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Item 25 of the provisional agenda*

TECHNOLOGY TRANSFER AND COOPERATION

Synthesis of information contained in thematic reports on technology transfer and cooperation

Note by the Executive Secretary

I. INTRODUCTION

1. At its sixth meeting, in decision VI/25, the Conference of the Parties adopted the guidelines and format for a thematic report on transfer of technology and technology cooperation, which were prepared by the Executive Secretary following a request by the Inter-Sessional Meeting on the Strategic Plan, National Reports and the Implementation of the Convention held in Montreal from 19 to 21 November 2001.
2. In the same decision, the Conference of the Parties invited the Parties to submit their thematic reports on transfer of technology and technology cooperation by 31 March 2003. At its eighth meeting, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), in recommendation VIII/1 B, recommended that the deadline for submission of this thematic report would be extended to 31 May 2003. By the extended deadline, only 10 reports had been received. By the time the present note was prepared, a total of 22 reports had been received from: Algeria, Austria, Australia, Canada, China, Colombia, European Community, Finland, Germany, Iran (Islamic Republic of), Ireland, Japan, Liberia, , Mexico, Norway, Oman, Poland, Spain, Sri Lanka, Switzerland, Tajikistan; Thailand, and The former Yugoslav Republic of Macedonia.
3. The Inter-Sessional Meeting on the Multi-Year Programme of Work of the Conference of the Parties up to 2010, which was held in Montreal from 17 to 20 March 2003, considered the legal and socio-economic aspects of technology transfer and cooperation, requested the Executive Secretary to analyse the information contained in the thematic reports on technology transfer submitted by Parties in accordance with the paragraphs of decision VI/25 and identify possible gaps pertaining to, *inter alia*:

* UNEP/CBD/COP/7/1 and Corr.1.

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- (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 under the Convention and the impact of intellectual property rights on 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;

and provide a report thereon to the Conference of the Parties at its seventh meeting.

4. This note has been prepared by the Executive Secretary pursuant to that request. Section II briefly outlines the limitations for an analysis of the information received so far; section III contains a synthesis of information pertaining to the recommendations of the Inter-Sessional Meeting; section IV presents a synthesis of the information on other issues covered in the thematic reports. For easy reference, the questionnaire used in the preparation of the thematic report on transfer of technology and technology cooperation is annexed hereto.

II. LIMITATIONS FOR ANALYSIS OF INFORMATION CONTAINED IN THEMATIC REPORTS

5. The small number of thematic reports received means that it is very difficult to draw general conclusions about the status and trends of technology transfer and cooperation, as well as relevant actions taken at the national, regional and global levels. In addition, the inadequacy of information contained in the limited number of thematic reports makes the analysis as recommended by the Inter-Sessional Meeting much more difficult. Therefore, it would seem more appropriate to present a synthesis of these reports received so far, giving due consideration to the recommendations of the Inter-Sessional Meeting. The synthesis is presented on a country-by-country basis only, as the information received does not make it possible to develop regional or global perspectives.

III. SYNTHESIS AND ANALYSIS OF INFORMATION PERTAINING TO THE RECOMMENDATIONS OF INTER-SESSIONAL MEETING ON MULTI-YEAR PROGRAMME OF WORK

Transfer of technologies in the public domain that are of importance to the thematic and cross-cutting programmes

6. First of all, it should be pointed out that the questionnaire used in the preparation of the thematic report contained a limited number of questions designed to solicit information concerning how Parties have implemented the thematic programmes of work and a few cross-cutting issues under the Convention through transfer of technology and technology cooperation. The synthesis presented below covers only a few thematic areas and cross-cutting issues considering the limited information provided by some countries in response to relevant questions.

Achievement of outcomes identified by the programmes of work through transfer of technology and technology cooperation

7. In response to Question 4 of the questionnaire, nearly a half of the reporting countries (10) indicated that they had not achieved the outcomes identified by the programmes of work adopted under the Convention through transfer of technology and technology cooperation. Ten countries reported that they had undertaken only a few activities in transfer of technology and technology cooperation in implementing some programmes of work under the Convention. Only one country indicated that it had undertaken a wide range of activities in this field to implement most programmes of work under the Convention. Two countries did not respond to this question.

8. **Austria** reported that it had developed an inventory of biodiversity of soil organisms in natural and protected forests (strict forest reserves) and a genetic inventory of some tree species through technology cooperation. **China** indicated that it had been undertaking some bilateral and multilateral cooperation in the implementation of some programmes of work, particularly in the wetland biodiversity conservation and sustainable use, the protection of endangered animals and plants, the conservation and sustainable use of forest resources and the management of nature reserves. China has also been cooperating with some international non-governmental organizations such as IUCN, WWF, the International Crane Foundation on some research and reintroduction projects, such as giant panda research, reintroduction of Chinese alligators and protection of cranes. China has been working with Australia, Canada, Germany, Japan, Russia, Sweden and the United States of America on some bilateral cooperation projects in the field of forest fires control, biological forest insect and disease control, afforestation to restore degraded land and improvement of nature reserve management techniques and technologies.

9. **Finland** provided financial and technical support to a number of countries and organizations in implementing various programmes of work under the Convention. To implement the programme of work on marine and coastal biodiversity, Finland supported the development and management of relevant databases in Eastern Africa and Namibia, and marine parks management in Madagascar. In implementing the programme of work on agricultural biodiversity, Finland provided support to the Democratic People's Republic of Korea through the Food and Agriculture Organization of the United Nations (FAO) to promote crop diversification and supported projects in China on sustainable food production and soil protection. In implementing the programme of work on forest biodiversity, Finland supported the development of national strategies for biodiversity in the Amazon region. Furthermore, Finland supported Brazil's efforts in forest conservation and sustainable development and establishing forest corridors to restore the Golden Lion Tamarin habitat. Finland also supported Ecuador's project on conservation of biodiversity in the mountain cloud forest area in the Alto Choco Biological Reserve. In addition, Finland provided support for conservation of endangered species of fishes and forests of Lake Malawi and restoration of biological corridors in the Terai Arc landscape of Nepal.

10. **Japan** indicated that it had been undertaking cooperation with a number of countries in a wide range of activities to implement some programmes of work and cited a few examples of such cooperation. Japan has been providing funds and technical support through Japanese International Cooperation Agency specifically to implement biodiversity conservation capacity building projects in Indonesia, conserve endangered species and ecosystems in Malaysia, establish seed banks in Myanmar, implement coastal resources and environmental conservation project in Mauritius and establish a center for plant genetic resources in Sri Lanka.

11. **Norway** reported that it had been cooperating with other Nordic countries in conserving and documenting plant and farm animal genetic resources by establishing the Nordic Gene Bank, which has been involved in technology transfer through development aid projects in the South African Economic Development Community region (SADEC) and projects with the Baltic Sea States. Norway has been also working with the North Sea States in technology cooperation in the sustainable harvesting of marine

resources. For years, the Norwegian Agency for Development Cooperation (NORAD) has been running a programme on sustainable harvesting of marine resources in some African countries, including the transfer of technologies for monitoring and prediction of fish stocks.

12. **Poland** reported that cooperation had been carried out in implementing the programme of work on forest biodiversity within the framework of the European Ministerial Conference on Forest Protection and the Helsinki Process. Poland has been undertaking cooperation in implementing the programme of work on inland water biodiversity and the ecosystem approach through the International Hydrological Programme and UNESCO MAB. Poland also carried out cooperation to implement the programme of work on agricultural biodiversity within the framework of the agro-environmental programmes of the European Union, and implement the programme of work on marine and coastal biodiversity through collaboration with the Baltic Sea States.

13. **Colombia** indicated that it was working with GEF, FAO and the World Bank on a project on environmental services for cattle raising in the north of Valle de Cauca and a LEAD project on integrated silvopastoral approaches to ecosystem management. **Tajikistan** indicated that technology cooperation had been undertaken in the implementation of its national biodiversity strategy and action plan and some components of biodiversity monitoring in some programmes of work.

14. **The European Community** reported that some Community initiatives that were intended to implement thematic programmes did make use of technology transfer. One example of technology cooperation and transfer is in the context of the fisheries agreements with third countries. The Community has developed the satellite vessel monitoring (VMS) system to promote responsible and sustainable fishing through tracking the movements of fishing vessels. It has financed the installation of such systems in Madagascar, the Seychelles and Angola.

Technology cooperation with Parties that lack expertise and resources to assess risks and minimize negative impacts of introducing alien species

15. Fifteen countries indicated that they had not undertaken any technology cooperation with those Parties that lack expertise and resources to assess the risks and minimize the negative impacts of introducing alien species. Eight countries reported that they had undertaken the cooperation of one form or another with other Parties.

16. **Austria** reported that it was supporting through the Austrian Development Cooperation initiatives aimed at minimizing the risks and negative impacts of alien species. One example concerns cooperative support to the International Center of Integrated Mountain Development (ICIMOD) in Nepal to promote beekeeping of local bee species in the Himalayan region in order to reduce negative impacts on traditional land use systems caused by the increasing introduction of alien bee species. **Australia** reported that its overseas aid had helped reduce, and in some cases remove, the threat of pest and virus invasion. One of the cooperative activities worth noting is that Australia is supporting a five-year project with the National Agricultural Quarantine and Inspection Authority of Papua New Guinea.

17. **Colombia** indicated that it was working with Cuba on a project on mariculture. **Mexico** reported that the National Commission for the Use and Knowledge of Biodiversity (CONABIO) had generated databases on exotic species of flora and fauna and calculated potential niches of these species and those that are potentially invasive. **Norway** reported that it was working with South Africa on a programme on alien species, and with Russia on handling the introduced salmon parasite *Gyrodactylus salaris* based on the Norwegian experience and technologies to fight the parasite. **Poland** reported that it was involved in ongoing work to establish the Nordic/Baltic Invasive Network databases on alien species (NOBANIS), which aims to facilitate information exchange and regional cooperation in common efforts to address the issue of alien species. **Switzerland** indicated that a study was being carried out to identify the status of non-indigenous species in Switzerland and those species likely to invade the country in future as well as

their actual and potential impacts. Meanwhile, Switzerland is establishing closer contacts with and exchanging information with national and international specialists on various taxonomic groups to collect and collate the data needed on alien species.

Measures to facilitate transfer of technology to and technology cooperation with other Parties to develop and/or strengthen their capacity to implement policy, programme and practice for sustainable use of biodiversity

18. Over a half of reporting countries (13) indicated that they had taken some measures to facilitate transfer of technology to and technology cooperation with other Parties to develop and/or strengthen their capacity to implement policies, programmes and practices for sustainable use of biodiversity. The rest of reporting countries had not taken any measures for this purpose.

19. Only a few countries provided some detailed information on the measures they had taken. **Austria** cited its research cooperation with CGIAR on sweet potato germplasm diversity assessment under the terms of Austrian Development Research Funds. **China** reported that while seeking cooperation with Japan, Korea, Mongolia and Russia in addressing transboundary environmental problems, it also provided technical support to some African countries in eco-farming and sustainable use of forest resources. **Finland** has been working with the Russian Federation since 1997 in implementing the Finnish-Russian Northwest Russia Development Programme on sustainable forestry and biodiversity conservation (NWRDP), which aims to promote balanced development in the forest sector, sustainable forestry and biodiversity conservation on both sides of the Finnish-Russian border, including the establishment of a network of cross-border nature reserves known as the Green Belt of Fennoscandia. **Mexico** reported that the transfer of technologies through its National Commission for the Understanding and Use of Biodiversity (CONABIO) was a part of its collaboration with Central American countries to monitor hot spots for detecting forest fires.

20. **Germany** provided very detailed information concerning its cooperation with other countries in the conservation and sustainable use of biodiversity and its involvement in various regional and international programmes in this field. Since 1985, Germany has supported nearly 360 projects worldwide, which contribute to the conservation and sustainable use of biodiversity as well as benefit sharing. All the projects cited include the transfer of technologies and know-how relevant to the sustainable use of biodiversity and its components, and the strengthening of key institutions in the partner countries. In recent years, more priorities were given to biodiversity issues in the German Development Cooperation. Since 1990, nature conservation and sustainable use of biodiversity has become an integral part of German technical and financial development cooperation. 20 to 25 new biodiversity projects were funded and implemented annually in the developing countries in the mid and late 1990's.

21. Specifically, **Germany** listed a number of projects included in the above technical cooperation programmes implemented in the past decade. One of them was the project called "Implementing the Biodiversity Convention", which was implemented not only to support the global processes under the Convention like the development of the Bonn Guidelines but also to support the national-level implementation of the Convention, such as supporting the establishment of national clearing-house mechanisms, capacity-building for access to genetic resources and benefit-sharing, the implementation of the Biosafety Protocol at the national level. A few examples were also given of technology transfer included in the technical cooperation projects. These included "Introduction of Agroforestry Systems in Brazil" (2001-2003), "Local Production of Biological Insecticides in Bolivia" (1991-1999), "Strengthening Community Based Organic Marketing Initiatives in India" (2000-2002) and "Indigenous Vegetables as an Alternative Strategy for Household Food Security in Zimbabwe" (1998-1999). In addition, Germany has recently funded a research and development project on the sustainable use of African blackwood, which included the elaboration of practices of sustainable forestry and the organization of capacity building workshops for the forest management in Mozambique and Tanzania. One of the German initiatives aiming to contribute to biodiversity conservation and sustainable is the

German Appropriate Technology Exchange (GATE), which is designed to improve technological competence of NGOs and other groups involved in self-help-oriented poverty alleviation and develop information management systems for NGOs and self-help groups. For 20 years GATE has been supporting the transfer of technological knowledge and the dissemination of innovative technologies, which aim to strengthen the capacity of marginalized groups to use resources efficiently and in a sustainable manner.

22. **Norway** reported that it had been undertaking many cooperative activities with its neighbouring countries in the management of marine resources. Such cooperation involved technology cooperation and transfer of technology, particularly monitoring technologies. Examples of this are found in the cooperation with some of the EU member States and Iceland in the North Sea and with the Russian Federation in the Barents Sea. Norway has also been working with many developing countries and countries with economies in transition to strengthen their capacities to protect the environment, including biodiversity conservation and sustainable use.

23. **Spain** reported that it had played a very active role in developing measures to facilitate technology transfer and cooperation with other Parties to the Convention, particularly in Latin America. Many initiatives have been promoted by the Ministry of Environment, the Ministry of Science and Development, the Ministry of External Affairs and the Latin American Programme for Scientific and Technological Development in which Spain is also involved. The Center for Industrial Technological Development, which is managed by the Ministry of Science and Technology, promotes, among others, the international transfer of technologies and services in the environment and natural resources sectors.

24. **The European Community** cited a few joint research initiatives and activities related to the issues covered by the Convention, which included capacity building and technology transfer to some developing countries. Four main projects that included training components are the tropical forest monitoring (TREES II), land-cover mapping, vegetation fire detection and protected areas management.

Examples or illustrations of benefit-sharing contractual agreements that have included technology cooperation and technology transfer as benefits to be shared

25. Only nine countries provided examples of benefit-sharing contractual agreements which have included technology transfer and technology cooperation as benefits to be shared.

26. The majority of reporting countries did not provide any examples in this regard, with some citing the reason that they were not in a position to disclose such agreements because most of them were concluded by private companies. Only a few countries provided some examples of such agreements. **Austria** cited the Memorandum of Understanding between the International Potato Center (CIP-CGIAR) and Seibersdorf Research Institute concerning sweet potato genomics. **Germany** reported that German research institutions and more than 20 private plant breeding companies and an NGO had agreed to establish a programme for evaluating plant genetic resources of cereals (EVA II), which aims at a public-private partnership to share in-kind benefits arising from evaluation of cereal genetic resources. German botanic gardens have undertaken a series of formal and informal cooperation with other botanic garden networks, including full access to relevant data and information technology used by German botanic garden networks. Within the funding programme Biodiversity and Global Change (BIOLOG), all the BIOTA projects are based on bilateral cooperation contracts between German and African institutions which include specific provisions concerning technology transfer and sharing of project results. An example provided by **Mexico** was the bioprospecting contract between UNAM and the American Diversa Corporation where the technology-transfer provisions have helped establish a national research institution. **Switzerland** provided two examples among others concerning its collaboration with Costa Rica and India respectively on a bioprofiling project and in various areas of biotechnology, including transfer of know-how and fostering transfer of technologies.

Measures taken to ensure that Contracting Parties providing genetic resources are provided access to and transfer of technology which makes use of those genetic resources

27. Only nine reporting countries replied that they had taken some measures to ensure that those Parties providing genetic resources are provided access to and transfer of technology which make use of those genetic resources.

28. **Austria** cited again its “sweet potato” memorandum of understanding with CGIAR which provided unrestricted use of all results for the CGIAR system and partners in developing countries. **China** reported that it had promulgated the “*Regulation Concerning the Protection of New Plant Varieties*” in 1997, which provided that groups and individuals providing genetic resources could have access to and share benefits arising from the use of plant genetic resources. China was of the view that benefits arising from the use of germplasm resources should be shared with those countries that provide such resources, including provision of training opportunities, technology cooperation and transfer and exchange of information. **Colombia** reported that it had developed specific guidelines for access and benefit-sharing and established the Tropical Agriculture Research Center to develop new technologies and promote transfer of technologies. **Finland** provided a list of projects it had supported in this field, including supporting the establishment of SADEC Center for Plant Genetic Resources in Lusaka, supporting FAO Animal Gene Project, supporting Genetic Resources Action International (GRAIN) to facilitate research and information collection at the grassroots level, supporting the sweet-potato production in East Africa through control of virus diseases.

29. **Germany** reported that it had launched an awareness-raising campaign for the public and relevant stakeholders on the Convention and other relevant international agreements pertaining to this issue, such as the International Treaty for Plant Genetic Resources for Food and Agriculture. **Sri Lanka** reported that it had drafted an agreement for transfer of genetic resources to overseas research collaborators, which provided a legal basis for access to genetic resources and the equitable sharing of benefits arising from such access through collaborative research and development activities. Sri Lanka also indicated that its policy for ABS was under preparation. **Switzerland** indicated that its national programme in this regard was under development. **The European Community** said that its Directive 98/44/EC would contribute to the implementation of the Convention (Article 16.3) by encouraging patent applicants to disclose the geographical origin of biological materials they use.

Initiatives taken by taxonomic institutions in developing national priorities in new technology

30. The replies to this question vary among the reporting countries. Eight countries replied that they were in the early stages of development of such initiatives. Four countries replied that they were in the advanced stages. Seven countries reported that some initiatives had been put in place and as a result, some priorities had been identified. Only one country has identified comprehensive priorities with respect to new technology. Four countries replied that they had not taken any initiatives in this regard.

31. Only three countries provided some detailed information concerning the initiatives taken by their taxonomic institutions in developing national priorities in new technology. **Austria** reported that its Federal Office and Research Center for Forests had established a programme for developing molecular technologies to assess the intraspecific variation of forest trees and the interspecific variation in soil organisms. **Germany** said that it was contributing to further development of internet software and databases of the Global Biodiversity Information Facility and promoting innovative technologies for taxonomy. Germany has also developed an internet-based taxonomic reference list that includes references of wild and cultivated taxa. Poland has established a number of initiatives to identify national priorities for new technologies, including assessment of the usefulness of new technologies in animal production and protection of animal genetic resources, identification of priorities for protection of endangered species in *ex situ* conditions, development of guidelines for integrated management of watershed-phytotechnology and ecohydrology.

Involvement in technology development and/or transfer for maintenance and utilization of ex-situ collections

32. The majority of reporting countries (17) indicated that they had been involved in the development and transfer of technology for maintenance and utilization of ex situ collections. Only a few countries provided detailed information in this regard. **Austria** reported that in conserving genetic resources of forest, *ex situ* measures, such as clonal archival, conservation of tree stands and long-term storage of germplasm for a few species, were employed when *in situ* measures were restricted for instance by restricted effective population sizes. Australia replied that its Biological Resources Study contributed to and involved international forums and projects including the Global Taxonomy Initiative and the Global Biodiversity Information Facility. **Colombia** indicated that some of its research institutions were involved in the development and transfer of technology for *ex situ* collections. **Finland** reported it had been collaborating with some Peruvian institutions in the *ex situ* collection of rain forest fruits and medicinal trees, including through supporting the establishment of a database. **Liberia** reported that it had been collaborating with the Netherlands and the Fauna and Flora International in the collection of plant species, including training of some Liberian researchers working in this field. **Japan** reported that techniques transferred include those for conservation, management, taxonomy, evaluation and data processing on genetic resources, including through providing training courses to groups and individuals and technical support programmes of JICA. **Norway** indicated that the development of the Nordic Gene Bank involved technology transfer through projects in the SADEC region and the Baltic Sea States, helping to build up regional gene banks in these two regions.

33. **Germany** provided detailed information concerning programmes and projects it was supporting. Several projects supported by German Development Cooperation provided technological support to those institutions holding ex-situ collections, such as the Kenyan Genebank, the CATIE Genebank in Costa Rica. The genebanks of some German leading research institutions like IPA and BAZ have been involved in international cooperation related to maintenance and utilization of *ex situ* collections of various crops, including repatriation of *ex situ* collections to those countries that had lost part of their germplasms. The German government has supported a number of projects on the subject of “Botanic Gardens and the Implementation of the Convention”, within which a code of conduct and material transfer agreements had been developed, obliging those botanic gardens involved to transfer scientific knowledge and technology to the host countries where collection activities were undertaken. In addition, German botanic gardens have developed a federal information system for genetic resources where the public can easily access all major collections within Germany, both *in situ* and *ex situ*. The system has been linked with the FAO Global Information System on Plant Genetic Resources and will also be linked with GBIF to allow wider access to information concerning German *ex situ* collections.

34. **Poland** has developed a gene bank for some species, particularly endangered species. Poland has also developed a database on herbarium collections and other botanical collections in the country, with some information provided free to other countries. Poland has established a Forest Gene Bank which accommodates study visits from many European countries. **Switzerland** indicated that a number of national institutions were involved in the development and transfer of technologies for the maintenance and utilisation of *ex-situ* collections. For example, the Institute of Systematic Botany of Zurich University is developing basic principles for a database of digital images and labelling information of specimens in the Swiss herbaria and museums, which are intended to make relevant information available globally through GBIF. The Swiss Agency for Development and Cooperation supported various initiatives in this regard in several countries.

Transfer of technologies arising from the use of knowledge, innovations and practices of indigenous and local communities

35. Since the questionnaire used for the preparation of thematic report did not touch the transfer of technologies arising from the use of knowledge, innovations and practices of indigenous and local

communities, so it is difficult to provide here a synthesis of relevant information. However, a few countries mentioned their work on and cooperation with other countries in the areas related to indigenous and local communities when they responded to some questions in the questionnaire. **Germany** mentioned that one of the projects supported by the German Development Cooperation (“Managing Agrobiodiversity in Rural Areas”) focused on developing methods for documentation of traditional knowledge related to farm animal genetic resources. **Liberia** reported that though there are existing indigenous technologies that are not inventoried and developed, they are contained within traditional beliefs and practices. **Spain** indicated that the Cordonba Botanical Garden was coordinating a project on ethnoflora that will ultimately constitute the first catalogue on traditional knowledge associated with Iberian flora. **Switzerland** reported that the Swiss Agency for Development and Cooperation supported a project in the Laos People’s Democratic Republic which is designed to capture, record and analyze the indigenous knowledge of rice biodiversity held by Lao farmers, through use of participatory and etho-botanical methods. By disseminating the indigenous knowledge collected and documented, the project aims to improve the livelihoods of Lao farmers and the sustainability of their rice-based farming system. Switzerland also indicated that use and dissemination of indigenous knowledge was a part of its collaboration with the South African Development Community (SADC) countries on development of maize germplasm to increase maize yields under conditions typical for resource-poor farmers.

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

Assessment of needs for relevant technologies

36. Ten countries reported that they had carried out an assessment of the needs for relevant technologies while twelve countries indicated that they had not made such an assessment. One country did not respond to this question. It should be noted that the needs identified cover only some sectors relating to the conservation and sustainable use of biodiversity. Very few countries provided clear indications of specific needs that have been met and those that are yet to be met.

37. A few countries provided some detailed information concerning their needs for relevant technologies. **Austria** indicated that needs had been identified for funding of diversity assessment and research in forest trees, supporting assessment and research on sweet potato germplasm diversity and assessment of impacts of GMO oilseed rape on natural *Brassica sp.* **China** recognized the necessity to further develop the technologies for sustainable use of biological resources, including reproduction and farming technologies for wild economic plants and biotechnologies for development and use of genetic resources. **Germany** reported that assessments had been undertaken in some sectors, with one example provided on the assessment of potential needs for on-farm conservation and management of plant genetic resources for food and agriculture.

38. **Poland** reported that it has identified some priorities and needs in this regard while preparing its input to the FAO’s *First Report on the State of Animal Genetic Resources*. The priorities Poland has identified include the development and use of biotechnology methods, such as cryo-conservation of germ cells, spores and cellular lines, and technologies to support reproduction and cloning for preserving animal biodiversity and protecting endangered animal species. Poland has also recognized the need to develop technology based on deep tissue freezing in liquid nitrogen for banking seeds of endangered plants. **Switzerland** indicated that it had been contributing to the assessments of needs for relevant technologies of some developing countries and countries with economies in transition through development cooperation. For instance, through sustainable technology cooperation, the Swiss Federal Laboratories for Materials Testing and Research has been providing information services, knowledge transfer and technical consultancy to developing countries and countries with economies in transition. A few countries indicated that though specific assessments had not been made, some mechanisms or industrial initiatives had been established in their countries to assess the needs for relevant technologies in some sectors.

Establishment of adequate institutional structures and human capacity to access relevant technologies

39. Fifteen reporting countries indicated that they had established proper institutional and human capacities to access relevant technologies while eight countries reported that they had not. Very little additional information was provided in the responses to this question. Only a few countries indicated that limited funds and lack of adequate technical resources were identified as factors to impeding national efforts to access relevant technologies.

40. **Canada** reported that Environment Canada's Environment Technology Advancement Directorate and Federal Partners in Technology Transfer (FPTT) played an important role in developing and promoting transfer of environmental technologies in Canada and around the world. **Switzerland** indicated that its five federal departments, agencies or offices were the main actors in Switzerland to promote the technology cooperation and transfer of technologies, including the Swiss Agency for Development and Cooperation, the State Secretariat for Economic Affairs, the Swiss Agency for Environment, Forests and Landscape, the Swiss Federal Institute of Intellectual Property and the Swiss Federal Office for Professional Education and Technology. In addition, some other Swiss institutions are also involved in access to relevant technologies, such as CTI (the Swiss Innovation Promotion Agency).

Limiting factors in implementing relevant technologies

41. Six countries pointed out that lack of institutional capacity was a limiting factor while nine countries cited limitations in human capacity. Nine countries mentioned some other limiting factors. Three countries did not respond to this question. In response to this question, some countries selected two or three options provided since they are faced with a few limiting factors.

42. A considerable number of reporting countries, including some developed countries, indicated that limited financial resources were the factors in implementing and access to relevant technologies. A few countries pointed to the lack of trained human resources, inadequate institutional capacity and inadequate infrastructure as main factors impeding implementation and access to relevant technologies. In addition, a few countries mentioned some other factors, for example, **China** mentioned the lack of an effective mechanism of technology transfer at various levels. **The Islamic Republic of Iran** indicated that some political pressure such as sanctions made it difficult to access relevant information and technologies. While recognizing the differences in the situation of developed and developing countries and countries with economies in transition, **Switzerland** indicated that too strong intellectual property rights protection was a limiting factor common to all countries in accessing relevant technologies.

Access to information and training or lack thereof as a limiting factor in access to and transfer of technology

43. The majority of reporting countries (18) considered that access to information and training or lack thereof had been a limiting factor in access to and transfer of technologies. Five other countries did not hold this view. No additional information was provided in the responses to this question.

Identification of relevant technologies in specific areas for the conservation and sustainable use of biodiversity

44. The majority of reporting countries (18) replied that they had identified relevant technologies in some areas for the conservation and sustainable use of biodiversity. Four countries indicated that they had not done this yet. One country did not respond to this question.

45. Only a few reporting countries provided some detailed information in this regard. **China** has identified technologies for monitoring, mapping and inventorying biodiversity, relevant information system, protection of wetland resources, preservation and reproduction of crop germplasm resources and cryoprotection. **Finland** has identified relevant technologies while identifying priorities for conservation,

management and sustainable use of biodiversity in its national biodiversity strategies and action plans (NBSAPs). These technologies include, e.g. technologies and know-how for identification, characterization, monitoring and management of species and ecosystems, technologies appropriate for *in situ* and *ex situ* conservation and sustainable use of biodiversity and its components. **Germany** indicated that a wide range of relevant technologies had been developed and identified, but no specific information was provided because of the diversity of relevant technologies. **Liberia** has identified and introduced GIS as an important technology for conservation and sustainable use of biodiversity.

46. **Norway** has developed and identified a number of technologies for conservation and sustainable use of biodiversity, most of which relate to the monitoring and mapping of biodiversity, including GIS and remote sensing technologies. The other technologies Norway has developed in this field include those for reducing alien species, liming technologies for treating freshwater ecosystems affected by acid rain, technologies for more targeted and sustainable fish harvesting. **Poland** also provided a detailed list of technologies identified, including cryo-conservation technology for isolated biological material, technologies for storage of plant gene resources by *in vitro* method, synthetic pheromones and karyomones of harmful forest insects. **Sri Lanka** indicated that gaps had been identified for technologies in specific areas, but no detailed information was provided concerning the gaps identified. **Switzerland** reported that several federal institutions, research stations and universities had identified relevant technologies for the conservation and sustainable use of biodiversity.

Development of national policy and establishment of international and national institutions to promote technology cooperation, including through development and strengthening of technical, human and institutional capabilities

47. The majority of reporting countries (18) replied that they had developed national policies and established relevant institutions to promote technology cooperation. Four countries indicated that these were yet to be developed or established. One country did not respond to this question.

48. **Austria** said that it was promoting technology cooperation within the framework of the Ministerial Conference on the Protection of Forests in Europe and through active participation in the European Cooperative Programme for Plant Genetic Resources. **China** reported on the establishment of a number of institutions working to promote international technology cooperation, including collaboration with some international NGOs like IUCN and WWF and bilateral cooperation with some countries. **Finland** indicated that the objectives of the Convention had been integrated into its development cooperation projects. In addition to the traditional conservation projects (e.g. establishing protected areas), new projects have been developed on some other areas related to the achievement of the objectives of the Convention, such as environmental education, creation of alternative livelihood for the conservation and sustainable use of biodiversity and community-based conservation projects. **The Islamic Republic of Iran** reported that some cooperation was undertaken in this field through the Islamic Conference Organization. **Liberia** indicated that its national policy on the environment included the measures to promote technology cooperation. **Norway** replied that its political priorities for technology cooperation had been established through different reports to the Norwegian Parliament in which technology transfer and capacity building were emphasized. **Sri Lanka** indicated that its policy for science and technology, including technology cooperation, had been developed, and its national policy for access to genetic resources and benefit sharing was under development.

49. **Germany** provided detailed information in this regard, stating that the German Development Cooperation Agency (GTZ) has supported projects within the framework of “financial cooperation”, “technical cooperation” and “human resources cooperation”, with different institutions responsible for their implementation. The GTZ, a government-owned corporation for international cooperation, takes care of most projects in the field of biodiversity. Cooperation in human resources involves the training of experts and decision makers from developing countries. In addition to that, a few German governmental and non-governmental organizations, such as German Development Service, Center for International

Migration and Development and Capacity Building International, also undertake human resources cooperation.

50. **Poland** reported that it had developed a number of Acts regulating selected aspects of technology exchange. One of these acts, named “*Act on Compliance Assessment System*”, was designed to remove technological barriers on trade and to facilitate international trade in technological products. Poland indicated that one of the responsibilities of its Ministry of Science and Information Technology was to support international technology cooperation.

51. **Switzerland** indicated that in addition to the five federal institutions mainly involved in the technology transfer and cooperation, there were several other national institutions and international programmes involved in the development and transfer of technologies. One of them is the Swiss Innovation Promotion Agency, which focuses on commercialising relevant research results and supports joint research and development projects. In the next three years (2004-2007), the Swiss Innovation Promotion Agency will focus on international cooperation in technology development and transfer. The other is Unitecra, a non-profit company under the universities of Berne and Zurich, whose mission is to promote technology transfer through providing support and services to the scientific community in their cooperation with the private and public sectors. One example of bilateral cooperation in this regard is that Switzerland and Bulgaria are implementing the Forestry Programme which aims at sustainable forest management in Bulgaria through transfer of the Swiss expertise in this field, providing training and information exchange.

Establishment of joint research programmes and joint ventures for development of technologies relevant to the objectives of the Convention

52. Fourteen countries reported that they had established some joint research programmes and/or joint ventures for development of technologies relevant to the objectives of the Convention. Nine others replied that they had not.

53. A number of reporting countries, mostly developed countries, indicated that they had established some joint research programmes for development of technologies relevant to the objectives of the Convention. **Austria** reported that it actively participated in several networks of the European Forest Genetic Resources Programme (EUFORGEN) and a joint research programme “biodiversity of soil organism in forests”. One example cited by **Australia** in this regard is the participation of the Coral Reefs Cooperative Research Center in the Voluntary Reefs Initiative. **The European Community** reported on some joint research programmes, including TREES II (tropical forest monitoring), land-cover mapping and vegetation fire detection. **Japan** reported that it was implementing an international collaborative research project for developing a guideline for sustainable forest management. **Norway** reported that it had collaborated with the Nordic countries to develop the Nordic Gene Bank, worked with Russia in the monitoring and joint management of marine resources in the Barents Sea and developed fish capture technologies in cooperation with the North Sea States. **Poland** reported on its involvement in information exchange and technology development for genetic resources within the framework of the 5th Framework Programme of the European Union. Poland also indicated that joint research programmes had been established on the development of new technologies for the protection of endangered crop species, and collaboration was undertaken with the Baltic countries in protecting forest against fire hazards.

54. **Germany** provided some detailed information on the joint research programmes and joint ventures for development of technologies relevant to the objectives of the Convention. Germany supports a number of bilateral scientific and technical cooperation projects, some of which are relevant to the objectives of the Convention. One example is the cooperative research between Germany and Brazil on human impacts on forest and floodplains in the tropics. The BIOLOG (Biodiversity and Global Change) is an important programme developed by Germany in response to the Convention on Biological Diversity and the international biodiversity research framework, DIVERSITAS. Its overall goal is to provide a

scientific basis for the development of strategies and tools for sustainable management of ecosystems, with research activities focusing on functional roles of biodiversity within ecosystems, dynamics of biodiversity and its changes, and concepts of sustainable use of biological resources. The projects in the framework of BIOLOG include elements of technology transfer and capacity building for the countries involved. A new initiative funded by Germany is the BIOTEAM, whose objective is to support researches on concepts and practices of conservation and sustainable use of biodiversity. These research activities aim to help local communities to develop sustainable management strategies and implement the provisions of the Convention. The BIOTEAM has a special focus on cooperation with developing countries, including strong elements of technology transfer and know-how with active participation of stakeholders and scientists of the countries involved in this initiative.

55. **Switzerland** indicated that it was involved in several research programmes and initiatives. One of them is COST, which is being evolved into one of the largest framework for research cooperation in Europe and a valuable mechanism coordinating national research activities in Europe. The areas covered by COST include agriculture, biotechnology, environment, forests and forest products, among others. The other is EUREKA, which is a pan-European network for market-oriented, industrial research and development. EUREKA supports the competitiveness of European companies through international collaboration, by commercializing high-quality research and development results and creating networks of innovation. In addition, Switzerland will work with the EU within the 6th Framework Programme to advancing technological progress in various fields, including environment, biotechnology, food security and sustainable development.

Constraints to transfer of technology and technology cooperation

56. Only four countries mentioned constraints to technology transfer and technology cooperation. **Colombia** cited limitations of administrative procedures and lack of financial resources. **Mexico** indicated that limitations included shortage of educational institutions, highly-qualified managers, experts, researchers and equipment. **Poland** considered the lack of financial resources as the main limiting factor. **Spain** stressed the importance of capacity building to achieve technology transfer and cooperation.

Transfer of technologies of relevance under relevant provisions of the Convention and the impact of intellectual property rights on thereon

Access to technologies in the public domain or covered by intellectual property rights

57. Fourteen reporting countries indicated that they could access the technologies both in the public domain and covered by intellectual property rights. Five countries replied that they could access the technologies in the public domain only and two others indicated that they could access those covered by intellectual property rights only. Two countries did not respond to this question. No further information was provided by the responding countries to this question.

Intellectual property rights as a limiting factor in acquiring technologies for the conservation and sustainable use of biodiversity?

58. Seventeen countries did not consider intellectual property rights as a limiting factor in acquiring technologies for the conservation and sustainable use of biodiversity. However, five countries held the opposite view. One country did not respond to this question.

59. **Canada** reported that its patent regime sought to balance the need for effective patent protection to encourage research and development 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. However, a few countries were of the view that intellectual property rights were still a limiting factor for their access to technologies for conservation and sustainable use of biodiversity. **Austria** indicated that it had become increasingly difficult to acquire information and/or genetic material for sustainable use and development of crop diversity in developed countries. **China** reported that patents, corporate benefits of technology owners and high costs of technology transfer were the obstacles to transfer of technology. **Colombia** recognized that intellectual property rights were a limiting factor in acquiring some technologies. **Ireland** indicated that IPR might not be a limiting factor if private companies were involved. **Sri Lanka** reported that the problem lay in the fact that its domestic intellectual property rights regulations did not recognize the innovations relating to biodiversity, such as Farmers' Rights and breeders' rights, and there were no provisions for protecting traditional technologies and those in the public domain.

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 relevance under the provisions of the Convention, and on South-South cooperation

Technology partnerships between public research and development institutions from developing countries and private-sector firms from industrialized countries

60. The reporting countries cited different examples of such technology partnerships. Seven countries cited the training of developing country scientists in the application of new technologies for the conservation and utilization of genetic resources. Five countries reported that such partnerships involved information exchange on new scientific and technological advances. Two countries replied that the partnerships involved the provision of various technology components to developing country partner institutions. Four countries cited the examples of the joint research and development programmes undertaken by the public research and development institutions of developing countries and the private-sector firms from industrialized countries. Three countries selected all the above as the examples of such technology partnerships. One country did not respond to this question.

61. Only a few countries provided some examples of such technology partnerships. **Germany** reported that the pharmaceutical company Bayer AG had developed cooperation with public research and development institutions in China, which include training, technology transfer and provision of equipment. Many German companies engage and support research and development institutions in developing countries, including through entrusting them with research projects, which usually include training, exchange programmes and technology and know-how transfer. **Poland** indicated that it had organized for some Central and Eastern European countries a series of conferences, seminars and training courses on technology for long-term storage of seeds and management of database on *ex situ* collections. **Norway** reported that some Norwegian research institutions were involved in the cooperation with a number of developing countries and countries with economies in transition, which are often connected with development aid from Norway. One example of this was the assistance provided by the Norwegian Institute for Water Research to Palestine for sustainable water management, including establishing national water lab service in Palestine. **Switzerland** reported that a number of private and semi-private institutions were actively involved in such technology partnerships with developing countries and countries with economies in transition, including training, information exchange, transfer of technology components and joint research and development programmes. One example of this is the collaborative programme of the Swiss Agency for Development and Cooperation with some Peruvian institutions and organizations for the conservation and sustainable use of biodiversity of Andean roots and tubers.

Measures or programmes to encourage the private sector or the public-private partnership to develop and transfer technologies for the benefit of governments and institutions of developing countries, including South-South cooperation

62. Thirteen reporting countries indicated that they had developed some measures or programmes to encourage the private sector or the public-private partnership to develop and transfer technologies to developing countries, including through South-South cooperation. The rest of reporting countries replied that such measures or programmes were not in place yet.

63. A few countries reported on some measures or programmes in this regard. **Austria** indicated that a new co-financing instrument had been developed for development cooperation for private business partnerships, which allow macro small and medium-sized enterprises from developing countries to cooperate with Austrian companies to implement projects in their home countries. **China** reported that within the framework of China-Africa Cooperation Forum, Chinese private companies were encouraged to provide funds, technical support and training to some African countries in various fields, including biodiversity conservation and sustainable use. China also encourages private companies to establish joint ventures with foreign companies in the development and application of technologies for conservation and sustainable use of natural resources. **Canada** indicated that the Environment Canada's Environmental Technology Advancement Directorate supported the development and application of environmental technologies in Canada and around the world. Canada also has other systems and incentives in place to facilitate cooperation between research institutions and the private sector and developing countries, and supports this type of work through its bilateral aid programme, such as the Canadian International Development Agency RADARSAT programme. **Finland** indicated that some Finnish private companies had been providing technical assistance to some developing countries in the conservation, management and sustainable use of biodiversity, including through implementing some Finnish development cooperation projects.

64. **Germany** reported that since 1999, GTZ had been supporting private companies' long-term activities in developing countries through Public-Private Partnerships. In addition to providing funds, training of local staff and technology transfer are typical elements of the projects under the Public-Private Partnerships, most of which deal with natural resources management and sustainable use of biodiversity. **Japan** responded by providing some details concerning training courses which JICA had delivered to various countries in 2001 in the fields of forestry, agriculture and coastal resources. **Norway** indicated that it had a number of programmes that encourage private sectors, research institutions and non-governmental organizations to undertake technological cooperation with developing countries, though most of them do not directly address biodiversity or environmental issues alone. NORAD funds the development of environmental technologies and also works with the Norwegian Export Council to encourage the private sector to undertake technology cooperation and transfer through the "*Match-making Programme*". **Spain** reported that various programmes existed to facilitate private-sector collaboration with developing countries, including collaboration with public institutions of the developing countries, as exemplified by the work of the Center for Industrial Technological Development.

65. **Switzerland** has a number of programmes to encourage private sector, research institutes and non-governmental organizations to be involved in the development and transfer of technologies for the benefit of developing countries and countries with economies in transition. Switzerland cited two examples already mentioned in response to other relevant questions. One of the projects funded by the Swiss Agency for Development and Cooperation is the Southern African Drought and Low Fertility Project, which is designed to help the members of the Southern African Development Community (SADC) develop maize germplasm with tolerance to drought and low soil fertility and improve maize yields and yield stability under conditions typical for resource-poor farmers. The other is the Indo-Swiss Collaboration in Biotechnology, which focuses on areas of agriculture and environment.

Establishment of incentives to encourage the participation of the private sector in conservation and sustainable use activities as sources of new technologies and potential financiers of conservation programmes

66. Twelve reporting countries replied that they had established some incentives to encourage the participation of the private sector in conservation and sustainable use of biodiversity. However, nine other countries indicated that no such incentives were in place. Two countries did not respond to this question.

67. Only a few countries provided some detailed information in this regard. **Australia** has provided incentives for the private sector to conserve biodiversity in particular establishing protected areas on private land, and biodiversity conservation activities on private land. In **Colombia**, regional communities are given incentives to further implement sustainable use practices through allowing them to get economic benefits from their participation in conservation and sustainable use projects. In addition, municipal tax incentives are provided in some Colombian municipalities for conservation and reforestation. **The Islamic Republic of Iran** reported that cooperation with research institutes was undertaken in the field of biotechnology. **Japan** has been supporting international greening cooperation activities, such as restoration of tropical forests and combating desertification by using the Green Fund which was established to increase public interests in greening. Mexico encourages the private sector involvement through authorizing land use exchange under the programmes for compensatory restoration and conservation of degraded areas. **Poland** reported that a mutual financial assistance system had been established to encourage farmers to protect the environment and promote nature conservation, as a part of Poland's efforts towards compliance with the relevant EC regulations prior to and after its accession into the EU. **Sri Lanka** encourages the involvement of the private sector in biodiversity conservation through land lease and providing incentives on conservation programmes such as tree planting and mangrove protection. The **Swiss** Agency for Environment, Forests and Landscape encourages the participation of the private sector through its programme "Eco Net" and through the European network of experts called "Preventive Environmental Protection Approaches in Europe" ("PREPARE").

68. While indicating that such incentives were provided possibly through Climate Change Action Fund, Sustainable Development Technology Canada, and Environment Canada's Environmental Technology Advancement Directorate, **Canada** provided some additional, detailed information in this regard. In general, Canada 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 countries and least developed countries. One of the initiatives of the Canadian International Development Agency (CIDA) is the CIDA-INC (the Industrial Cooperation), which provides assistance, including through defraying costs, to Canadian firms that wish to build long-term partnerships in order to promote and support sustainable socio-economic development in the Asia-Pacific, Africa, Middle East and the Americas regions. The activities of Canadian firms aim to strengthen the knowledge, practical skills and technical know-how of local populations of developing countries and least developed countries. The International Development Research Center (IDRC) is a Canadian public corporation mandated to initiate, encourage, support and conduct research into problems of developing regions of the world, and the means for applying and adapting scientific, technical and other knowledge to the economic and social advancement of these regions. IDRC's Environment and Natural Resource Management initiative includes several programmes aimed at generating innovations within local communities of developing countries and least developed countries to manage their resources sustainably. In addition, Industry Canada sponsors several programmes for the transfer of technology by Canadian institutions and enterprises to developing countries and least developed countries.

69. **Finland** reported that pilot projects would be implemented to test a set of new instruments to encourage the private sector participation in the conservation and sustainable use of biodiversity. One of

the instruments is the compensation scheme in which a landowner is compensated with an income from the “buyer” of the nature values that he/she maintains or adds in his/her forests. Another instrument is the competitive bidding through which relevant authorities request landowners to offer areas for protection for the purpose of extending networks of protected areas. In Finland, the private landowners can request the governmental bodies to establish privately-owned protected areas, some of which are managed by the private landowners based on voluntary agreements. In some cases, private companies can own protected areas, including purchasing the land, donating it to the State and requesting that a protected area will be established on the land purchased.

Mechanisms and/or measures to encourage and facilitate transfer of technology and technology cooperation

70. Thirteen reporting countries replied that they had established some mechanisms and/or measures to encourage and facilitate the transfer of technology and technology cooperation with other Parties, while ten others said that they had not.

71. Only a few countries provided detailed information concerning the mechanisms established or taken measures to encourage and facilitate transfer of technology and technology cooperation with other Parties. **Austria** indicated that environmental protection, with a special focus on biodiversity conservation and sustainable use of resources, was one of the overall goals of the new Austrian Law for Development Cooperation. In addition, the Austrian development cooperation incorporates environmental aspects in its programmes and projects, thus promoting the transfer of ecologically sound and innovative technologies. **Germany** reported that various information systems and websites had been established to facilitate information exchange concerning technologies for conservation and sustainable use of biodiversity. **Norway** indicated that it had several mechanisms to facilitate transfer of technology and technology cooperation, particularly through environmental cooperation agreements with developing countries and countries with economies in transition. Most of these activities are coordinated by the Norwegian Agency for Development Cooperation and the Norwegian Export Council, including through programmes like NORAD’s Matchmaking Programme. Norway has established a number of funding mechanisms to support use of environmental technologies, such as the Nordic Environment Finance Cooperation (NEFCO), which is an institution to finance environmental projects in CEE countries. Poland indicated that it had entered trade agreements that facilitate technology transfer. **Switzerland** indicated that it had a number of mechanisms to encourage and facilitate technology transfer and cooperation, especially through multilateral environmental agreements and other international and bilateral initiatives. Many activities in this field are mainly coordinated by the Swiss Agency for Development and Cooperation. In addition, other Swiss federal agencies involved in technology transfer and cooperation include the State Secretariat for Economic Affairs, the Swiss Agency for the Environment, Forests and Landscape, the Swiss Federal Institute of Intellectual Property and the Swiss Federal Office for Professional Education and Technology.

Establishment of channels for access to technologies developed and applied for attaining the objectives of the Convention

72. Only nine countries reported that they had established some channels for access to technologies developed and applied for achieving the objectives of the Convention while thirteen other countries replied that they had not established such channels. One country did not respond to this question.

73. **China** indicated that various forms of cooperation had been developed with bilateral agencies, multilateral funding agencies and non-governmental organizations in the development of technologies for conservation and sustainable use of biodiversity. **The European Community** indicated that its communication to the World Trade Organization “Trade and Transfer of Technology” provided a list of channels for technology flow, including programmes like INCO (Research for Development), CDE (Center for the Development of Enterprises), EBAS (EU-ACP Business Assistance Scheme), ASIA-

INVEST. Germany indicated that that information on technologies that are protected by intellectual property rights was freely available in databases. **Mexico** reported that access to technologies was through the Coordination Unit for International Affairs, the National Commission for the Understanding and Use of Biodiversity (CONABIO) and the National Council on Science and Technology.

IV. SYNTHESIS OF INFORMATION OF OTHER ISSUES COVERED IN THE THEMATIC REPORTS

Inventory and assessment

Development of an inventory of existing technologies for conservation and sustainable use of biodiversity

74. Almost a half of the reporting countries (11) have not developed an inventory of existing technologies for the conservation and sustainable use of biodiversity. Five countries replied that such an inventory was under development. Only five countries reported that an inventory of some technologies was already available. No reporting countries have developed a comprehensive inventory. Two countries did not respond to this question.

75. **Austria** reported that different DNA technologies had been employed to develop a genetic inventory of some plant species and an inventory of species diversity of soil organisms in protected forests. **Norway** indicated that inventories were mainly developed while preparing reports on biodiversity for the Norwegian Parliament. Instead of providing specific information concerning the inventories, Norway provided sources where some of the information on technologies used in the field of biodiversity (such as GIS and remote sensing as monitoring technology, and genetic technology) can be found. **Poland** also reported on a few inventories that had been developed in some fields related to conservation and sustainable use of biodiversity, such as a partial inventory for redevelopment of tree stands, an inventory of existing reproduction and crop technologies for protected and endangered species, a database of *ex situ* collections of protected and endangered plants in Polish botanical gardens, and an inventory of game animals.

76. While indicating there is no comprehensive inventory available, **Spain** added that its Office for Patents and Brands had catalogued protection technologies relevant to conservation and sustainable use of biodiversity and the Office for Tech Transfer of the Superior Council of Scientific Research would develop a database on technological services on biodiversity conservation. In addition, the Spanish Centers of the European Network of Linked Centers had developed databases on available technologies, some of which are generally relevant to the environment and biodiversity. The Cordoba Botanical Garden is coordinating a project which is designed to catalogue traditional knowledge associated with Iberian flora and supports the development of an inventory of vegetable diversity. **Switzerland** reported that the Swiss Federal Research Station for Agricultural Economics and Engineering and the Swiss Federal Institute for Forest, Snow and Landscape Research produced reports and publications that provided updated information on latest technologies available in various fields related to nature conservation, forestry and agricultural engineering.

Assessment of potential impacts of relevant technologies on biodiversity and their requirements for successful implementation

77. 12 countries reported that they had not made assessments of the potential impacts of relevant technologies on biodiversity and their requirements for successful application. The others replied that they had made some assessments in this regard.

78. A few countries provided some examples of assessments made of potential impacts of relevant technologies on biodiversity. Countries like **Austria** and **Poland** have undertaken some assessments or studies of impacts of biotechnologies and use of genetically modified organisms on biological diversity.

Poland has also undertaken other assessments related to impacts of certain farming methods on biodiversity, various *ex situ* reproduction technologies for endangered species, potential impacts of biotechnological methods applied in reproduction of farm animals. **Canada** indicated that such assessments were made as part of the various governmental, regulatory, certification and review processes. **Germany** has undertaken some assessments or studies that help identify those technologies having a positive impact on biodiversity and impacts of existing technologies on biodiversity. These studies cover a wide range of technologies, such as methods for identification of species for trade control purposes, methods for *ex situ* conservation of species and genetic diversity, technologies to avoid unintended by-catch of small cetaceans in fisheries, technologies applied in agriculture, technologies for production of renewable energy at sea, technologies for conservation and sustainable use of genetic resources for food and agriculture and technologies related to the genetic modifications of organisms. **Switzerland** reported that the Center for Technology Assessment (TA-SWISS) provided independent information on the benefits, risks and impacts of new technologies and facilitated dialogues between the public and scientific community concerning new technologies. The Swiss Expert Committee for Biosafety, as a permanent federal advisory body, also publishes recommendations on gene biotechnology and biosafety. Switzerland also indicated that the impact of technologies on biodiversity was assessed by some private and federal research institutes such as the Research Institute of Organic Agriculture. One example of such impact assessment is the “DOK” trials (DOK is an acronym derived from German designation *biologisch-dynamisch, organisch-biologisch and konventionell*), a long-term initiative undertaken to prove the benefits of organic farming to the environment. A few countries indicated that even though they had not undertaken assessments in this regard, they had developed relevant regulatory frameworks that required assessments of impacts of those activities and projects, including technologies that may have negative impacts on biodiversity

Implementation of some relevant articles of the Convention, relevant decisions adopted at the previous meetings of the Conference of the Parties and recommendations of SBSTTA

Further development of the clearing-house mechanism to assist in obtaining access to information concerning access to and transfer of technologies

79. Ten countries replied that they had further developed their clearing-house mechanisms to allow easier access to information concerning access to and transfer of technologies. Eleven countries reported that they had not further developed their CHM to allow easier access to information concerning access to and transfer of technologies. Two countries did not respond to this question.

80. Only four respondents provided some additional information. **The European Community** said that the present European Community clearing-house mechanism is a web portal that gives access to selected information and links of relevance to biodiversity. In collaboration with the Research Directorate General of the European Community, the clearing-house mechanism hosts a catalogue under construction, which will contain information on biodiversity research institutions and scientists through which access to technical expertise can be obtained. **Finland** indicated that the future development of its clearing-house mechanism would be oriented towards facilitating access to and transfer of CBD-related technologies, though its current clearing-house mechanism contains only some general information in this regard. **Germany** reported that its clearing-house mechanism (www.biodiv-chm.de) provided general information on technology transfer by creating links with some websites where information on technology transfer could be obtained. Germany has started exploring the possibility of using the clearing-house mechanism to facilitate access to and transfer of technologies relevant to the Convention. A study undertaken in 2003 has recommended that the German clearing-house mechanism can be either a part of its national network for technology transfer or the clearing-house mechanism could develop concrete facilities and functions to provide access to and transfer of technologies, including biotechnologies. **Poland** indicated that it was developing an information system for GMOs and would expand this database to facilitate access to information on the updated technologies and their transfer.

81. **Switzerland** indicated that to some extent, its clearing-house mechanism might assist in obtaining access to information concerning access to and transfer of technologies. The section on the Swiss international commitments on its clearing-house mechanism contains a list of biodiversity cooperation projects, most of which include information on the activities supported by Switzerland on access to and transfer of technologies. Switzerland also added a few examples of knowledge dissemination through a number of collaborative projects with other countries. One example is the support provided by Switzerland to the Lao People's Democratic Republic on the project of conservation, documentation and use of the farmers' knowledge of Lao indigenous rice biodiversity, which aims to contribute to the improvement of the livelihoods of Lao farmers and the sustainability of their rice-based farming systems. Another example is the support provided by Switzerland to the Southern African Development Community (SADC) on development of maize germplasms and increasing its yields under conditions typical for resource-poor farmers.

Success stories of technology transfer and technology cooperation

82. A few countries submitted some success stories in the field of technology transfer and cooperation. **Canada** cited a few examples of its successful technology cooperation with other countries, most of which, however, do not directly address issues of conservation and sustainable use of biodiversity. These examples include technology transfer by Environment Canada's Environment Technology Advancement Directorate to the developing Parties of the Montreal Protocol to phase out ozone-depleting substances, and Environmental Technology Trade Missions undertaken for building capacity at home and abroad for sustainable development by promoting Canadian environmental technologies and know-how in the global marketplace. **Ireland** indicated that some success stories in the European technology transfer were published on the Innovation Relay Center's website at www.irc.cordis.lu. **Japan** reported that some projects had been successfully implemented by JICA and the National Institute of Agrobiological Sciences. **Mexico** reported that its achievements in this regard included optimisation of human and financial resources, expeditious exchange of experiences, prevention of duplication of projects and efforts. **Norway** submitted two successful examples. The first concerns the support of the Nordic countries to the SADC countries over a period of 20 years to establish their gene bank. Another example is the Nansen Programme and the use of the research vessel Dr. Fridtjof Nansen in southern and western Africa, which contributes significantly to sustainable fishery in these waters, including provision of monitoring, analytic and research technologies and techniques. **Poland** was of the view that a number of cooperative activities it was involved in were successful, including the cooperation among the European botanical gardens in the *ex situ* conservation of endangered plants, the establishment of network of seed banks, the cooperation with the Baltic countries in the forest fire prevention. An example provided by **Switzerland** is a project undertaken in the Andean region to conserve forests there (PROBONA Project). The success of the project is demonstrated by the fact that relevant stakeholders and communities contribute technically and financially to the implementation of the project, and as a result, this project has been expanded with more funding from other sources and the approach established by this project is being adopted in the neighbouring regions.

Annex

**QUESTIONNAIRE INCLUDED IN THE FORMAT FOR A THEMATIC REPORT ON
TRANSFER OF TECHNOLOGY AND TECHNOLOGY COOPERATION**

Inventory and assessment

1. Has your country developed an inventory of existing technologies or category of technologies, including from indigenous and local communities, for the conservation and sustainable use of biological diversity and its components, in all the thematic areas and cross-cutting issues addressed by the Convention?	
a) no	
b) an inventory under development	
c) an inventory of some technologies available (please provide some details)	
d) yes, a comprehensive inventory available (please provide details)	
2. Has your country assessed the potential impacts of relevant technologies on biological diversity and their requirements for successful application?	
a) no	
b) yes, please give some examples	
3. Has your country carried out an assessment of the needs for relevant technologies?	
a) no (please specify the reasons)	
b) yes, and please specify the needs met and the needs not met for existing technologies and for new technologies	

Implementation of some relevant articles of the Convention, relevant decisions adopted at the previous meetings of the Conference of the Parties and recommendations of SBSTTA

4. In implementing the thematic programmes of work adopted by previous meetings of COP, has your country achieved the outcomes identified in these programmes of work through technology transfer and technology cooperation? (Decisions II/10, III/11, IV/6, IV/7 and V/4)	
a) no	
b) yes, but only a few activities in some programmes	
c) yes, and a wide range of activities in many programmes of work	
d) if yes, please specify these activities and programmes of work	
5. Has your country undertaken technology cooperation with other Contracting Parties that lack the expertise and resources to assess the risks and minimize the negative impacts of introducing alien species? (Decision V/8)	
a) no	
b) yes – please give details below (including types of technology transferred, actors involved, terms for transfer and means of access to technology)	
6. Has your country taken any steps or measures to facilitate transfer of technology to and technology cooperation with other Parties to develop and/or strengthen their capacity to implement the policy, program and practice for sustainable use of biological diversity? (Decision V/24)	

a) no	
b) yes, please specify detailed measures and steps	
7. Could you provide examples or illustrations of benefit-sharing contractual agreements which have included technology cooperation and technology transfer as benefits to be shared? (Article 15)	
a) no	
b) yes	
8. Has your Government taken measures, as appropriate, to ensure, as set out in the Article 16(3) that Contracting Parties providing genetic resources are provided access to and transfer of technology which makes use of those genetic resources? (Article 16)	
a) no	
b) yes, please provide some details	
9. Have the taxonomic institutions in your country taken any initiatives in developing national priorities, both individually and regionally, in new technology? (Decision IV/1)	
a) no	
b) yes, in early stages of development	
c) yes, in advanced stages of development	
d) yes, some initiatives in place and some priorities identified	
e) yes, comprehensive priorities identified	
10. Has your country been involved in technology development and/or transfer for the maintenance and utilization of ex situ collections? (Decision V/26)	
a) no	
b) yes – please give details below (including types of technology transferred, actors involved, terms for transfer and means of access to technology)	
11. Has the clearing-house mechanism in your country been further developed in order to assist in obtaining access to information concerning access to and transfer of technologies? (Decision V/14)	
a) no	
b) yes, please provide some examples	

Role of public and private sectors in technology transfer and technology

12. Do you know of any examples of technology partnerships between public R&D institutions from developing countries and private-sector firms from industrialized countries? If so, to what extent have these partnerships involved	
a) the training of developing country scientists in the application of new technologies for the conservation and utilization of genetic resources	
b) information exchange on new scientific exchange and technological advances	
c) providing various technology components to developing country partner institutions	
d) engaging in joint R&D?	

13. Has your country taken any measures or developed any programmes to encourage the private sector or the public-private partnership to develop and transfer technologies for the benefit of governments and institutions of developing countries, including South-South cooperation?	
a) no	
b) yes, please give details	
14. Have any type of incentives been established in your country to encourage the participation of the private sector in conservation and sustainable use activities as sources of new technologies and potential financiers of conservation programmes?	
a) no	
b) yes, please give details	

Impact of intellectual property rights on technology transfer and technology cooperation

15. Are the technologies your country has accessed or wishes to access in the public domain or covered by intellectual property rights?	
a) public domain	
b) intellectual property rights	
c) both	
16. Have intellectual property rights been a limiting factor in acquiring technologies for the conservation and sustainable use of biological diversity?	
a) no	
b) yes, please provide an example and specify the following: the type of technology sought (hard or soft technology); the area to which it is to be applied (e.g. forest, marine, inland waters, agriculture, etc.)	

Capacity-building for technology transfer and technology cooperation

17. Have adequate institutional structures been established and/or is adequate human capacity available to access relevant technologies, in your country?	
a) no	
b) yes	
18. What, if any, have been the limiting factors in implementing relevant technologies?	
a) institutional capacity	
b) human capacity	
c) others - please specify	
19. Does your country consider that access to information and training or lack thereof has been a limiting factor in access to and transfer of technology?	
a) no	
b) yes, please provide some examples	
20. Has your country been able to identify relevant technologies in specific areas for the conservation and sustainable use of biological diversity in your country?	

a) no	
b) yes, please give details	
21. Has your country developed national policy and established international and national institutions to promote technology cooperation, including through the development and strengthening of technical, human and institutional capabilities?	
a) no (please specify the reasons)	
b) yes, please give some details or examples	
22. Has your country established joint research programmes and joint ventures for the development of technologies relevant to the objectives of the Convention?	
a) no	
b) yes, please give some details or examples	

Measures for facilitating access to and transfer of technology

23. Has your country established the mechanisms and/or measures to encourage and facilitate the transfer of technology to and technology cooperation with other Contracting Parties?	
a) no	
b) yes, please provide some details	
24. Has your country established channels for access to the technologies developed and applied for attaining the objectives of the Convention?	
a) no	
b) yes, please provide detailed information	

Success stories of and constraints to technology transfer and technology cooperation

25. Has your country identified any success stories and opportunities of and constraints to transfer of technology and technology cooperation?	
a) no	
b) yes, please provide detailed information	
