CONVENTION ON
BIOLOGICAL DIVERSITY

Distr.
GENERAL

UNEP/CBD/SBSTTA/1/5
21 July 1995

ORIGINAL: ENGLISH

SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL
AND TECHNOLOGICAL ADVICE
First meeting
Paris, 4-8 September 1995
Item 5.3 of the provisional agenda

WAYS AND MEANS TO PROMOTE AND FACILITATE ACCESS TO, AND TRANSFER AND DEVELOPMENT OF TECHNOLOGY

Note by the Secretariat

1. INTRODUCTION

1. At its first meeting, held in Nassau, The Bahamas, from 28 November to 9 December 1994, the Conference of the Parties requested the first meeting of the Subsidiary Body for Scientific, Technical and Technological Advice, in accordance with Article 25, paragraph 2(c), to provide advice to the second meeting of the Conference of the Parties on "ways and means to promote and facilitate access to, and transfer and development of technologies as envisaged in Articles 16 and 18 of the Convention (priority item)" (UNEP/CBD/COP/1/17, Annex II, Decision I/7).

2. The Conference of the Parties also decided that in its Medium-Term Programme of Work it wished to "consider ways to promote and facilitate access to and transfer of technology, as envisaged by Articles 16 and 18 of the Convention" at its second and third meetings (Decision I/9).

3. The Conference of the Parties further decided that "in accordance with Article 16 of the Convention, and to meet the objectives of conservation of biological diversity and sustainable use of its components, projects which promote access to, transfer of and cooperation for joint development of technology" would be one of the programme priorities for access to and utilization of financial resources available through the financial mechanism under the Convention (Decision I/2).

4. The present note has been prepared to help the Subsidiary Body for Scientific, Technical and Technological Advice in providing the necessary advice to the Conference of the Parties. This note

/...

United Nations
Environment
Programme
UNEP

recalls discussions and decisions so far adopted within the framework of the Convention; reviews the provisions of Agenda 21 and subsequent measures on transfer of technology adopted within the framework of the Commission on Sustainable Development; reports on similar processes under way within the framework of other relevant Conventions; highlights some issues the Subsidiary Body for Scientific, Technical and Technological Advice may wish to address; and suggests a possible process for consideration of these issues by the Subsidiary Body for Scientific, Technical and Technological Advice.

2. BACKGROUND

5. UNCTAD defines technology transfer as the "transfer of systematic knowledge for the manufacture of a product, for the application of a process or for the rendering of a service".[1]

6. Chapter 34 (*Transfer of environmentally sound technology, cooperation and capacity-building*) of Agenda 21 states that "environmentally sound technologies are not just individual technologies, but total systems which include know-how, procedures, goods and services, and equipment as well as organizational and managerial procedures. This implies that when discussing transfer of technologies, the human resource development and local capacity-building aspects of technology choices, including gender-relevant aspects, should also be addressed. Environmentally sound technologies should be compatible with nationally determined socio-economic, cultural and environmental priorities" (paragraph 34.3).

7. Article 2 of the Convention states that "technology includes biotechnology". The Expert Panels Established to Follow-up on the Convention on Biological Diversity further considered that "the term 'technology' refers to technology protected by intellectual property rights as well as that which is in the public domain" (*Technology Transfer and Financial Issues: Issues and Options from Panel III*, paragraph 1.1) (UNEP/Bio.Div./Panels/Inf.3).

8. The Subsidiary Body for Scientific, Technical and Technological Advice will recall that there is a substantial body of information on the transfer of technology, and that many initiatives on transfer of technology are under way within the UN system, within other intergovernmental organizations, and at a bilateral level. Relevant activities are also under way within treaty bodies, including the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal and the UN Framework Convention on Climate Change. Many of these initiatives concern the international transfer of technology for industry (particularly the manufacturing, energy and mining sectors), but they also include other areas of technology such as those concerned with agriculture, health care and education. The public management of the environmental impacts of economic activities has also become an important category of technology transfer. The Subsidiary Body for Scientific, Technical and Technological Advice may wish to assess these various processes in terms of their relevance to the specific objectives of the Convention, in order to make appropriate recommendations to the Conference of the Parties, including recommendations concerning the merits of following and/or participating in relevant processes or of undertaking additional initiatives in respect of the specific needs of the Convention not addressed in other fora.

9. The situation facing countries wishing to acquire and develop technology, particularly that appropriate for achieving more environmentally sustainable development, has altered substantially over

[1] UNCTAD. Transfer and Development of Technology in Developing Countries: A Compendium of Policy Issues. Geneva, 1990

recent years. The current context has been described in a recent report as including:

(a) a more widespread recognition that the main agents of technology transfer are likely to be private firms;

(b) changed perceptions about the no less important role of government in the process of technology transfer, particularly where markets are less effective in the selective and intelligent provision of the necessary infrastructure and in the creation of the necessary 'climate' for development;

(c) a growing concern that aid-related technical cooperation is frequently no longer effective in transferring technology;

(d) a considerable strengthening in many developing countries of the human and institutional capabilities required to undertake and manage the transfer of technology;

(e) the emergence of a much larger number of organizations and programmes, operating on both commercial and concessional terms, for facilitating the transfer of technology to developing countries;

(f) the growth in many developing countries of much stronger capabilities for generating a greater proportion of the technology they use - although in many countries these remain latent capabilities with their full potential still unexploited;

(g) the emergence of networks, consortia and 'alliances' of firms and institutions as (i) sources of a rapidly growing proportion of the new technology generated in the developed countries, and as (ii) mechanisms which enterprises increasingly use to enhance their technological learning.

This new context is also characterized by the opportunities arising from the acceptance by most governments at UNCED that the international transfer of technology would be an essential element in achieving sustainable development."[2]

3. ACTIVITIES UNDER THE CONVENTION

10. Prior to the entry into force of the Convention, two documents addressing the issue of technology transfer were prepared:

(i) The third session of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity (Madrid, 24 June - 3 July 1991) had before it the note *Description of Transferable Technologies Relevant to Conservation of Biological Diversity and its Sustainable Use* (UNEP/Bio.Div./W.G.2/3/10). This note provided indicative lists of (i) technologies for the conservation of biological diversity, (ii) technologies for the sustainable use of biological diversity, and (iii) conceptual approaches to hard and soft technologies for conservation and rational use of biodiversity.

(ii) Expert Panel III (see above) provided background information on technology transfer

[1] Andrew Barnett, Martin Bell and Christopher Freeman *Re-Thinking International Technology Transfer: Sustainable Developmment and Proposals for New International Initiatives*, Report prepared for the International Development Research Centre of Canada; Science Policy Research Unit, University of Sussex, UK, December 1993, pp i-ii.

issues as part of the preparations for the first meeting of the Intergovernmental Committee. The Panel's report addressed (i) information on relevant technologies, (ii) modalities for technology transfer, and (iii) an overall approach.

11. At its first meeting (Geneva, 11-15 October 1993), the Intergovernmental Committee requested the Executive Director of UNEP to convene an Open-ended Intergovernmental Meeting of Scientific Experts, with the following terms of reference (UNEP/CBD/IGSc/1/2).

(a) identification of scientific programmes and international cooperation in research;

(b) preparation of an agenda for scientific and technological research on the conservation and sustainable use of biological diversity;

(c) identification of innovative, efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity.

12. Subcommittee II of the Open-ended Intergovernmental Meeting of Scientific Experts (Mexico City, 11-15 April 1994) considered item c) above, identifying the following sub-items (UNEP/CBD/IC/2/11, paragraphs 48-49):

(a) Technologies and know-how relevant to the identification, characterization and monitoring of ecosystems (including agro-ecosystems); species (including cultivated and domestic species), and genetic resources (including agricultural genetic resources);

(b) Technologies and know-how for the *in situ* and *ex situ* conservation of components of biological diversity;

(c) Development of methods to measure sustainability;

(d) Ways to integrate, in modern management practice, knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles;

(e) Scientific and technical programmes for training in conservation of biological diversity and sustainable use of its components;

(f) Data collection, management and transfer;

(g) Ways and means of promoting development and/or transfer of innovative, efficient and state-of-the-art technologies.

The Sub-committee stressed that "technologies should be appropriate within the country concerned and that old and proven techniques often could be as appropriate as more modern technologies, in developed as well as in developing countries. It was further stated that advanced and traditional technologies should be given equal weight in the Sub-committee's discussions" (paragraph 53).

13. The Sub-committee's examination of sub-items (a) to (g) above led to the adoption of a series of indicative lists of technologies corresponding to each sub-item (Annexes II to IX). Of particular interest for the purposes of the Subsidiary Body for Scientific, Technical and Technological Advice is

the list adopted in respect of sub-item g), which proposed four categories of ways and means of promoting development and/or transfer of innovative, efficient and state-of-the-art technologies relevant to the conservation and sustainable use of biological diversity: (i) infrastructure and capacity-building; (ii) information; (iii) technology development; and (iv) technology exchange (see Annex VI).

14. At its second meeting (Nairobi, 20 June -1 July 1994), the Intergovernmental Committee considered the report of the Open-ended Intergovernmental Meeting of Scientific Experts, *inter alia*, in its examination of the range of subject areas of the proposed clearing-house mechanism. It recommended that the mechanism be "at the forefront of identifying sources of information on advanced technologies and techniques, including biotechnology, ecosystem and species management, and data collection and evaluation, in order to promote technological cooperation and partnership among nations" (UNEP/CBD/COP/1/4, paragraph 130).

15. At its first meeting, the Conference of the Parties considered, in addition to the relevant matters referred to in paragraphs 1 to 3 above, policy aspects of the clearing-house mechanism for technical and scientific cooperation. It requested the Secretariat to prepare, for the second meeting of the Conference of the Parties, a comprehensive study, according to Article 18 of the Convention, containing concrete costed recommendations to assist it in the establishment of the mechanism (Decision I/3).

4. THE COMMISSION ON SUSTAINABLE DEVELOPMENT

16. Chapter 34 of Agenda 21 ('Transfer of environmentally sound technology, cooperation and capacity-building') proposes five objectives:

(a) to help ensure the access, in particular of developing countries, to scientific and technological information, including information on state-of-the-art technologies;

(b) to promote, facilitate, and finance, as appropriate, the access to and the transfer of environmentally sound technologies and corresponding know-how, in particular to developing countries, on favourable terms, including on concessional and preferential terms, as mutually agreed, taking into account the needs to protect intellectual property rights as well as the special needs of developing countries for the implementation of Agenda 21;

(c) to facilitate the maintenance and promotion of environmentally sound indigenous technologies that may have been neglected or displaced, in particular in the developing countries, paying particular attention to their priority needs and taking into account the complementary roles of men and women;

(d) to support endogenous capacity-building, in particular in developing countries, so they can assess, adopt, manage and apply environmentally sound technologies. This could be achieved through *inter alia*:

(i) human resource development;

(ii) strengthening of institutional capacities for research and development and programme integration;

(iii) integrated sector assessments of technology needs, in accordance with countries' plans, objectives and priorities as foreseen in the implementation of Agenda 21 at the

national level;

(e) to promote long-term technological partnerships between holders of environmentally sound technologies and potential users.

17. To attain these objectives, seven sets of activities are proposed:

(a) development of international information networks which link national, subregional, regional and international systems;

(b) support of and promotion of access to transfer of technology;

(c) improvement of the capacity to develop and manage environmentally sound technologies;

(d) establishment of a collaborative network of research centres;

(e) support for programmes of cooperation and assistance;

(f) technology assessment in support of the management of environmentally sound technology;

(g) collaborative arrangements and partnerships.

18. In paragraphs 13 to 21 of chapter 33 (*Financial resources and mechanisms*), Agenda 21 addresses the means of implementation of the activities identified in its other chapters. These include the "mobilization of higher levels of foreign direct investment and technology transfers should be encouraged through national policies that promote investment and through joint ventures and other modalities" (paragraph 33.15).

19. A review of progress in the implementation of the provisions of Agenda 21 in respect of education, science, transfer of environmentally sound technologies, cooperation and capacity-building is a standing item on the agenda of the meetings of the Commission on Sustainable Development. At its second session (May 1994), the Commission reviewed reports on the transfer of technology, including the report of the Inter-sessional Open-ended Working Group on Technology Cooperation and Transfer (E/CN.17/1994/11); the Task Manager's Report on Transfer of Environmentally Sound Technology, Cooperation and Capacity-Building; section III of the report of the Secretary General (E/CN.17/1994/2); and the relevant part of the report of the High-level Advisory Board (E/CN.17/1994/13).

20. The report of the Inter-sessional Open-ended Working Group on Technology Cooperation and Transfer identified three key areas requiring priority attention (E/1994/33, paragraph 79):

(a) access to and dissemination of reliable information on environmentally sound technologies;

(b) institutional development and capacity-building;

(c) financial and partnership arrangements.

The Commission made eleven recommendations to, *inter alia,* organizations of the United Nations system, governments, industry associations, research institutes and other non-governmental organizations for further work on these questions (paragraph 90).

21. In the inter-sessional period, a number of meetings were organized relating to the transfer of environmentally sustainable technologies. Two of these are particularly relevant for the purposes of the Subsidiary Body for Scientific, Technical and Technological Advice: the Workshop on the Promotion of Access to and Dissemination of Information on Environmentally Sound Technologies held by the Government of the Republic of Korea (Seoul, 30 November - 2 December 1994) and the Round Table on Technology Transfer, Cooperation and Capacity-Building, organized by UNIDO in cooperation with UNEP and the DPCSD (Vienna, 6 - 8 February 1995).

22. The reports of these meetings were incorporated into the report of the Secretary-General *Transfer of environmentally sound technologies, cooperation and capacity-building* (E/CN.17/1995/17), reviewed by the Commission at its third session (April 1995). This report contained the addendum *Compilation of Information on Policies and Programmes of Countries, International Organizations and Financial Institutions to Promote Environmentally Sound Technology Transfer, Cooperation and Capacity-Building.* To assist the Commission in its review, UNEP submitted its interim report *Survey of Information Systems Related to Environmentally Sound Technologies* and the DPCSD prepared the background document *Financing the transfer of environmentally sound technology.*

23. The Secretary-General's report focused on the three areas identified at the second session (see paragraph 18, above) and provided information on the experiences gained and the lessons learned by national governments, international organizations and the private sector. Policy recommendations were made for each of these areas, on the basis of which a proposed work programme was suggested for use at the country level by national governments, the United Nations system, other intergovernmental organizations and the private sector.

24. This work programme, adopted by the Commission in its decision *Transfer of environmentally sound technologies, cooperation and capacity-building* (E/CN.17/1995/L.6), contains the following elements:

A: Access to and dissemination of information on environmentally sound technologies

(1) UNEP is invited to continue its survey of existing information systems and sources, including taking into account other work now under way, and submit a report to the fourth session of the Commission in 1996;

(2) information and experience on the successful implementation of transfer operations should be shared and the results made available to the Commission;

(3) information and experiences on the impact and effectiveness of governmental, public and private initiatives and policies should be shared;

B: Institutional development and capacity-building for managing technological change

(4) effective measures at the national level to develop the skills, in particular of developing countries, to access, adapt and apply environmentally sound technologies and to enhance the innovative capabilities of users, including:

(a) establishing environmentally sound technology centres,

(b) developing criteria or guidelines for technology assessment,

(c) sharing experience on national needs assessments,

(d) encouraging private sector joint ventures and partnerships, emphasizing SMEs,

(e) developing environmental performance indicators,

(f) developing measures for strengthening the 'technology triangle';

C: Financial and partnership arrangements

(5) urgent and concrete steps towards the provision and mobilization of resource flows from developed to developing countries.

25. The Commission urged "Governments, relevant organizations of the United Nations system, other intergovernmental organizations, the secretariats of the various international conventions, and major groups, particularly business and industry, to make clear commitments to undertake elements of the [above] work programme" (paragraph 2, emphasis added).

26. In its decisions and recommendations on *Financial resources and mechanisms* (see ... *[ch33, paras 20-25 in "Advanced Unedited Draft"]*), the Commission addressed the financing of the transfer of environmentally sound technology and biotechnology. It recommended, *inter alia*, that the need for and the effectiveness of "environmentally sound technology rights banks" and the practical feasibility of establishing such banks should be further studied (*[para 22]*); and that proposals for the establishment of an International Venture Capital Fund for Biotechnology require further study and consultations among interested governments before concrete proposals can be made (*[para 24]*).

27. The report of the Secretary-General to the Commission *Conservation of biological diversity* (E/CN.17/1995/7) reaffirmed that the Convention and other related agreements would continue to be the principal instruments for undertaking and ensuring the effective conservation and sustainable use of biological and genetic resources, and the fair and equitable distribution of its benefits (paragraph 85). The report also noted that "since UNCED, there appear to have been no major initiatives on the issues of technology transfer and financial mechanism(s) that would ensure or guarantee the new and additional financial resources required by developing countries. These are issues that require urgent intergovernmental and multi-agency responses" (paragraph 86). The Commission "urge[d] the international community to support efforts aimed at capacity-building as well as human resource development, and at the transfer of technology to developing countries for the conservation of biodiversity [...] and also urge[d] each country to take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitate access to joint development of technology, in accordance with Article 16.4 of the Convention" (see ... *[chap15, para 9(b) in "Advance Unedited Draft"]*).

28. The Subsidiary Body for Scientific, Technical and Technological Advice may wish to note that, in the current inter-sessional period:

(a) the second biennial session of the Panel of Experts of the Commission on Science and

Technology for Development set out principles for the application of technologies that support integrated land management under site-specific conditions, and invited FAO, UNEP, Habitat and IFAD to design appropriate programmes;

(b) UNEP will convene an Expert Meeting on the Establishment of a 'Consultative Mechanism' on environmentally sustainable technology information exchange systems (Paris, 9-11 October 1995);

(c) two inter-sessional working groups will meet to prepare for the fourth session of the Commission on Sustainable Development. The group on sectoral issues will deal with protection of the atmosphere (chapter 9) and protection of the oceans, all kinds of seas and coastal areas (chapter 17). The other group will address financial resources and changing consumption patterns. Both groups will discuss transfer of technology, cooperation and capacity-building. The meetings will take place in early 1996.

5. OTHER RELEVANT CONVENTIONS

29. The Subsidiary Body for Scientific, Technical and Technological Advice may wish to note decisions taken and processes under way on the question of transfer of technology within the framework of other conventions, with a view to advising the Conference of the Parties on possible areas of coordination and/or areas of potential duplication of effort.

30. Decision 13/CP.1 (*Transfer of technology*) of the Conference of the Parties to the Framework Convention on Climate Change, adopted at its first meeting (1995), requests the Convention secretariat to: (a) prepare an itemized progress report on concrete measures taken by Annex II Parties on commitments to the transfer of environmentally sound technologies and know-how; and (b) to prepare an inventory and assessment of relevant environmentally sound and economically viable technologies, including an elaboration of possible terms of transfer. The secretariat is further requested to submit these documents to the Conference of the Parties at its second session (to be held no later than October 1996) through the Subsidiary Body for Scientific and Technological Advice, to update them at intervals not exceeding one year, to take the advice of the SBSTA in implementing these responsibilities, and to coordinate with the relevant United Nations agencies and other organizations and institutions (FCCC/CP/1995/7/Add.1).

31. Decision I/13 of the Conference of the Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal adopted at its first meeting (1992), and Decision II/19 of its second meeting (1994), both entitled *Establishment of Regional Centres for Training and Technology Transfer* determine that the Open-ended Ad Hoc Committee of the Conference should identify the specific needs of different regions and subregions for training and technology transfer and calls for the selection of sites for the establishment of regional centre(s) (UNEP/SBC/94/3). As part of the process for establishing centres for training and technology transfer in all five regions, a subsequent feasibility study for Latin America and Caribbean region was conducted, resulting in a recommendation to create a regional training centre coordinating the activities of three subregional centres and an analysis of the needs of African countries was undertaken (UNEP/CHW/C.1/2/10).

6. ELEMENTS OF A POSSIBLE PROGRAMME OF WORK

32. In deciding how to address the provisions of Articles 16 and 18, the Subsidiary Body for

Scientific, Technical and Technological Advice may wish to consider the usefulness of conducting its review under the following headings:

(a) how to facilitate the identification, assessment and selection of technologies;

(b) how to facilitate access to and finance the acquisition of technologies;

(c) how to facilitate participation in the international development of technologies;

(d) how to facilitate the assimilation and further development of technologies after acquisition.[3]

6.1 Facilitating the identification, assessment and selection of technologies

33. Information about technologies is often difficult to locate and acquire, especially for small and medium enterprises, and particularly in developing countries. When information is obtained, the assessment and evaluation of options are often complex and costly activities. In developed countries these tasks are often undertaken by public or private research or consultancy groups, to support public decision-making or decision-making by private firms. Some developing countries have developed similar capabilities. In other cases these tasks can be commissioned commercially or through multilateral and bilateral aid agencies.

34. A frequent response to the needs of developing countries lacking such capability is to propose the establishment of data bases, clearing houses or brokering systems. Three features which appear to be critical to the usefulness of such mechanisms have been identified:

(a) "localness": an intimate connection with local producers and a detailed knowledge of local markets and other conditions;

(b) "style": specific cultures and mechanisms to make them demand-driven rather than supply-oriented;

(c) in-house capacities covering not only technology and technical information, but a wider range of inter-connected services, linked to both formal and informal information systems and networks.[4]

35. In its consideration of the issues surrounding the identification, assessment and selection of those technologies relating to the conservation and sustainable use of biological diversity, the Subsidiary Body for Scientific, Technical and Technological Advice may wish to:

(a) examine the indicative lists of relevant technologies adopted by the Open-ended Intergovernmental Meeting of Scientific Experts on Biological Diversity, with a view to confirming or adding to them as appropriate;

---

[3] This framework, and much of this section, draws on Barnett et al (1993), op.cit.

[4] Barnett et al (1993), op.cit., pp21-29

(b) recall Article 18.4 of the Convention and paragraph 34.14(c) of Agenda 21 concerning the promotion of environmentally sound indigenous and traditional technologies;

(c) recall Decision I/3 of the Conference of the Parties (*Clearing-house mechanism for technical and scientific cooperation*);

(d) note the decisions of the Commission on Sustainable Development, contained in its *Work Programme on the Transfer of environmentally sound technologies, cooperation and capacity-building*, in particular those relating to the survey by UNEP of existing information systems and sources and to the recommendation of the establishment or strengthening of environmentally sound technology centres, with a view to determining their relevance to the issues under review in the Convention;

(e) note the decisions by the Conference of the Parties to the Basel Convention on the establishment of regional centres for training and technology transfer, and the activities undertaken by the Open-ended Ad Hoc Committee and the Secretariat of that Convention leading to the selection of sites for regional and sub regional centres, and consider whether such a model would be appropriate for the Convention.

6.2 Facilitating access to and financing the acquisition of technologies

36. The Subsidiary Body on Scientific, Technical and Technological Advice may wish to consider the following issues with a view to providing advice to the Conference of the Parties on:

(a) the proportion of identified technologies relating to the conservation and sustainable use of biological diversity, including biotechnology, that is in the public domain or whose patents have expired;

(b) the proportion of the total costs of acquiring technologies, including biotechnology, and bringing them into use accounted for by payments in respect of proprietary rights;

(c) facilitating and/or subsidizing the acquisition by developing countries of technologies subject to proprietary rights, including through the aid programmes of multilateral and bilateral agencies and through the establishment of 'environmentally sound technology rights banks';

(d) the effectiveness of aid-related technical cooperation in transferring the technologies and know-how relevant to the conservation and sustainable use of biological resources;

(e) the availability of financial resources from all sources, including the financial mechanism, other financial institutions as referred to in Article 21.4, private sector and philanthropic sources, for access to and transfer and development of technologies as envisaged in Articles 16 and 18.

37. The Subsidiary Body on Scientific, Technical and Technological Advice will recall that the Conference of the Parties will consider at its second meeting, *inter alia*, "Information provided by Governments as well as relevant reports from appropriate international organizations regarding policy, legislative, or administrative measures related to intellectual property rights as provided in Article 16 of the Convention and to access and transfer of technology that makes use of genetic resources" (UNEP/CBD/COP/1/17, paragraph 5.4.2).

38. The Subsidiary Body on Scientific, Technical and Technological Advice will also recall

Decision I/2 (Financial resources and mechanism), and in particular its Programme Priority (f) (see paragraph 3, above), and Decision I/9 (Medium-term programme of work) which includes as a standing item a review of matters relating to the financial mechanism.

6.3 Facilitating participation in the international development of technologies

39. There is widespread recognition that transfers of technologies inappropriate to the needs and conditions of developing countries have occurred. In many cases this has been because the majority of the technology available to developing countries has been developed in developed countries for their own needs and circumstances. Not only may technologies appropriate for a developed country be inappropriate in a developing country, but technologies developed to be environmentally sound in one context may be unsound in another.

40. Many developing countries have over recent years considerably strengthened capabilities for generating their own technology. Both the Convention and Agenda 21 recognize that, in many cases, indigenous and traditional technologies may provide appropriate solutions to the technology needs of all countries. In many cases technology needs are rarely best addressed by the transfer of ready-made technology, but require tailor-made solutions in accordance with specific conditions. For these reasons joint technology development initiatives involving developed and developing country institutions, public and private, may bring advantages to all parties.

41. The Subsidiary Body on Scientific, Technical and Technological Advice may wish to consider how such partnerships might be developed in order to promote and facilitate the development of technologies as envisaged in Articles 16 and 18. In particular it may wish to consider the merits of the following activities and appropriate mechanisms to carry them out:

(a) facilitating participation by developing country institutions and enterprises in existing consortia;

(b) facilitating the formation of new consortia;

(c) financing the participation in consortia of developing country participants;

(d) assistance with costs of strengthening the technological capabilities of developing country institutions where these fall below the level required for participation in consortia.[5]

6.4 Facilitating the assimilation and further development of technologies after acquisition

42. Technology transfer in isolation from other efforts may make only a limited contribution to strengthening human and institutional capabilities in developing countries, especially capabilities for managing and generating further technological change. Particular attention needs to be paid to what happens after technology has been transferred. Agenda 21 calls for the "building up of economic, technical and managerial capabilities for the efficient use and further development of transferred technology" (paragraph 34.4).

43. The prospects for economic development and for achieving the objectives of the Convention will be improved to the extent to which developing countries can increase their technological

[5] Barnett et al (1993), op.cit., p46

capabilities for conserving and sustainably using their biological resources. Although equitable sharing of returns on the sale of products derived from biological resources can give developing countries incentives to conserve biological diversity, longer-term benefits will stem from technological cooperation and capacity-building in science and technology. It may well be possible even for small countries to move to the frontiers of technology in specific fields by enhancing their human resource capacity. By investing in training, by identifying biological resources and technologies, and by seeking ways to add value to biological resources, developing countries can pursue long-term development strategies.[6]

44. The Subsidiary Body for Scientific, Technical and Technological Advice may wish to consider what specific actions it could recommend to enhance the capacity of developing countries to assimilate and further develop technology as envisaged in Articles 16 and 18.

7. CONCLUSION

45. The identification of ways and means to promote and facilitate access to, and transfer and development of technologies as envisaged in Article 16 and 18 involves the review of complex issues that do not easily lend themselves to short-term treatment. The Subsidiary Body on Scientific, Technical and Technological Advice is required to provide advice to the Conference of the Parties at its next meeting. The issues raised intersect with other items in the Medium-term Work Programme that will be reviewed at the next meeting of the Conference of the Parties.

46. The Conference of the Parties will also review at its second meeting concrete costed recommendations for the establishment of the clearing house mechanism for technical and scientific cooperation, and will need advice on how a proposed programme of work in respect of ways and means to promote and facilitate access to, and transfer and development of technologies as envisaged in Articles 16 and 18 will relate to the proposed mechanism.

47. Related review processes are under way in the Commission on Sustainable Development, and the Subsidiary Body on Scientific, Technical and Technological Advice may wish to decide what advice to give the Conference of the Parties regarding the call by the Commission for, *inter alia*, international conventions to make clear commitments to undertake specific elements of its work programme on the transfer of environmentally sound technologies, cooperation and development. A possible course of action might be to examine in detail the work programme to identify what elements correspond to provisions contained in the Convention and to recommend that the Conference of the Parties inform the Commission of these. In this way the Conference of the Parties would also inform the Commission that, by becoming Parties to the Convention, Governments have made clear commitments to these specific elements of the Commission's work programme.

48. In examining the Commission's work programme, in particular the survey of existing information systems and sources being coordinated by the United Nations Environment Programme, the Subsidiary Body on Scientific, Technical and Technological Advice may wish to give special attention to ensuring that this survey covers existing mechanisms, public and private, in key areas for the purposes of the Convention, including technologies for the conservation and sustainable use of terrestrial, aquatic, coastal and marine biological diversity, and, as appropriate, give advice to the Conference of the Parties on how to address any possible gaps.

---

[6] Reid et al. *Biodiversity Prospecting* World Resources Institute, Washington DC, 1993. pp 43-44

49. The Subsidiary Body on Scientific, Technical and Technological Advice may also wish:

(a) to address the question of why the transfer and development of technologies as envisaged in Articles 16 and 18 has been successful in some fields and not in others;

(b) to recommend that the Secretariat be requested to undertake, for the guidance of the Conference of the Parties, a study of decisions adopted and processes under way within the framework of other relevant conventions in respect of transfer of technology, in accordance with Article 23, paragraph 4(h);

(c) to advise the Conference of the Parties on a possible contribution to the work of the inter-sessional working groups of the Commission on Sustainable Development in respect of transfer of technology, cooperation and capacity-building.

50. Given the number and complexity of these tasks, and in accordance with decisions to be taken under item 3 of the provisional agenda (*Matters related to the modus operandi of SBSTTA*), in particular in accordance with the recommendations of section 3.2 of the note by the Secretariat (UNEP/CBD/SBSTTA/1/2), the Subsidiary Body on Scientific, Technical and Technological Advice may wish to consider establishing a panel of experts to consider these issues further. The terms of reference of such a panel might be based on the issues identified in sections 6 and 7 of the present note.