timber and non-timber forest products and services, including through technology transfer and capacity-building within and between regions.	
Decision V/4, annex, paragraph 2(c)	To identify innovative, efficient and state-of-the-art technologies and know-how relating to assessment, planning, valuation, conservation and sustainable use of forest biodiversity and provide advice on ways and means of promoting the development and transfer of such technologies.	
Decision IV/7, annex, paragraph 3 (g)	The objectives of the programme of work are: […] (g) To contribute to the access to and transfer of technology in accordance to Article 16 of the Convention;	Taken up in expanded programme of work.
Decision IV/7, annex, paragraph 7(d)	Bearing in mind Articles 16 and 17 of the Convention, use of remotesensing technologies to assist Parties to assess changes in their forest biological diversity, as well as to enhance their ability to report on certain aspects of criteria and indicators frameworks.	
Decision IV/7, annex, Paragraph 28	Promote activities to support the development of techniques and means for the effective conservation and sustainable use of biological resources, in particular, full support for technology transfer from developed to developing countries, in accordance with Article 16 of the Convention.	
Inland waters biodiversity		

Decision IV/4, annex I, paragraph 5	The clearing-house mechanism should be used to promote and facilitate the exchange of information and the transfer of technology relevant to the conservation and sustainable use of inland water biological diversity.	Section on web site devoted to inland waters holds information on case-studies, related web sites and documents. Interactive Info-bulletin can be used to post information on funding for inland water projects.
Decision IV/4, annex I, paragraph 9 (c)	The Conference of the Parties recommends that Parties: […] (c) Technology transfer: Emphasize more effective conservation and efficiency in water use, together with non-engineering solutions. Environmentally appropriate technologies should be identified, such as low-cost sewage treatment and recycling of industrial water to assist in the conservation and sustainable use of inland waters;	CHM provides information on case-studies submitted by Parties. The River Basin Initiative (www.riverbasin.org), a joint initiative of CBD and Ramsar, represents a portal on experiences relating to watershed management, including information on technologies. Both mechanisms are being continuously updated. While individual examples of transfer of non-engineering technologies for increased water use efficiency and low-cost sewage treatment have been demonstrated and reported, no mechanism for a systematic transfer of such technologies exists.
Marine and coastal biodiversity		
Decision II/10, annex II, paragraph 3(c)	In addressing these issues, the following approaches should be applied: […] (c) Recommendations should be made for scientific, technical and technological needs for capacity-building and technology transfer for the conservation and sustainable use of marine and coastal resources at the national, regional, and international levels in the context of the issue being addressed;	
Cross-cutting issues		
Access to genetic resources and benefit-		

sharing		
Decision V/26 A, paragraph 4(a),(c)	Recognizing the importance for Parties to promote trust-building and transparency in order to facilitate the exchange of genetic resources, particularly with regard to the implementation of Article 15 of the Convention: […] Urges Parties to pay particular attention to their obligations under Articles 15, 16 and 19 of the Convention, and requests them to report to the Conference of the Parties on the measures they have taken to this effect; (b) Notes that legislative, administrative or policy measures for access and benefit-sharing need to promote flexibility, while recognizing the need for sufficient regulation of access to genetic resources to promote the objectives of the Convention; (c) Notes that all countries are providers and recipients of genetic resources, and urges recipient countries to adopt, appropriate to national circumstances, legislative, administrative or policy measures consistent with the objectives of the Convention that are supportive of efforts made by provider countries to ensure that access to their genetic resources for scientific, commercial and other uses, and associated knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity, as appropriate, is subject to Articles 15, 16 and 19 of the Convention, unless otherwise determined by that provider country;	No measures have been reported by Parties as recipient countries. However, the issues of measures taken by Contracting Parties with users under their jurisdiction to ensure compliance with PIC and MAT is to be addressed by the second meeting of the Working Group on ABS in December 2003.
Decision V/26 A, paragraph 11	Decides to establish an Ad Hoc Open-ended Working Group […] to assist Parties and stakeholders in addressing the following elements as relevant to access to genetic resources and benefit-sharing, inter alia: […] mechanisms for benefit-sharing, for example through technology transfer and joint research and development; […]	The draft Bonn Guidelines and now the Bonn Guidelines adopted at COP 6 refer to technology transfer as a means of sharing benefits arising from the utilization of genetic resources.
Decision VI/24 A, annex, paragraph 16(b)(ix) (Bonn Guidelines)	In the implementation of mutually agreed terms, users should: […] (ix)Ensure the fair and equitable sharing of benefits, including technology transfer to providing countries, pursuant to Article 16 of the Convention arising from the commercialization or other use of genetic resources, in conformity with the mutually agreed terms they established with the indigenous and local communities or stakeholders involved;	The MYPOW meeting invited Parties to provide information to the Executive Secretary on experience gained in the use of the Bonn Guidelines. Further to a notification by the Executive Secretary, submissions should be received by 15 September 2003.
Decision VI/24 A, appendix II, paragraph 2(g)	Non-monetary benefits may include, but not be limited to: […] g) Strengthening capacities for technology transfer to user developing country Parties and to Parties that are countries with	

	economies in transition and technology development in the country of origin that provides genetic resources. Also to facilitate abilities of indigenous and local communities to conserve and sustainably use their genetic resources;	These submissions will be compiled for the WG-ABS in December 2003 and may provide information on the implementation of MAT, including technology transfer, taking into account the Bonn Guidelines.
Alien species		
Decision V/8, annex I, guiding principle 9(c)	Cooperation, including capacity-building Depending on the situation, a State's response might be purely internal (within the country), or may require a cooperative effort between two or more countries, such as: […] (c) States should support capacity-building programmes for States that lack the expertise and resources, including financial, to assess the risks of introducing alien species. Such capacity-building may involve technology transfer and the development of training programmes.	
Article 8(j): Traditional knowledge, innovations and practices		
Decision III/14, paragraph 10(a)	Further requests the Executive Secretary to produce, in support of the intersessional process referred to in paragraph 7, a background document containing the following: (a) The consideration of the linkages between Article 8 (j) and related issues including, inter alia, technology transfer, access to genetic resources, ownership, intellectual property rights, alternative systems of protection of knowledge, innovations and practices, incentives and Articles 6 and 7 and the remainder of Article 8;	Reflected in document UNEP/CBD/TKBD/1/2 (Traditional Knowledge and Biological Diversity) and in document UNEP/CBD/TKBD/1/3 (Report of the Workshop on Traditional Knowledge and Biological Diversity).
Global Strategy for Plant Conservation		
Decision VI/9, annex, targets 8, 15	Target 8: 60 per cent of threatened plant species in accessible *ex situ* collections, preferably in the country of origin, and 10 per cent of them included in recovery and restoration programmes Currently, over 10,000 threatened species are maintained in living collections (botanic gardens, seed banks, and tissue culture collections), representing some 30 per cent of known threatened species. It is considered that this could be increased to meet the proposed target by 2010, with additional resources, technology development and transfer, especially for species with recalcitrant seeds. […] Target 15: The number of trained people working	A series of activities is jointly implemented by the SCBD and the relevant institutions such as those listed in paragraph 14(b) of the annex to decision VI/9 and involving a wide-range of stakeholders as requested in paragraph 19 of the annex to decision VI/9.

	with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this Strategy. The achievement of the targets included in the Strategy will require very considerable capacity-building, particularly to address the need for conservation practitioners trained in a range of disciplines, with access to adequate facilities. In addition to training programmes, the achievement of this target will require long-term commitment to maintaining infrastructure. "Appropriate facilities" are understood to include adequate technological, institutional and financial resources. Capacity-building should be based on national needs assessments. It is likely that the number of trained people working in plant conservation world-wide will need to double by 2010. […] Given the current geographical disparity between biodiversity and expertise, this is likely to involve considerably more than a doubling of capacity in many developing countries, small island developing States and countries with economies in transition. Increased capacity should be understood to include not only in-service training, but also the training of additional staff and other stakeholders, particularly at the community level.	
Global Taxonomy Initiative		
Decision IV/1 D, annex, paragraph 3	SUGGESTIONS FOR ACTION: […] Parties and international donors should encourage partnerships between institutions in developed and developing countries so as to promote scientific collaboration and infrastructure rationalization. Such collaboration should include the development of national, subregional, regional and global training initiatives. Taxonomic institutions in each nation, both individually and regionally, should develop national priorities in taxonomic training, infrastructure, new technology, capacity-building and market needs.	
Sustainable use of biodiversity		
Decision V/24, paragraph 5(d)	Invites Parties, Governments and relevant organizations to undertake appropriate actions to assist other Parties, especially developing countries and countries with economies in transition, to increase their capacity to implement sustainable-use practices, programmes and policies at regional, national and local levels, especially in pursuit of poverty alleviation. Appropriate actions may include: […] (d) Information dissemination and appropriate technology transfer under mutually agreed terms;	
Clearing-house mechanism		
Decision IV/2, paragraph 10(e)	Instructs the Executive Secretary: […] (e) To assist in ensuring that the implementation of Articles 16 (Transfer of and Access to Technology), 17	The clearing-house mechanism has implemented many

	(Information Exchange) and 18 (Scientific and Technical Cooperation) of the Convention on Biological Diversity is facilitated by the clearing-house mechanism;	mechanisms (electronic forums, interactive info-bulletin, databases, roster of experts, electronic collaborative space, etc.) toward this goal. It has established working partnerships with international organizations and initiatives to meet this decision.
Decision V/14, annex I, paragraph (g)(ii) Decision V/14, annex II, paragraph (f)	(g) Further develop the clearing-house mechanism to assist developing country Parties and Parties with economies in transition to gain access to information in the field of scientific and technical cooperation, in particular on: […] (i) Funding opportunities; (ii) Access to and transfer of technologies; (iii) Research cooperation facilities; (iv) Repatriation of information; (v) Training opportunities; and (vi) Promoting and facilitating contact with relevant institutions, organizations, and the private sector, providing such services. Propose options for improving ways and means by which the clearing-house mechanism can facilitate access to and transfer of technology.	Established MoC with UNEP's Sustainable Alternatives Network; information on access can be made available through Interactive Info-bulletin and electronic forums. Recommendations for access to and transfer of technologies made in the CHM Strategic Plan (UNEP/CBD/COP/5/INF/3). Recommendations implemented.
Operations of the Convention		
Decision V/20, paragraph 32	Decides that every effort should be made to promote the development of the clearing-house mechanism with respect to its role in facilitating the transfer of technology and know-how through exchanging and disseminating information, and in enhancing capacity-building, especially at the national level, taking into account the review of the mechanism;	Ongoing. SBSTTA recommendations are inclusive of the role played by the CHM in technology transfer.
