REVISED VERSION

Thematic Report on Transfer of Technology and Technology Cooperation

Please provide the following details on the origin of this report.

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Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report.

Technology Transfer in Canada is tackled on a sector-specific basis. Although many Government Departments execute programmes dealing with the transfer of environmentally sound technologies, there is no over-arching programme for technology transfer for the Government of Canada - it occurs on an as needed basis, and is usually specific to a particular programme.

The Biodiversity Convention Office, acting as the National Focal Point, has consulted various federal departments on the tech transfer programmes. These programmes inevitably involve stakeholders - and therefore, particular attention was paid in consulting those groups that had pre-established committees and organizations to deal with the transfer of technology. Core departments consulted included the Department of Foreign Affairs and International Trade Canada; the Canadian International Development Agency; Natural Resources Canada, Department of Fisheries and Oceans, Environment Canada; and the Canadian Environmental Assessment Agency

Technology Transfer is a very broad subject. The department of Natural Resources Canada, as with most Federal Government Departments, has no specific technology transfer plan for work associated with biodiversity, but rather, a general technology transfer policy: make the work that is performed by the Department as widely available as possible and as reasonable.

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	X
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	X - through various governmental regulatory, certification and review processes.
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	X - depending on markets and needs of clients or partners

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	X
c) yes, and a wide range of activities in many programmes of work	
d) if yes, please specify these activities and programmes of work	Through general technology transfer programmes

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)	X - the Canadian Food Inspection Agency
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	X - through CIDA
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	X (see below)
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	X (see below)
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	X
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)	X - national collections and museums

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	X - through link to Strategis (Industry Canada) and the Environmental Technology Advancement Directorate (Environment Canada) (see final comments)

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	Exists but not aware
b) information exchange on new scientific exchange and technological advances	Exists but not aware
c) providing various technology components to developing country partner institutions	Exists but not aware
d) engaging in joint R&D?	Exists but not aware

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	X- through CIDA

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 financers of conservation programmes?	
a) no	
b) yes, please give details	X - possibly through Climate Change Action Fund, Sustainable Development Technology Canada, and Environment Canada's Environmental Technology Advancement Directorate

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	X
16. Have intellectual property rights been a limiting factor in acquiring technologies for the conservation and sustainable use of biological diversity?	
a) no	X (see below)
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	X
18. What, if any, have been the limiting factors in implementing relevant technologies?	
a) institutional capacity	X
b) human capacity	X
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	X
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	X - indirect
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	X (see detailed comments)

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	X- but Natural Resource Canada's programmes are wide-ranging and cover much more than the Convention, however, an example might be the FireM3 work out of the Northern Forestry Centre.

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	X
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	X
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	X

Select Examples:

Montreal Protocol: As part of the Multilateral Fund for the implementation of the Montreal Protocol and substances that deplete the ozone layer, ETAD transfers technology and expertise to phase out the ozone-depleting substances in developing countries that are Parties to the Protocol

Clean Air Initiative in Latin American Cities: This international initiative addressed the growing air pollution problems in Buenos Aires, Lima-Callao, Mexico City, Rio de Janeiro, Sao Paolo and Santiago de Chile. Its goals are to foster public participation in implementing the use of low emission technology, promote clean air action plans, and advance the exchange of knowledge and experience in air quality issues

Strengthening Environmental Institutions in India: This bilateral cooperative project uses Environment Canada's expertise to strengthen institutional capacity in India to address environmental issues of national and global concern while promoting sustainable development.

Cooperation for Capacity-Building with the Pakistan Environmental Protection Agency (PEPA): This project focuses on sharing information and transferring knowledge and skills in environmental laboratory accreditation, oil spill prevention and remediation, environmental technology verification, hazardous products handling, and air quality monitoring and control.

Environmental Technology Trade Mission: These missions are important vehicles for building capacity, at home and abroad, for sustainable development, a healthy environment and a prosperous economy by promoting Canadian environmental technologies and know-how in the global marketplace.

Further comments

In general, technology transfer is being handled as a sector-specific issue. There are currently no programmes in existence in Canada that deal specifically with technology transfer for the conservation, sustainable use and benefit-sharing of biological diversity. However, it is recognized that these 'related' initiatives have indirect benefits for biodiversity.

Environment Canada's Environmental Technology Advancement Directorate: Environment Canada's Environmental Technology Advancement Directorate (ETAD) plays an important role in developing and supporting Environment Canada's international priorities. ETAD's international activities are guided by the priorities, directions and policies provided in various departmental strategies and business plans. It develops and applies science and technology for environmental protection in Canada and around the world.

Federal Partners in Technology Transfer (FPTT)

Federal Partners in Technology Transfer work to ensure the strategic management of intellectual property (IP) in the federal government, and facilitate all stages of the technology transfer process by bringing together people in Canada's innovation system. The FPTT brings together regional, national, and international associations providing its members with information, contacts and advice from technology transfer experts worldwide. The members of the FTTP consist of 16 federal science-based departments and agencies. The FTTP employs over 250 technology transfer professionals and transfers technology in more than 110 federal laboratories across Canada.

The FPTT Advisory Council consists of assistant deputy ministers and senior officials from 13 science-based departments and agencies. The Advisory Council acts as an intermediary between senior management in departments and agencies, and the FPTT concerning issues relating to technology transfer.

<u>Canadian International Development Agency</u>

Canada also has some 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 CIDA RADARSAT programme.

7 b)

Canada has contracts like the "Material Transfer Agreement (MTA) Germplasm and Unregistered Lines between the Department of Agriculture and Agri-Foods, Canada (AAFC) and several public breeding institutions" (http://www.wipo.int/globalissues/databases/contracts/summaries/index.html) – overall this contract is one which transfers knowledge, allowing researchers to claim their own increasing in knowledge from the material provided.

Private contracts commonly include transfer of technology and technological cooperation clauses as needed between the parties. However, these contracts are confidential in order to protect their business interests and are therefore generally not accessible to government.

8 b)

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 country Members and LDCs.

One of the principal CIDA initiatives is the Industrial Co-operation Division (CIDA-INC). CIDA-INC helps firms defray costs unique for doing business in the Asia-Pacific, Africa, Middle East and the Americas regions. It provides such assistance to Canadian firms that wish to build long-term business partnerships in order to promote and support sustainable socio-economic development. CIDA-INC also works to help reduce the risks of firms participating in such business activities with a view to supporting specific elements of investment projects in the area of training, social development, the participation of women and a clean environment. These activities aim to strengthen the knowledge, practical skills and technical know-how of local populations of developing country Members and LDCs.

International Development Research Centre (IDRC) is a Canadian public corporation mandated to initiate, encourage, support and conduct research into the problems of developing regions of the world, and into the means for applying and adapting scientific, technical and other knowledge to the economic and social advancement of those regions. IDRC has been promoting technologies for managing and sharing technology for the past 30 years through funding partnerships with other donors, including the private sector. IDRC's Environment and Natural Resource Management initiative comprises several programmes aimed at generating innovations within local communities of developing country Members and LDCs to manage their resources sustainably. Such innovations may be technical (e.g. improved production techniques), institutional (e.g. decision-making or planning processes) and/or policy-focused.

In addition Industry Canada sponsors several programmes for the transfer of technology by Canadian institutions and enterprises to developing country Members and LDCs. This work aims to improve the domestic and international investment climate in order to create incentives to global markets, including developing country Members and LDCs, by spurring companies to make their products and services export-ready. It also supports international collaboration for Canadian research institutions in emerging high-growth areas of electronic commerce, genomics, environmental technologies and advanced engineering.

16 a)

Canada's patent regime seeks to balance the need for effective patent protection to encourage research and development into new products and processes that have positive environmental impacts (e.g. remediation, less toxic chemicals, etc.) for Canadians, while promoting the diffusion of information to facilitate access and use of these innovations, as well as further innovative research. Elements that help create this balance include time-limited rights, disclosure of patent application, exemptions from the rights for experimental uses, provisions allowing fair government use, and measures to address abusive practices

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