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Report to UNECE and UNESCO on Indicators of Education for Sustainable Development

Report for Canada

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Executive Summary

1. The United Nations Economic Commission for Europe (UNECE) has asked member states to report on their implementation of the *Strategy for Education for Sustainable Development* in formal, non-formal, and informal settings, within the context of the United Nations Decade of Education for Sustainable Development. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has agreed that it will use the same format to collect data from its member states. Canada is a member of both organizations. The Council of Ministers of Education, Canada (CMEC), Environment Canada, and the Canadian Commission for UNESCO have collaborated to respond to these requests through the preparation of this document.
2. In Canada, there is no federal department of education and no integrated national system of education. The 13 jurisdictions – 10 provinces and three territories – have exclusive jurisdiction in education. With all of the jurisdictions involved in education for sustainable development (ESD), as well as extensive activities on the part of the nongovernmental organizations and the federal government, only limited examples of legislation, policies, and programs related to education for sustainable development are included in this report. It is not intended to be inclusive of all the activity and programs concerned with ESD in Canada. It covers the period from 2005-2007, with some reference to earlier initiatives to demonstrate continued progress. Selected examples are provided to give an overview of the numerous, varied, and high-quality activities focused on ESD in all parts of Canada; they have been chosen on the basis of geographic representation, client groups, types of initiatives, and to illustrate the widespread nature of the involvement in education for sustainable development. Sustainable development is also a very inclusive term, encompassing environmental, economic, and social themes such as poverty alleviation, peace, democracy, justice, human rights, gender equity, social equity, cultural diversity, rural and urban development, environmental protection, and natural resource management. Some examples used in the report reflect the broad definition of sustainable development, while others are illustrative of efforts in one or more of its components.
3. This report has been structured around the nine main issues outlined in the UNECE questionnaire.
4. **Policy, Regulation, and Operational Frameworks:** Sustainable development and education for sustainable development are widely represented in policy documents, action plans, and frameworks established by governments and other bodies across Canada. These range from broad statements of government intent that encompass all departments and activities, to documents from the educational ministries and departments detailing beliefs and strategies that encompass the principles of ESD, to very specific plans for education for sustainable development. Collaborative efforts, such as the newly created Regional Centres of Expertise, contribute to establishing the frameworks to support the expansion of education for sustainable development.
5. **Formal, Non-Formal, and Informal Learning:** In the elementary and secondary school systems, education for sustainable development has been introduced in a variety of ways. In

some jurisdictions, ESD has been integrated throughout the curriculum, including particular elements of ESD in various grade levels and subject areas. By integrating relevant ESD topics into science, social studies, geography, history, world studies, technology, and other courses, multiple perspectives are provided. In other systems, a single course focuses on sustainable development. Some of the more innovative programs in ESD are provided through nongovernmental organizations (NGOs) that work with students and teachers to provide engaging learning, both inside and outside the classroom. Postsecondary institutions offer degree, diploma, certificate, and non-credit programs, some of which focus on sustainable development and others on the environment more particularly. Many departments and agencies of the Government of Canada are actively involved in ESD, through designing and delivering course for their staff and/or providing training, consulting services, and resources for the publics they serve. Government activities also encompass raising public awareness through programs, publications, demonstration projects, and research. Not-for-profit, nongovernmental, and civil society organizations lead much of the public and community based activity about sustainable development. There is always an educational component to these initiatives – whether through purposeful education with children, youth, and adults or less formal learning through public awareness campaigns and project involvement.

6. **Educators:** The pre-service education of teachers is provided by the postsecondary education sector in Canada, with each institution devising its own program offerings. Some teacher training programs include information on issues related to sustainable development in specific courses, such as environmental education, outdoor education, or diversity and equality in the classroom. Sustainable development is also addressed through special lectures, workshops, summer programs, and other forms of pre-service training for teachers in Canada. The teachers' exposure to the themes depends on which institution they are attending, which specialty they are following, and their individual interests. The ministries and departments of education, the teacher associations and unions, and school boards, most often in cooperation with non-profit organizations, provide in-service training of teachers in issues of sustainability. Training is also provided for educators outside the school systems, mainly through community groups and nongovernmental organizations.
7. **Tools and Materials:** The educational jurisdictions provide curriculum resources on sustainable development for their teachers, often through curriculum documents and web links to sites that are specialized in the topics being covered in particular parts of the curriculum. Many resources for both formal and non-formal education are available from government departments, universities, NGOs, museums, and other organizations. Several web sites are available for ESD resources, including some that have reviewed and recommended specific titles.
8. **Research and Development:** Research in sustainable development and education for sustainable development is largely taking place in universities in Canada. Among the leaders in this are three universities with UNESCO Chairs that focus on education for sustainability and the environment and sustainable development. Also very active are the many specialized research centres that focus on specific components of sustainable development, such as community development, natural resource management, governance, biodiversity, and human

rights. NGOs, the Government of Canada, and various provincial and territorial departments and ministries conduct research as well.

9. **Co-operation:** Educational institutions and nongovernmental organizations in Canada are extensively involved in international cooperation for sustainable development. Projects are currently under way on sustainable forests, civic engagement, democracy, land use, citizenship, environmental conservation, justice, equality, and teacher education for ESD, among other topics.
10. **Indigenous Knowledge:** Through frameworks for education and curriculum documents at the elementary and secondary level, through activities of Aboriginal groups, and through university research initiatives, the knowledge of Indigenous people in Canada is being preserved and applied in education for sustainable development.
11. **Challenges and Obstacles:** Both political and public awareness of the importance and the challenges of sustainable development are increasing in Canada. Among the challenges being faced are that the size and complexity of the issues in sustainable development present difficulties for teaching and learning; the curriculum is already crowded with many competing priorities; dissemination and sharing of programs and resources is limited, especially due to the lack of translation of materials (from French to English and English to French) for use in other regions; many teacher training institutions do not include information on ESD in teacher pre-service education; and more evaluation and monitoring of ESD are needed.
12. **Assistance Needed:** In order to improve ESD, additional funding for all levels of formal education as well as non-formal and informal education would be important to support the increasing number and scope of initiatives. Other enhancements of the current situation are more youth-directed and community- school projects, greater sharing of resources and programs; inclusion of Indigenous perspectives more widely throughout ESD; and the development of a collaborative action plan for ESD.
13. Much has been accomplished in ESD in Canada and much more remains to be done. More legislative support, a much broader integration of the full scope of sustainable development into the curriculum, the higher education sector, and teacher training institutions, and greatly enhanced inclusion of Indigenous perspectives of sustainability are all part of the efforts for the rest of the Decade.

Introduction

The Context of the Report

14. The United Nations Economic Commission for Europe (UNECE) is one of the five regional commissions of the United Nations. It is the forum in which the countries of western, central, and eastern Europe, central Asia, and North America – 56 countries in all – come together to forge the tools of their economic cooperation. UNECE takes a very active role in certain regional and cross-sectoral processes, including education for sustainable development. In 2005, various stakeholders, including international organizations, business, nongovernmental organizations, regional environmental centres, and research institutions took part in a UNECE meeting and provided valuable contributions to the development of a regional *Strategy for Education for Sustainable Development*, which was adopted by officials from education and environment ministries throughout the UNECE region.
15. The objective of the Strategy is to incorporate key themes of sustainable development in all education systems. These themes include a wide range of issues: poverty alleviation, peace, ethics, democracy, justice, security, human rights, health, social equity, cultural diversity, economy, environmental protection, and natural resource management.
16. The United Nations Economic Commission for Europe has asked member states to report on their implementation of the *Strategy for Education for Sustainable Development* in formal, non-formal, and informal settings, within the context of the United Nations Decade of Education for Sustainable Development. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has agreed that it will use the same format to collect data from its member states. Canada is a member of both organizations. The Council of Ministers of Education, Canada (CMEC), Environment Canada, and the Canadian Commission for UNESCO have collaborated to respond to these requests through the preparation of this document.
17. This report has been prepared through an inclusive process involving multiple stakeholders in the support and delivery of education for sustainable development and the implementation of the *Strategy for Education for Sustainable Development* and the UN Decade of Education for Sustainable Development. A draft report was prepared from resources and contacts supplied by the Council of Ministers of Education, Canada, Environment Canada, and the Canadian Commission for UNESCO. The web sites, resources, and documents of the major stakeholders were also consulted. The draft report was circulated to the ministries and departments responsible for education in the 13 educational jurisdictions, to the nongovernmental organizations (NGOs) and civil society members that are affiliated with the Canadian Commission for UNESCO, and to the various departments in the Government of Canada that are involved in education for sustainable development. The comments and suggestions received from this wide body of reviewers were incorporated into the final version of this paper. In this way, the report brings together contributions from the key players in education for sustainable development across Canada.

18. As Canada has 13 educational jurisdictions, all of which are involved in education for sustainable development, plus the activities of the nongovernmental organizations and the federal government, only limited examples of legislation, policies, and programs related to education for sustainable development can be included in this report. It is not intended to be inclusive of all the activity and programs concerned with ESD in Canada. It covers the period from 2005-2007, with some reference to earlier initiatives to demonstrate continued progress. Selected examples are provided to give an overview of the numerous, varied, and high-quality activities focused on ESD in all parts of Canada; they have been chosen on the basis of geographic representation, client groups, types of initiatives, and to illustrate the widespread nature of the involvement in education for sustainable development.
19. Much more can be learned by visiting the web sites of the provincial and territorial departments and ministries responsible for education, the nongovernmental and civil society organizations, postsecondary institutions, and the federal government departments listed in Appendix A, as well as by consulting the source documents listed there. A map of Canada is included (Appendix B) in this report to situate the provinces and territories
20. The number and diversity of the jurisdictions and organizations involved in ESD made it impossible to complete the detailed questionnaire distributed by UNECE. This report has been structured around the nine main issues outlined in the questionnaire and, within each section, includes information that responds to the indicators presented in the UNECE questionnaire under each issue:
 - Ensure that policy, regulatory, and operational frameworks support the promotion of education for sustainable development
 - Promote sustainable development through formal, non-formal, and informal learning
 - Equip educators with the competence to include sustainable development in their teaching
 - Ensure that adequate tools and materials for education for sustainable development are accessible
 - Promote research on and development of education for sustainable development
 - Strengthen cooperation on education for sustainable development at all levels within the UNECE Region
 - Foster conservation, use, and promotion of knowledge of Indigenous Peoples in education for sustainable development
 - Describe any challenges and obstacles encountered in the implementation of the strategy
 - Describe any assistance needed to improve implementation.
21. The definition of education for sustainable development that guides the preparation of this report is outlined in the *Guidance for Reporting* document provided by UNECE. Education for sustainable development reflects the parent term of sustainable development, defined by the 1987 World Commission on Environment and Development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainable development is a complex issue, encompassing economic, environmental, and social dimensions. UNECE provides a comprehensive list of what is included within education for sustainable development, including poverty alleviation, citizenship, peace, ethics, responsibility in local and global affairs, democracy and

governance, security, human rights, health, gender equity, cultural diversity, rural and urban development, economy, production, consumption patterns, corporate responsibility, environmental protection, natural resource management, and biological and landscape diversity. It is within this very broad understanding of education for sustainable development that this report for Canada has been prepared. Some examples used in the report reflect the broad definition of sustainable development, while others are illustrative of efforts in one or more of its components.

Responsibility for Education

22. In Canada, there is no federal department of education and no integrated national system of education. Within the federal system of shared power, Canada's Constitution Act of 1867 provides that "[I]n and for each province, the legislature may exclusively make Laws in relation to Education." In the 13 jurisdictions – 10 provinces and three territories – departments or ministries of education are responsible for the organization, delivery, and assessment of education at the elementary and secondary levels. The institutions in the postsecondary system have varying degrees of autonomy from provincial or territorial government control. In some jurisdictions, separate departments or ministries are responsible for elementary-secondary education and for postsecondary education and skills training. Appendix C provides more extensive information on the structure, funding, and functioning of education in Canada.

The Policy, Regulatory, and Operational Frameworks

23. Sustainable development and education for sustainable development are widely represented in policy documents, action plans, and frameworks established by governments and other bodies across Canada. These range from broad statements of government intent concerning sustainable development that encompass all departments and activities, to documents from the educational ministries and departments detailing beliefs and strategies that encompass the principles of ESD, to very specific plans for education for sustainable development. The following examples are provided to illustrate the range of approaches that can be found in the provinces and territories, as well as those of the federal government and some NGOs.

Government Policies and Strategies

24. Sustainable development is not a new idea within the Quebec government. Since the 1980's, action has been taken to raise awareness about the economic, environmental, and social principles and activities of living consistent with the idea of a sustainable future. In November 2004, the Ministry of the Environment released the *Québec Sustainable Development Plan, Consultation Document*. Over 3,500 people attended public hearings held in 21 municipalities across Quebec to discuss this document. Overall, the government received over 580 position papers and heard from more than 800 people. Following the consultations, changes were made to the draft legislation. In 2006, the *Sustainable Development Act* came into force in Quebec to introduce a new management framework to the public service so that, when exercising its power and responsibilities, it integrates the principles of sustainable development. The Ministry of Sustainable Development,

Environment and Parks is responsible for this Act, including its understanding, implementation, and the development of indicators to measure progress. The Quebec Ministry of Education, Recreation and Sports was involved in the development of the *Sustainable Development Plan* and is a member of the Inter-ministerial Committee on Sustainable Development, which ensures that government policy and practice are consistent with the principles of sustainable development and that the initiatives of the various departments, including those of education, are complementary.

25. In 2005, the government of Newfoundland and Labrador issued its *Climate Change Action Plan*, which affirmed the importance of education in addressing climate change and included public awareness and shareholder engagement among its key principles. Among its commitments in this document, the province is funding the Climate Change Education Centre and working with postsecondary institutions on research and other climate change initiatives.
26. The Newfoundland and Labrador Department of Education has developed a strategic framework to promote education for sustainable development on multiple levels. This strategy includes active participation from both the public and private sectors, and builds on existing programs that promote the principles associated with sustainable development. The *Statement of Intent: Building a Better Tomorrow* affirms the principles of the United Nations Decade for Sustainable Development (DESD) and states the Department of Education's intention to develop strategies that:
 - Advance education for sustainable development within Newfoundland and Labrador
 - Foster a culture that promotes sustainability in the areas of the environment, culture, and the economy
 - Encourage increased access to quality education for all citizens
 - Reorient existing educational programs to further improve the knowledge, skills, principles, and attitudes related to sustainability
 - Promote broader public awareness whereby citizens contribute to the creation of sustainable communities through private and public participation
 - Enhance education and training for business leaders and workers that facilitate sustainable economic practices.
27. The province of Manitoba has been particularly active in all aspects of sustainable development and education for sustainable development. Manitoba proclaimed *The Sustainable Development and Consequential Amendments Act* in July 1998. The Act served as a framework for sustainable development policy development and implementation. It established a Manitoba Round Table for Sustainable Development and required the preparation of a Sustainable Development Strategy, Sustainability Indicators, and a Provincial Sustainability Report on a regular basis. Sustainable development must also be considered in all government annual reports of activities submitted to the Legislature. In addition, the Act required the establishment of a code of practice, government financial management and procurement guidelines, goals and action plans, and that a regulation concerning the financial management and procurement guidelines for local authorities, school division, universities, colleges, regional health authorities, and hospitals.

28. The *Sustainable Development Strategy* for Manitoba refers to the importance of education defined very broadly to include the elementary and secondary system, postsecondary education, and public and private sector employees. The Manitoba Department of Education, Citizenship and Youth has developed a provincial *Education for Sustainability Action Plan (2004–2008)* to foster teaching and learning for sustainability in elementary and secondary classrooms. The Action Plan includes:
- Sustainable development concepts integrated into new curricula
 - Teacher training workshops and other projects that enhance teaching and learning for sustainability, such as the UNESCO Associated School Project Network and Youth Taking Action Forums
 - Web sites focusing on ESD
 - Grants for educators to collaboratively plan, develop, and implement sustainability focused curriculum units
 - Information, best practices, and learning resources focused on sustainability education identified and shared
 - A provincial Education for Sustainable Development Working Group established to create a culture for education for sustainability
 - Benchmarking and tracking of sustainability literacy in the curricula
29. A position of Sustainable Development Co-ordinator has been created in Manitoba to work with the Department of Education and the Department of Advanced Education and Training to provide support and leadership to departmental sustainable development initiatives.
30. In May 2007, the New Brunswick Self-Sufficiency Task Force recommended that the Government of New Brunswick move quickly to implement its recommendations, targeting 80 of the 91 recommendations to be completed by May 2008, with the remaining 11 in place within two to five years. The Task Force had held consultations and focus groups throughout the province and had heard a strong message of the need for transformation, reinforced with many of the essential themes of sustainable development. Among the recurring messages received by the Task Force were that small is beautiful, growth can not be at the expense of the environment, and community initiatives and youth both have key roles to play in development and change. One recommendation called for a comprehensive regional planning process for all areas of the province, placing an emphasis on the environment, sustainable development, land use, housing infrastructure, and social and economic development. Innovative approaches to citizen engagement were recommended as essential integral to the planning process.
31. Alberta does not approach sustainable development on a sector-by-sector basis, but rather integrates sustainable development as a whole. The Government of Alberta's 20-year strategic plan, *Today's Opportunities, Tomorrow's Promise: A Strategic Plan for the Government of Alberta*, focuses on unleashing innovation, leading in learning, competing in the global marketplace, and making Alberta the best place to live, work, and visit. The Strategic Plan has been established to guide the province's efforts on issues relating to sustainable development, global competitiveness, and economic diversity, and significantly

supports the scope of the UN Decade of Education for Sustainable Development and the *Strategy for Education for Sustainable Development*.

32. Provincial government departments and agencies in Alberta supporting the principles of education and sustainable development include Sustainable Resource Development, Environment, Education, Advanced Education and Technology, Tourism, Parks, Recreation, and Culture, and the Alberta Heritage Savings Trust Fund. Issues of sustainability have been integrated through educational programming initiatives in the elementary, secondary, and postsecondary sectors.
33. Prince Edward Island has a *Sustainable Resource Policy* that provides policy direction to all government departments with the goal of uniting their efforts to manage and safeguard the natural province's resources. Education at all levels is an essential component for building this sustainable future. For example, the Department of Education is currently developing and implementing a provincial curriculum in science, social studies, and health that contains specific outcomes and learning opportunities related to sustainability, stewardship, and the environment. This curriculum will be implemented and maintained within the provincial educational system during the Decade of Education for Sustainable Development.
33. The incorporation of Education for Sustainable Development received a major push when the Government of British Columbia set a target for a 33 per cent reduction in greenhouse gases by 2020. As a result, all government ministries are working toward lowering their carbon footprint. With this work has come an education component for both the formal and non-formal sectors of British Columbia's population. Some examples of the work that has been done include:
 - Creation of a Manager of Sustainable Schools position to promote ESD within the province's school system.
 - Creation of a Sustainable Coordinator position to work with Ministry of Education, Ministry of Advanced Education, and Ministry of Finance to assist staff in 'working green.'
 - Funding for school to obtain Green Schools Eco-Kits from the SEEDs Foundation
 - Cross ministry collaboration on a number of education related resources and program such as idle-reductionIn addition, a multi-stakeholder steering group comprised of the British Columbia Ministry of Education, the Ministry of Energy, Mines and Petroleum Resources and the province's energy utilities has been established to track and monitor the implementation of Education for Sustainable Development activities as outlined in the British Columbia Government's Energy Plan.
34. Young people in Saskatchewan continue to identify the need to address climate change as a priority. One of the recommendations flowing from the 2007 Saskatchewan Youth Summit was that: By 2020, Saskatchewan should become a world leader of excellence in environmentally driven social and economic development. Youth recognize they play a key role in achieving that goal. The Saskatchewan government's *Energy and Climate Change Plan* builds on commitments articulated in Saskatchewan's *Green Strategy* to address the challenges of climate change to ensure sustainable long-term economic growth through:

- Integrating concepts and principles of sustainable development into all appropriate curricula from pre-kindergarten through secondary school
 - Working with provincial groups such as Climate Change Saskatchewan, the Saskatchewan Education for Sustainable Development Working Group, and the United Nations Regional Centre of Expertise on Education for Sustainable Development/Saskatchewan to provide quality instructional materials and support educators
 - Supporting community-based student activities that minimize the impact of climate change through initiatives such as Youth Forums on Sustainability
 - Supporting and collaborating with organizations offering workshops for teachers regarding climate change and other sustainability issues
 - Strengthening provincial and regional planning processes to identify and respond to labour market demands related to the green economy, including climate change initiatives
 - Working with the Saskatchewan Institute of Applied Science and Technology, the regional colleges, and other educational institutions to ensure appropriate educational and training opportunities are available in those areas that require specialized training in energy efficiency retrofit, solar and wind installation, and biomass applications
 - Working collaboratively with First Nations and Métis organizations and training institutions to help ensure First Nations and Métis people have the knowledge and skills they need to establish successful careers within the green economy
35. Educational components are key to the strategies by which the Government of Canada integrates sustainable development into its activities. The 2005 compendium, *Education for Sustainable Development in Canada: The Work of the Federal Government*, brings together the education-related commitments that are part of the sustainable development strategies of 29 federal departments and agencies for the years 2004 through 2006. The document was developed by Natural Resources Canada, working with an interdepartmental committee, to start off the Decade of Education for Sustainable Development.

Frameworks for Education

36. In order to initiate strategic changes to the current structure of adult education and training in Nunavut, a territory in Northern Canada with a population that is 85 percent Inuit, it was necessary to establish a vision of the territory's future. To this end, a statement of vision, values, and guiding principles was developed as part of the *Nunavut Adult Learning Strategy*, with the tenets of education for sustainable development at its core. The vision links the cultural, social, and economic development with common goals achieved through collaboration, cooperation, and investment in human resources. Among the values are:
- Land, languages skills, and respectful pride in the local and regional culture are fundamental values for adults and children
 - The community is a vital unit of Nunavut society. The principles of community ownership, social responsibility, and public service should form the basis for programs

- Equal access, equal opportunity, the right to learn in the first language, learning as a lifelong process, and the value of teaching and learning from all sources are fundamental.
37. The Nunavut adult education and training system will be built around these guiding principles, which are rooted in *Inuit Qaujimagatuqangit*, which is translated as “that which is long known by Inuit’. In later sections of this report, more detail is provided on how these principles are translated into curriculum and teaching in Nunavut.
38. The Northwest Territories (NWT) issued a document entitled *Our Students Our Future: An Educational Framework*. References to the concepts of ESD are found throughout this document, starting with a perspective on the history of NWT and the way that the Aboriginal inhabitants educated their children. The knowledge, skills, attitudes, and values that the children learned provided a clear sense of identity, a unique view of the world that they inhabited, and a strong sense of their cultural identity. The document recognizes that the world has changed and that schools must provide children with new skills and abilities, while still infusing them with an understanding of and attachment to their traditional cultures. Linguistic, cultural, social, economic, and political challenges have to be considered when planning and delivering education in NWT.
39. In its document entitled *Basic Principles*, the Prince Edward Island (PEI) Department of Education has outlined the legislation and principles that provide a framework for public education, many of which are directly related to ESD. For example, respect and support for human rights include the application of the *Canadian Charter of Rights and Freedoms* and the *PEI Human Rights Act* through example and through the programs and materials used in the school. Among these rights is gender equity. The public education system must also reflect the character, cultural heritage, and democratic institutions of the society it serves, including respect for the individual, heritage, multiculturalism, and democratic principles. The rural character of PEI’s environment, its relation to the sea, the contributions of the Aboriginal peoples, the presence of a number of distinct cultural groups, and the prominent role of religion also influence educational institutions and practices. These principles are then translated into goals to be addressed by learning, whether formal and informal. The goals include:
- Develop an appreciation for one’s heritage and a respect for the culture and traditions of others
 - Develop a sense of stewardship for the environment
 - Develop an understanding of gender equity issues and of the need to provide equal opportunities for all
 - Develop an understanding of fundamental human rights and an appreciation for the worth of all individuals.
40. The purpose of the school system in British Columbia is to enable all learners to develop their individual potential and to acquire the knowledge, skills, and attitudes needed to contribute to a healthy, democratic, and pluralistic society and a prosperous and sustainable economy. Progress towards these goals depends on educated citizens who accept the tolerant and multi-faceted nature of Canadian society and are motivated to participate actively in its democratic

institutions. The document *Diversity in BC Schools: A Framework* outlines the guidelines provided by the BC Performance Standards for Social Responsibility so that schools and families have a common set of expectations. Students are expected to contribute to the classroom and school community, solve problems in peaceful ways, value diversity, defend human rights, and exercise democratic rights and responsibilities.

41. British Columbia has revised the *Environmental Learning and Experience: An Interdisciplinary Guide for Teachers*, which sets a conceptual framework for environmental education in British Columbia. The second phase of this project is underway with the Ministry of Education collaborating with Simon Fraser University to develop a series of videos that demonstrate best practices for ESD. In addition, the British Columbia Working Group for Sustainability Education has partnered with BC Hydro to map learning outcomes within the curriculum where ESD is a natural fit to assist teachers in instruction.

Collaboration for Education for Sustainable Development

42. Through a partnership between Environment Canada, Manitoba Education, Citizenship and Youth and Advanced Education and Training, and the nongovernmental organization Learning for a Sustainable Future, eight Provincial/Territorial Education for Sustainable Development Working Groups have been established in British Columbia, Alberta, Saskatchewan, Manitoba, Nunavut, Ontario, New Brunswick, and Nova Scotia. Their purpose is to foster a culture of ESD in Canada by engaging leaders from provincial and territorial ministries, the federal government, the formal, non-formal, and informal education sectors, business, and community organizations in discussions and actions to advance ESD. To date, the ESD Working Groups have been active in sponsoring public forums, providing input to provincial curriculum reviews, developing resources, planning conferences, and creating web sites. As the Working Groups evolve, consideration will be given to their expansion to the other provinces and territories. Learning for a Sustainable Future (LSF), which is leading this initiative, is a non-profit organization created to integrate education for sustainable development into the curriculum at all grade levels in Canada. LSF was founded by a group of youth, educators, business leaders, and government and community members
43. Long-term objectives of the ESD Working Groups include:
 - Integration of sustainability education into formal, non-formal, and informal education
 - Coordinate implementation of sustainability education activities (i.e. curriculum, policies, research, teacher training, and facilities management)
 - Establishment of strategic collaborations between governments, education sector leaders, businesses, and non-government organizations to increase their cohesion and leverage in creating a culture of ESD
 - Coordination of stakeholders from formal, non-formal, and informal education sectors for policy input, debate, exchange, and planning to improve delivery of ESD activities
44. The Manitoba Education for Sustainable Development Working Group was established as a pilot in December 2005, comprising stakeholders from formal, non-formal, and informal

education, governments, NGOs, industry and community groups. The process was documented for potential replication across Canada. Its role is to support regional coordination and the development and implementation of ESD across Manitoba. Three subcommittees (Policy, Priorities, Guidelines and Regulation; Curriculum, Professional Development, Learning Resources; and School as a Learning Facility – Models and Innovative Practices) identify past and present ESD activities as well as gaps and opportunities, leading to the development of a provincial *ESD Action Plan*. The Working Group is planning to host an international ESD Conference in November 2008.

45. The British Columbia Working Group and Network on Sustainability Education (BCWGSE) was established early 2006, modeled upon the Manitoba framework. The project consists of three components: the BC Working Group on Sustainability Education; three sector teams – K-12 education, non-formal education and postsecondary education; and a BC Network of sustainability education professionals, communicating through the network web space. The BCWGSE, in partnership with Simon Fraser University, hosted a one-day dialogue entitled *Why Sustainability Education* in March 2007 that brought together 75 stakeholders from across BC to collectively address the challenges and opportunities facing education for sustainability in the province. Presenters included the UNESCO Chair for Education for Sustainable Development at York University, the Deputy Minister of Manitoba Education, Citizenship and Youth, and the Deputy Minister of Advanced Education for British Columbia.
46. In 2007, the BCWGSE established two sustainability education scholarships with funding from the BC Ministry of Advanced Education. The scholarships are to be awarded to British Columbia graduate level students who are working on projects that are interdisciplinary, values-driven, and locally relevant. The goals of the scholarships are to support sustainability education, increase student representation on the BC Working Group on Sustainability Education, and produce a sustainability education project, meaningful for British Columbia communities.
47. The National Education for Sustainable Development Expert Council (NESDEC), also created through a partnership between Environment Canada, Manitoba Education, Citizenship and Youth and Advanced Education and Training, and Learning for a Sustainable Future, has members from the Provincial/Territorial ESD Working Groups, as well as experts from the formal education, government, business, and community sectors. The NESDEC is to encourage the integration of ESD into formal, non-formal, and informal education and the development of activities such as sustainable literacy, research, communication, and sharing best practices. The NESDEC also provides advice to the Provincial/Territorial ESD Working Groups on program direction and constitutes a networking forum for stakeholders. The NESDEC held its first meeting in March 2006 in Toronto so that Council members could establish goals and develop action plans for the next two years. In conjunction with this meeting, Learning for a Sustainable Future, in partnership with a Canadian bank, hosted the Fourth Annual State of Education for Sustainable Development Symposium on the role of education in pursuit of a sustainable future, the UNECE *Strategy for Education for Sustainable Development*, and the importance of citizen action.

48. Since late 2005, a multi-stakeholder committee of environmental educators in Alberta has consulted with over 180 organizations that have a commitment to environmental education (EE), asking them about barriers to their work and for suggestions on how to overcome these barriers. The result is a document entitled *A Framework to Advance Environmental Education in Alberta*. A summit in May 2007 launched a collaborative effort to deliver on the Framework's outcomes. The Alberta Council for Environmental Education (ACEE) is the Secretariat for this initiative and was founded to help deliver on its key strategies. Members of the stakeholder committee included representatives of the Education, the Environment, and the Tourism, Parks, Recreation and Culture Departments of the Alberta government, the major resource-based industries, universities, foundations, and environmental groups. Environmental education focuses on the environment, while allowing the learner to understand the social, economic, and political implications of decision making in connection with the environment and the use of natural resources.
49. The Alberta Framework includes inputs, activities, outputs, as well as short, medium, and long-term outcomes for environmental education. The outcomes include changes to the curriculum, more environmentally literate teacher graduates, better funding, better collaboration among EE stakeholders, increased numbers of EE educators, increased quality and effectiveness of EE, and enhanced societal and public support for EE. The outcomes are inter-related and engage school boards, teachers, NGOs, business, industry, foundations, community groups, university faculty members, youth, and the federal, provincial, and local governments. The document situates itself as a tool for the achievement of the Canadian commitment to UN Decade of Education for Sustainable Development
50. The Youth Environment Network (YEN) was created by four leading youth organizations as the first youth powered organization in Canada to address the need for capacity building in the Canadian youth environmental movement. Its mission is to increase the effectiveness of the Canadian youth environmental movement in its efforts to raise awareness of environmental issues and to effect policy and lifestyle change. YEN is mandated to provide tools, resources, and support to youth environmental NGOs, to link them together nationally, and to connect groups working on mainstream environmental issues with those working on issues of social, justice, human rights, and Aboriginal rights.
51. Three communities in Canada have received the Regional Centres of Expertise (RCE) Designation from the United Nations University Institute of Advanced Studies. An RCE is a network of existing formal, non-formal, and informal education organizations aiming to deliver education for sustainable development to a region or local community. RCEs aspire to achieve the goals of the UN Decade of Education for Sustainable Development by translating its global objectives into the context of the local or regional communities. The first community to receive this designation, in 2005, was Toronto, in Ontario. With an expected doubling of its population from three to six million over the next 15 years, Toronto faces challenges of absorbing culturally diverse populations and creating jobs and housing while managing the social and economic consequences. RCE Toronto's vision is to transform the Greater Toronto region to a sustainability-oriented society by improving the quality of public education, public awareness, and training. The goals of this RCE are to improve the quality of public education towards sustainable development and to allow civic governments to engage

the community in addressing local sustainability issues. A local school board, postsecondary institutions, the City of Toronto, Environment Canada, NGOs, and the media are all involved in the network.

52. The Saskatchewan RCE (SK RCE), recognized in 2007, involves postsecondary institutions, other educational organizations, businesses, governments, non-profit and community organizations, and individuals. Six education for sustainable development issues have been identified by the region: climate change; health; farming and local food production, consumption, and waste management; reconnecting to natural prairie ecosystems; supporting and bridging cultures for sustainable living and community building; and sustainable infrastructure including water and energy. The SK RCE focuses on two crosscutting themes – sustaining rural communities and educational approaches for regional ESD.
53. As the first step in delivering on the 2007 Regional Centre of Expertise designation of the City of Sudbury, Ontario, talks were held with community, professional, and business organizations, health and environmental groups, educational institutions, and governments as part of the Healthy Community Initiative. The directions that were outlined in the discussion comprised active living and healthy lifestyles, the environment, civic engagement and social capital, and economic initiatives.

The Promotion of Sustainable Development through Formal, Non-Formal, and Informal Learning

54. In order to ensure that sustainable development becomes integral to societal values, education for sustainable development must be offered through lifelong learning opportunities, especially at all levels of the education system. As defined by UNECE, formal learning takes place in educational institutions, leading to recognized diplomas and qualifications, non-formal learning takes place outside and sometimes parallel to mainstream systems of education and training and does not typically lead to formal certificates. It may be provided in the workplace, and through the activities of civil society, youth organizations, trade unions, and other groups and organizations. Informal learning is a natural accompaniment to everyday living, often without deliberate intent on the part of the learner.

Education for Sustainable Development Integrated Throughout the Elementary and Secondary Curriculum

55. Human values education, one of the key components of sustainable development, is being addressed across Canada, accompanied by detailed curriculum documents and extensive resources. In the *Foundation Document for the Development of the Common Curriculum Framework for Social Studies Kindergarten to Grade 12* completed by the Western Canadian Protocol for Collaboration in Basic Education, the role of social studies is defined in part as “to help students...to become active and responsible citizens, engaged in the practice of democratic ideals.” Specific goals emphasize that students must understand their rights and responsibilities in order to participate fully in society, value the diversity, respect the dignity, and support the equality of all human beings, and develop a sense of social compassion, fairness, and justice. The principles and goals of the *Framework* were used as the basis of

curriculum development, teacher training, and the provision of resources and tools specific to student needs at different levels in the Northwest Territories, Nunavut, British Columbia, Alberta, Saskatchewan, and Manitoba.

56. The *Atlantic Canada Education Foundation Essential Graduation Learnings* document states that secondary school graduates must demonstrate the knowledge, skills, attitudes to assess social, cultural, economic, and environmental interdependence in a local and global context, with special attention to human rights, citizenship, discrimination, and sustainable development. This document is prepared by the Atlantic Provinces Education Foundation, which has Newfoundland and Labrador, Nova Scotia, New Brunswick, and Prince Edward Island as members.
57. In Newfoundland and Labrador, the Department of Education is focusing on incorporating specific, long-term curriculum outcomes on sustainability into the pre-school, elementary, and secondary school curriculum. In recent curriculum development and renewal, an integrated approach has been taken to education and sustainability. For example, curriculum outcomes and learning activities on sustainability are found in science and social studies curricula from elementary through secondary school. This includes:
 - New elementary curriculum attention to the value of living organisms and the impact of human activities on their survival
 - A focus at the elementary level on the study of animal habitats, ozone depletion, energy conservation, and endangered species, as well as cultural issues, cultural preservation, and sustainability
 - Intermediate social studies courses with specific issues associated with sustainability in relation to cultural, economic, political, and social issues
 - In a mandatory secondary school science course, 25 per cent of the instructional time is devoted to issues associated with sustainability. A new course in social studies, to be implemented in 2008, will enable students to assess various issues related to sustainability.
58. The development of an environmental science course by the Newfoundland and Labrador Department of Education, in collaboration with the Department of Environment and Conservation, as well as five federal and five other provincial government departments/agencies is of particular significance. This unique approach to curriculum development has the potential to initiate a pan-Canadian program of environmental science education that will provide students in every region of Canada with relevant, local examples of key principles of sustainability. In 2007, the Government of Ontario announced the creation of the Curriculum Council, consisting of 11 community leaders and education experts from across Ontario to advise the Minister of Education on curriculum issues that require broader public consultation and deliberation and to establish working groups to research and analyse each issue as it arises. As part of this initiative, Dr. Roberta Bondar chaired a review of how the environment and conservation were being taught in elementary and secondary schools and provided recommendations to the Curriculum Council. Dr. Bondar was the first Canadian woman and the world's first neurologist in space. The working group's report, *Shaping Our Schools, Sharing Our Future*, was released in June 2007. The government is moving to implement the report's recommendations so that by January 2008 all Ontario students will be

learning more about the environment in the classroom. The changes being made by the Ministry of Education include:

- Integrating environmental education into all subjects in all grades
- Developing an optional Grade 11 course focused on environmental education
- Increasing experiential learning opportunities for students
- Creating and publishing a new environmental education policy by the end of 2007 to ensure high quality and relevant learning
- Establishing environmental education standards to be applied to current and future reviews of curriculum
- Working more closely with community partners and other government ministries to enhance environmental education
- Providing training and resource materials to teachers

59. Other recent initiatives to support environmental learning by the Ontario government have been:

- Supporting and expanding the capacity of community organizations working with students on environmental issues
- As part of the Government's Student Success Strategy, secondary schools are offered a new environment major that allows students to focus on a future environmental career by completing a bundle of classroom courses, workplace experiences, and industry certifications
- Launching two websites – one for secondary students and another for elementary students - that explain the challenges facing the planet and how to take action to protect the environment.

60. In Saskatchewan, education for sustainable development concepts and principles are being integrated into all appropriate curricula from elementary through secondary school. Along with some of the other provinces and territories, Saskatchewan is implementing the *Pan-Canadian Science Framework*, which addresses sustainability and encourages students to engage in related projects in their communities.

61. Alberta Education approaches sustainable development by infusing sustainability education throughout the curriculum:

- The Elementary Science Program has two main emphases – science inquiry and problem solving through technology – that are developed through the topics of interactions in the environment, the needs of plants and animals, habitat preservation, reducing, reusing, and recycling of waste materials, and maintaining wetland and forest ecosystems. Current work on revising the *Elementary Science Program of Studies* provides an opportunity to enhance the consideration of the environment and sustainable development.
- The Grades 7-12 Science Program, through an emphasis on the social and environmental contexts of science and technology, provides students with opportunities to investigate science-related social and environmental issues through the topics of biological diversity,

energy use and conservation, environmental chemistry, matter and energy exchange in the biosphere, and sustaining global ecosystems.

- The new elementary through secondary Social Studies Program, through an emphasis on citizenship and identity, provides opportunities for students to explore multiple perspectives on the use, distribution, and management of resources and wealth. Students at the senior secondary school level also critically consider the political, social, and environmental implications of resource use and technological change within the contexts of globalization, nationalism, internationalism, and political and economic ideologies.
62. The Department of Education in Nova Scotia provides parents with information on what their children will be learning in their Social Studies program in the first four years of elementary school. Social Studies is described as the course that promotes children's growth as individuals and helps enable them to become active and contributing citizens of Canada. Six important areas of study are outlined for exploration in the Social Studies program – understanding the rights and responsibilities of citizenship; understanding and valuing diversity; establishing relationships with individuals, groups, and societies; needs and wants in terms of economics; people, places, and environment as part of geography; and time, continuity, and change in history.
63. In Quebec, the *Training Program for Quebec Schools* (Programme de formation de l'école québécoise) facilitates linkages with education for sustainable development. All the programs from elementary through secondary school reflect the five key education themes, which are health and well being, orientation and entrepreneurship, media awareness, environment and consumerism, and citizenship and living together. In the development of these themes throughout the curriculum, all aspects of sustainable development are integrated into the classrooms. Programs in science and technology contribute particularly through their focus on education related directly to the environment.
64. British Columbia has committed to the inclusion of a sustainable development message within its curriculum. To this end, new courses such as Resource Sciences 11 and 12 as well as Social Justice 12 will include ESD topics. ESD is currently embedded within a number of British Columbia courses such as science and social studies.

Elementary and Secondary Courses and Activities related to Education for Sustainable Development

65. One Nova Scotian school board, Annapolis Valley Regional School Board, has introduced several initiatives that they link to the principles of the Decade of Education for Sustainable Development. These include participation in the *Clean Nova Scotia Toward a Brighter Future* project aimed at conserving energy and water usage in schools, as well as projects encouraging the reduction of paper usage. A Department of Education project implemented in Annapolis Valley Board supported the improvement of school grounds based on environmentally sound practices and low maintenance landscaping.

66. In 2008, the Quebec Ministry of Education, Recreation and Sports will implement a new ethics and religious culture program in elementary and secondary schools. Both the ethics and religious portions of the program are related to the values and broad definition of ESD, as the students will:
- Recognize different ways of viewing life, relationships with others, and the place and role of human beings in the world
 - Reflect on values (freedom, equity, equality, justice, respect, integrity, etc.) and social prescriptions (laws, rules, regulations, etc.)
 - Take a reflective position with respect to problem situations in which different values are at stake or choices have to be made
 - Make choices based on the common good, get involved, and act towards others autonomously and responsibly
 - Become open to religious diversity and develop attitudes of respect, tolerance, and openness towards it.
67. As the Nunavut Department of Education sets out to build schools within the context of *Inuit Qaujimagatuqangit*, mentioned above, one of its basic principles embraces the concepts of stewardship and environmental well-being. The document *Inuuqatigiit: The Curriculum from the Inuit Perspective* lays the foundation for education in Nunavut by stressing the very specific and unique set of relationships by which Inuit have lived. The fundamental belief is that the connectedness that individuals feel, both to each other and to their environment, ultimately determines their character and their value to the community. Sustainable development in its broadest definition is a core value of Inuit life and thus is becoming the foundation of education in Nunavut. Much of the Nunavut curriculum is adopted from Alberta, but a number of courses are locally developed. One example is the grade 12 General Science course, based on the reality of community life styles in the North that promote a close interconnection between the environment and its inhabitants. The course is structured to provide a better understanding of the environment as the basis of community well-being and environmental sustainability, in addition to using community-based resources such as Elders as sources for learning.
68. In the Northwest Territories, a new curriculum for elementary school science and technology introduced sustainability as one of the core concepts. To achieve this, teachers are putting greater emphasis on relating science and technology to each other, integrating the technological and scientific accomplishments of Aboriginal and other ancestors, and linking the learning to the world outside the school and the need for sustainable development. The goal is to have students recognize that science and technology are not just school subjects but are also fields of knowledge that affect their lives, communities, history, culture, and the world.
69. In 2005-06, Manitoba Education, Citizenship and Youth partnered with Manitoba Hydro to establish *Education for Sustainable Development Grants* for schools to promote professional learning for sustainability in classrooms by supporting schools in which teachers want to work together to plan and teach sustainability focused units. The priority areas include an extensive list of sustainability topics that reflect those in the UN Decade of Education for Sustainable Development. The objectives of the grants are to:

- Support schools in their efforts to help students acquire the knowledge, skills, values, and life practices that contribute to a sustainable future
 - Contribute to exemplary practice in education for sustainable development
 - Provide students with opportunities to make decisions and analyze sustainability issues and to participate in action aimed at achieving a sustainable future
70. The Centrale des syndicats du Québec (CSQ), which represents some 145,000 members including more than 100,000 educators, has brought more than 1,000 Quebec schools into its Bruntland Green School (BGS) movement. Community centres, colleges, kindergartens, and a credit union have now joined the BGS movement. A school is designated ‘green’ because it cares about the environment and ‘Bruntland’ because it takes action that involves sharing, cooperation, equity, solidarity, respect, peace, and human concerns, among other values. These are the major concerns that were discussed in the Bruntland Report, entitled *Our Common Future*, produced by the World Commission on the Environment and Development in 1987, which was chaired by Gro Harlem Bruntland. The BGS movement aims for a world that is environmentally friendly, peaceful, united, and democratic. A BGS is a school that follows the six R’s for a sustainable future – reducing consumption of resources, reusing things, recycling things, rethinking value systems, restructuring economic systems, and redistributing resources.
71. With funding from the J.W. McConnell Family Foundation, and secretariat and program support from the Canadian Teachers’ Federation and the Centrale des syndicats du Québec, a program called Green Street/Ma rue verte has been set up to actively engage students and teachers in environmental learning and sustainability education. The program links schools in Canada to reputable environmental education organizations across the country. The aim is to provide credible, accessible, and affordable programs that are relevant to students’ concerns, curriculum-linked, encourage a sense of personal responsibility for the environment, foster a commitment to sustainable living, and promote an enduring dedication to environmental stewardship.
72. In 2005, Green Street/Ma rue verte expanded its program themes to include broader issues related to the environment and sustainability such as lifestyles and sustainable consumption, food and agriculture, peace and human rights, human health and the environment, governance and citizenship, sustainable urbanization and transportation, and Indigenous and local knowledge. These new themes were developed through reference to the documents for the UN Decade of Education for Sustainable Development and youth priority concerns reported in a 2002 survey by the United Nations Association in Canada. Green Street/Ma rue verte has set up benchmarks for excellence in environmental learning and sustainability and student engagement. The criteria relate to these current themes, program design and content, pedagogical methods, mechanisms for long-term impact, and marketing, communications, and evaluation. Any program that Green Street/Ma rue verte recommends to schools must meet all or most of the stringent benchmarks.

73. BC Hydro, the electricity utility in British Columbia, has developed comprehensive energy conservation programs and educational resources for students in kindergarten to grade 12. The programs teach energy efficiency and sustainability and connect conservation activities in the classroom with the larger school community. The utility brings an innovative approach to program delivery, working with multi-age participants in school districts throughout the province. BC Hydro has delivered programs to over 1,800 teachers and 900 schools. The utility has delivered 14,000 hours of in-service training to students, teachers, and school district administration. BC Hydro's secondary school program matches students in grades 10 to 12 with a mentor from the school district facilities department. Together they audit school buildings and develop recommendations for the school board of trustees concerning energy efficiency. Elementary students explore ESD through behaviour change campaigns and create short movies that are aired on local television. Schools have submitted over 500 movies, with energy conservation and ESD themes, which are showcased in the local community. The new primary resource for grade 2 will be delivered through teacher in-service training throughout BC. BC Hydro's education programs have three broad goals:
- To educate students and the school community about the link between energy use and the need to conserve resources for the future
 - To explore issues of sustainability, stewardship and the environment
 - To provide opportunities for students to demonstrate leadership, teamwork, and citizenship through energy conservation campaigns.

Postsecondary Education

74. Education for sustainable development is included in university and college/institute programs across the country. The database of the Association of University and Colleges of Canada lists well over 100 degree, diploma, and certificate programs in both French and English under the heading of Environmental Science. Numerous other programs can be found under other search terms related to sustainable development as courses are found in numerous faculties, including science, education, social sciences, political sciences, arts, environment, and architecture. The Association of Canadian Community Colleges lists more than 100 diploma, applied degree, and certificate programs related to the environment, including Environmental Protection Technology, Environmental Conservation and Reclamation, and Conservation Science. In addition, there are a number of programs dedicated to Community Development. Only a very few examples of postsecondary programs are included in this paper. Much more information on the various institutions and their offerings can be found through the web sites of the Association of Universities and Colleges Canada and the Association of Canadian Community Colleges.
75. A June 6, 2007 article in *The Globe and Mail*, reported that applications to environmental programs – including science and engineering, as well as programs in sustainable resource management, environmental policy, and even green tourism – have increased dramatically for the 2007-2008 term, even doubling at some institutions. Some of the program examples included in the article are:

- At Dalhousie University in Nova Scotia, students in any faculty may now take environmental studies as their minor, a choice that makes this the second most important topic of study for them.
 - McMaster University in Ontario is launching an energy technologies program focusing on renewable energy technology
 - The faculty of civil engineering at Queen's University in Ontario has added a mandatory first-year course called humanitarian engineering. At Queen's environmental science department, professors have been hired to teach economics and philosophy with an environmental focus and courses in urban and rural planning have been added.
76. Colleges and institutes across Canada are producing numerous innovative programs that meet industry demand for qualified professionals in the environmental sustainability fields. For example, Seneca College's Urban Sustainability Program, which was recognized with the prestigious Yves Landry Award, combines skill training and environmental education for students in Civil Technology, Building Systems, and Fire Protection Technology programs. Urban sustainability education, in which the economic performance of urban regions is aligned with environmental stewardship, aims to ensure that graduates will be able to demonstrate and practice awareness of the environmental applications of their actions as skilled workers while pursuing an organization's economic success. George Brown College, also in Ontario, offers the only Bachelor of Applied Technology Degree in Construction and Environment, Regulations and Compliance. SAIT Polytechnic in Alberta houses the EnCana Environmental Technology Centre, providing students with a solid foundation in environmental work, both in field operations and in the laboratory.
77. Postsecondary environmental programs in British Columbia cover all areas of the environmental industry — from environmental protection to environmental education, communications, and research. Twenty-one of British Columbia's 26 public postsecondary institutions offer a wide range of academic and career programs related to many aspects of sustainable development at the certificate, diploma, undergraduate, and/or graduate level. The Environmental Programs Articulation Committee supports the development and integration of curriculum and instructional materials at the postsecondary level related to the sustainability of the environment. This committee collaborates with stakeholders, including representatives of relevant provincial ministries, federal departments, and nongovernmental agencies, as well as the Ministry of Advanced Education, the Ministry of Education, and public schools.
78. Renowned Canadian environmentalist and artist, Robert Bateman, has donated an extensive collection of his original artworks, prints, photographs, and archival material to be housed in the Robert Bateman Art and Environmental Education Centre at Royal Roads University in British Columbia. The building also houses the Canadian Centre for Environmental Education, which offers education, training, professional development, and accreditation for members of the environmental professions, including the delivery of an on-line university certificate program in environmental practice. Established in March 2006, the Centre is a partnership between Royal Roads University and the Environmental Careers Organization of Canada.

79. Also in British Columbia, Thompson Rivers University's Masters of Science in Environmental Science provides an integrative, multi-disciplinary approach to the study of the environment. It is a thesis-based degree with three areas of specialization: Ecology and Evolution; Physical Sciences; and Policy and Management. Building on the broad range of faculty expertise, students are trained to approach specific sub-disciplines using techniques ranging from molecular techniques to ecosystem ecology and policy, management, and ethical considerations. The university is well located to study environmental issues because of its proximity to a wide variety of diverse regional ecosystems including rare native grassland ecosystems, freshwater wetlands, and a rich diversity of forested ecosystems.
80. At the University of British Columbia, the Resource Management and Environmental Studies (RMES) is the interdisciplinary graduate program at the Institute of Resources, Environment and Sustainability. The RMES program's research activities address a range of topics related to land management, environmental assessment, policy analysis, coastal zone management, fisheries management, agroforestry, water resource management, hydrology, energy, negotiation issues, risk perception and assessment, issues of governance, science and policy, and community development. The program's aim is to integrate the socio-economic (political) and biophysical (ecological) approaches to resource and environmental issues.
81. The University of Northern British Columbia's Natural Resources and Environmental Studies (NRES) Graduate Program is primarily concerned with the theme of People and The Environment. The NRES Graduate Program houses four degrees built on an integrative suite of core courses, such as the Masters of Arts NRES program with streams in Geography, Environmental Studies, and Tourism and the Masters of Science NRES program with streams in Biology, Environmental Science, Forestry, Geography, and Recreational Resource Management. This structure encourages students to acquire disciplinary expertise in an interdisciplinary context.
82. Simon Fraser University developed its Master of Environmental Toxicology program to respond to the increasing damage that is inflicted on the environment. At the inception of the program, there were very few formalized training programs concerned with toxicology in Canada. The main objectives of the program are: to meet the need for additional trained toxicologists; to facilitate communication between toxicologists and other environmental scientists; and to develop and maintain high standards of research and education in toxicology.
83. The University of Quebec in Chicoutimi offers a specialized program for Éco-Conseillers (Eco-Advisors), inspired by the training for Eco-Advisors offered in France and Belgium. The Eco-Advisor is described as a professional in sustainable development who strives to integrate the principle of SD into the discussions and decisions of government, organizations, businesses, and individuals. The program develops advisors who can direct the multidisciplinary teams that are most effective for SD and communicate with the public. The university also hosts a Chair for Eco-Advisors with responsibilities for research and communication, maintenance of international links including those with UNESCO, and the provision of professional training and continuing education for environmental advisors.

84. The University of Quebec in Montreal offers a number of bachelor, masters, and doctoral level programs in environmental education, including a short program that provides the educators and trainers with the capacity to teach about the environment in both formal and non-formal settings, including schools, businesses, museums, and site interpretation centres. The courses cover pedagogical techniques and environmental action, highlighting the analysis of socio-economic realities and strategies for change.
85. A very small sample of the advanced degree university programs on aspects of sustainable development includes:
 - A Masters of Resource and Environmental Management at Dalhousie University in Nova Scotia
 - A Masters of Business Administration in Community Economic Development, offered jointly by Lakeland College in Alberta and University College of Cape Breton in Nova Scotia.
 - A Masters of Science in Sustainable Energy Development offered jointly by the University of Calgary in Alberta and the Universidad San Francisco de Quito in Ecuador designed to expose Latin American and Caribbean professionals to sustainable energy development principles
 - A Masters of Environmental Studies at the University of Guelph in Ontario, with a special program for students interested in sustainable development.

The Government of Canada – Non-Formal Learning

86. As mentioned above, the Government of Canada emphasizes education in its integration of sustainable development throughout its departments and agencies. This focus has resulted into numerous tools and training materials both for federal employees and the Canadian public.
87. Working in partnership with nine other departments of the Inter-departmental Network on Sustainable Development Strategies and the Canada School of Public Service, Health Canada negotiated an agreement for the development and delivery of sustainable development training materials. Health Canada, Environment Canada, Natural Resources Canada, Foreign Affairs and International Trade Canada, and Treasury Board Secretariat are among participating departments that formally committed to the project.
88. The one-day course includes a brief history of sustainable development (SD) in public policy, defines associated principles and values, and orients analysts and planners to practical tools for implementing SD. Participants are expected to emerge with a clear understanding of what SD means and the ability to apply tools such as an SD Lens to prospective policies, plans, and programs. The training materials target planners and analysts at senior levels in the federal government.
89. Foreign Affairs and International Trade Canada (DFAIT), through its newly established Energy Secretariat, committed in *Agenda 2009*, its fourth *Sustainable Development Strategy*,

to develop a course that addresses the interface between international energy issues and foreign policy. The Energy Secretariat, working with the internationally respected Canadian Energy Research Institute, developed a pilot course entitled *Energy Security: An Introduction to Energy Issues*, which is being offered in June 2007 to Canadian diplomats serving abroad as well as DFAIT officials in Canada. The course objective is to raise energy/climate change/environmental literacy. Other federal government departments were engaged in developing and offering the course, including Natural Resources Canada, Environment Canada, National Defence Canada, Finance Canada and the Privy Council Office.

90. DFAIT is also training its employees on a variety of topics related to sustainable development to ensure that regulatory and legislated requirements are met and communicated to staff. The Department, through the Sustainable Development Division and the Centre of Learning for International Affairs and Management, has developed three virtual campus courses – *Introduction to Sustainable Development*, *Project Environmental Assessment*, and *Strategic Environmental Assessment*. The courses are self-directed and on-line to ensure they are accessible to all DFAIT staff around the world. The courses seek to inform DFAIT employees about SD concepts and relate the concepts directly to their jobs and departmental commitments and processes. The Foreign Service Development Program assigns credits for the successful completion of the courses.
91. Transport Canada's Sustainable Development Capacity Course entitled *Towards a Sustainable Tomorrow – Concepts of Sustainable Development and How They Are Applied at Transport Canada* is designed as a workshop to help Transport Canada managers and staff gain a solid understanding of sustainable development principles, processes, and implications. The course offers an in-depth look at sustainable development from its origin to its current applications at Transport Canada and provides the knowledge and tools to implement the Department's mandate for sustainable development and to integrate social, environmental, and economic considerations in day-to-day responsibilities.
92. Human Resources and Social Development Canada has set up partnerships with a number of ministries in the British Columbia Government, a community college, and mining associations to test the impact of a new culturally- and industry-specific skills development approach for Aboriginal youth living in remote communities. Over the next three years, in northern British Columbia locations, the project will examine the impact on 100 Aboriginal youth of receiving on-the-job training in prospecting and reclamation of lands. The project features training, a field program, work experience, and culturally sensitive activities focused on the interests of local First Nations communities.
93. Agriculture and Agri-Food Canada's Agricultural Policy Framework offers a range of services geared towards business planning and education for sustainable development in the agriculture industry. For example, the Farm Business Assessment offered through the Canadian Farm Business Advisory Services (CFBAS) helps farmers establish short-term business goals, review past records, the current situation, and determine options in meeting profitability goals. Another CFBAS component, the Specialized Business Planning Service, offers assistance to farmers to hire a consultant to help in preparing specialized plans needed for their farm businesses. The plans can be related to diversification, marketing, human resources, expansion, risk management, or succession – all with the objectives of increasing

profitability and viability of their farm business. These services are offered as a response to research that showed that farmers would find them beneficial in the current skill and knowledge intensive agriculture industry. Awareness campaigns about the importance of good business planning in the industry have also been undertaken.

94. Another Agriculture and Agri-Food Canada's program, the Canadian Agricultural Skills Service, provides funding and practical assistance to involve farm families and beginning farmers in educational programs that lead to increased opportunities for profitability and provide them with more choices about sources of income. Eligible participants receive: an assessment that helps them identify their strengths and skills; an individual learning plan which outlines courses or workshops to take based on the participants' goals; and funding to support credit-based programs, on-the-job training and short courses. This Service works to improve the profitability and the long-term viability of farms in Canada, as well as establish solid foundations for sustainable development.
95. Natural Resources Canada, in partnership with the Prospectors and Developers Association of Canada, the Mining Association of Canada, the Canadian Aboriginal Minerals Association, and Indian and Northern Affairs Canada has produced the *Mining Information Kit for Aboriginal Communities*. This new educational tool is to be used by Aboriginal communities and leaders, educators, governments, and industry to strengthen the ability of Aboriginal peoples and communities to understand all aspects of mining development and identify the many opportunities that mining can bring to communities. The Kit includes a description of the activities at each stage of the mining sequence, the environmental and social impacts, examples of concrete opportunities for community involvement, and explanations of potential contributions to building sustainable communities. The Kit was released in 2006, and has attracted interest from Latin America, Northern Europe, Asia, and Australia. It has been designed as a tool to encourage capacity building and reinforce relationships between industry and Indigenous communities.
96. In 2004, Western Economic Diversification Canada approved funding to Northlands College in Saskatchewan for the delivery of two types of Water and Wastewater Certification Programs. By law, every municipality and owner of a waterworks or sewage works must ensure that the operation, repair, and maintenance of those works or sewage works are under the direction of an operator who is certified by education, experience, and examination at a level corresponding to the facility classification of those works. These programs have implications for improved environmental protection and health and safety.
97. Indian and Northern Affairs Canada has committed to building a culture of sustainability within the department and the First Nations and Inuit communities it serves. The Sustainable Development Division has put together a National Sustainable Development Working Group that involves every sector and region in the department in the implementation of the departmental SD Strategy. The strategy commitments are integrated in the departmental reporting process so that the SD activities become embedded in daily operations. The Working Group advances sustainable development through events such as Environment Week and Aboriginal Awareness Week and the distribution of promotional material. The Working Group is also developing a long-term communications plan based on surveys that probed current levels of awareness about sustainable development.

The Government of Canada – Enhancing Public and Corporate Awareness

98. Located in the former United States pavilion at Expo 67 in Montreal, Environment Canada's Biosphere is a premier venue for the exchange of information, education, and ideas on major environmental issues related to water, air, climate change, sustainable development, and responsible consumption. An environmental museum, the Biosphere offers permanent and temporary exhibits, public events, and informative and entertaining guided activities to its more than 60,000 annual visitors. It also offers a youth program for school and after-school groups, with educational activities that can be carried out at the museum, in the classroom, in a natural setting, or via distance education.
99. The Biosphere has established the National Centre for Expertise in Environmental Education and Engagement, which provides training, capacity building, research, evaluation related to viable communities, and environmental education and engagement to Environment Canada employees, its partners, teachers, the Canadian museum network, and other groups. Through its Centre for Responsible Consumption, the Biosphere has developed a number of initiatives to accelerate the adoption of responsible behaviour and to promote environmental literacy among its visitors, including Green Christmas on responsible consumption, Formula Green on sustainable transportation, and the wind event on renewable energy.
100. A new publication from Transport Canada, *Commuter Options: The Complete Guide for Canadian Employers*, provides guidance for planning and implementing a commuter options program in the workplace. Based on years of international experience, and featuring a focus on Canadian examples and resources, this guide covers the full range of ways that commuting can be made easier, healthier, and less expensive. Business groups, government agencies, or non-profit organizations can use the materials to deliver a one-day training workshop to interested employers. The *Commuter Options* guide and workshop are designed for use by small, medium, or large businesses or organizations anywhere in Canada, in both the public and private sectors.
101. Transport Canada's *Urban Transportation Showcase Program* supports innovative municipal demonstration projects designed to attract Canadians to sustainable transportation options. To encourage the replication of successful model shift practices, the Program's Information Network uses learning events, awards programs, a library of case studies, and other web-based resources to give practitioners and decision-makers information and tools to help implement sustainable transportation projects and policies.
102. Since 2005, 15 federal agencies and departments, including Environment Canada, have worked together with about 80 organizations from the Montreal community as part of the City of Montreal's *Plan for Sustainable Development*. The activities are part of the sustainable development strategies of the federal departments and agencies to improve air quality, reduce greenhouse gases, ensure the quality of residential environments, practise responsible resource management, and adopt good sustainable development practices. This partnership has achieved its objectives in joint sustainable development projects and in ensuring public engagement. Federal agencies actively participate in the sharing of expertise and knowledge via the exchange network implemented as part of the Plan, as speakers and experts on eco--

friendly meetings, water management, ecological purchases, environmental management systems, sustainable transit, energy efficiency, and residual materials. Public awareness campaigns are key components of the 2007-2009 phase of the Plan.

103. The Federal Greening Network for Quebec is an exchange forum that has existed for 11 years between 25 federal agencies and departments in the Quebec region. One of its ongoing projects, the *Paper Management Greening Plan*, seeks to reduce the impact of government activities on the environment. For example, between 1983 and 2003, paper use more than doubled. In 2007, proposed changes to the paper purchasing process in federal offices are to include environmental performance indicators. At the same time, the life cycle of paper in offices is being analyzed to ensure reuse, recycling, and disposal in an environmentally friendly manner, accompanied by workshops on reducing paper use.
104. The World Urban Forum (WUF) is an initiative of the United Nations' Human Settlements Programme. Held every two years, the WUF provides a forum for governments, local authorities, nongovernmental organizations, and other experts on urban issues from around the world to discuss the challenges of urbanization. In June 2006, the Government of Canada hosted WUF3 in Vancouver, British Columbia. Ten thousand participants from more than 100 nations came to discuss international cooperation in urban development and sustainable urbanization and to develop models to address urbanization issues in cities around the world. Western Economic Diversification Canada played a key role in the forum, including providing support, with others, for a uniquely Canadian body of research about sustainability, urbanization, and related issues that provided a useful backdrop for discussions leading up to the Forum.
105. In preparation for WUF3, Western Economic Diversification Canada funded 43 projects, from 2004 to 2006. Projects focused on capacity building and research and included the Regional Vancouver Urban Observatory project, a Global Sustainability Solutions Exchange, and a *Green Guide*, highlighting case studies and demonstration projects exemplary of Vancouver's urban sustainability.
106. In 2005, Western Economic Diversification Canada provided funding to Red River College in Winnipeg, Manitoba to assist in developing a solar powered race car to participate in the North American Solar Race Challenge. The purpose of the race is to push technological boundaries and promote the development of skills, expertise, and energy efficiency among today's students, so that as graduates they can become the energy efficiency leaders of tomorrow.

Active Community Learning

107. Not-for-profit, nongovernmental, and civil society organizations lead much of the public and community based activity linked to sustainable development. There is always an education component to these initiatives – whether through purposeful education with children, youth, and adults or less formal learning through public awareness campaigns and project involvement.

108. In Yukon, government funding has made been available to assist nongovernmental organizations with efforts to inform and educate the public by promoting environmental awareness and education, resource planning, and sustainable development. The funds are made available by the Department of the Environment and can be used for educational camps, workshops, brochures, surveys, video productions, public lectures, conferences, web site development, and similar kinds of activities.
109. As a tool for environmental groups in Yukon that are looking for project funding, the Ministry of the Environment compiled a comprehensive list of funding sources. Included in the 2005 list are 10 Yukon government sources, 10 federal government sources, 20 funding possibilities with NGOs and foundations, and 15 private sources. Among all the funding sources, the range of eligibility is very wide – non-profit organizations, schools, community associations, First Nations, municipal governments, university researchers, research foundations, health and educational institutions, and charitable organizations. Funding can be for restoration and protection of the environment, wildlife habitats, environmental awareness, education programs, cultural diversity, implantation of Aboriginal ecological knowledge, community capacity building, recycling programs, and many other initiatives.
110. The New Brunswick Environmental Trust Fund awarded funding to about 40 public-education oriented projects in 2007-2008. These included the promotion of recycling, summer camps based on conservation, stewardship, symbiotic relationships, and sustainable resources, development of an in-class resource kit matched with a wetland field trip, public education about illegal dumping, information on air quality initiatives for households and rural workplaces, and environmentally friendly lawn and garden maintenance. Funding was also provided for almost 40 other projects related to school-based and professional education.
111. ENvironnement JEUnesse or ENJEU (Youth and Environment) is the network of youth engaged in environmental issues in Quebec. This not-for-profit organization is active in education related to the environment in the formal education systems, in addition to non-formal and informal education, institutions, and businesses. The goal is to stimulate the development of an environmental conscience and critical analysis in youth so that their actions as responsible citizens lead to a sustainable future. For the coming year, the Action Plan highlights the development of regional branches throughout Quebec.
112. YOUCAN is an organization focused on national and international youth-led initiatives in non-violent conflict resolution and violence prevention, both nationally and internationally. They provide training for young people who wish to learn how to peacefully resolve the conflicts they face in their lives and communities. The intervention methods include peer helping, mediation, facilitation, peace circles, and cross cultural conflict resolution. At its 2006 International Youth Symposium, over 400 youth from across Canada received training in conflict resolution from other youth. The Canadian Commission for UNESCO organized workshops at this event – one of which described the Canadian Coalition of Municipalities Against Racism and Discrimination and the other the Decade of Education for Sustainable Development.

113. Équiterre is dedicated to building a citizen's movement by promoting individual and collective choices that are both environmentally and socially responsible. Through its four programs – ecological agriculture, fair trade, sustainable transportation, and energy efficiency – Équiterre has developed projects that encourage individuals to take concrete action for positive change. It was founded by a group of young people in Quebec who participated in the events leading up to the Earth Summit in Rio de Janeiro.
114. The International Centre for Sustainable Cities (ICSC) was founded in British Columbia as a partnership involving three levels of government, the private sector, and civil society organizations. The ICSC undertakes practical demonstration projects that show how urban sustainability can be implemented. Demonstrations deal with issues such as solid waste, water, sewage, land use, transportation, housing, energy efficiency, social conflict, and poverty. ICSC also creates and supports peer networks to share learning and disseminate ideas.
115. The David Suzuki Foundation works to find ways for society to live in balance with the natural world. The Foundation has four program areas:
- Sustainability – through working with different levels of government, business leaders, academics, and the public ensure that Canada adopts policies that reward activities that reduce waste and pollution, conserve energy and resources, and protect our natural capital while maintaining our quality of life
 - Oceans and sustainable fishing – biologists and researchers focus on habitat conservation, fisheries management, and sustainable aquaculture to conserve precious water resources for future generations
 - Climate change and clean energy – promoting sustainable solutions to energy needs, from renewable sources like wind and solar power, to energy efficiency and public transportation
 - Nature Challenge – helps individuals make sustainable decisions about their homes, food choices, and mobility in a city by researching and listing on the web site the 10 most effective actions that individuals can take to protect nature.

The Canadian Commission for UNESCO

116. The Canadian Commission for UNESCO (CCU) has been particularly active in education for sustainable development, through extensive collaboration with government, NGOs, and civil society. One of the important activities of the Canadian Commission for UNESCO is International Learners' Week in Canada. With a focus on adult education and literacy, the Week promotes education as a fundamental human right. International Adult Learners' Week (IALW) was celebrated for the third time in Canada from September 8th to 14th 2005, with the date of the launch coinciding with International Literacy Day. The theme of the 2005 event was *Building Sustainable Communities*, with a particular goal of demonstrating the linkages between adult learning and building sustainable communities that value diversity and human rights.
117. Forty partners were actively involved with the Canadian Commission for UNESCO for IALW 2005, comprising the departments and ministries responsible for education in every province

and territory, representatives of national nongovernmental adult literacy organization, and partners from workplace training, continuing education, education for sustainable development, and education for human rights. The IALW 2005 strategy had four key components: a widely-distributed Information Kit; a pan-Canadian communications plan; an IALW web page on the Canadian Commission for UNESCO site; and local events by the partner organizations. The materials were available in French and English and twenty-five thousand copies were distributed. Over 100 local events in celebration of IALW and Literacy Day were held across the country, including literacy lunches, workshops, award presentations, and open houses.

118. Another CCU project that raises awareness and encourages action about sustainable development is the Associated Schools Project Network, as part of the wider UNESCO ASPnet. Children, youth, and staff in schools took part in pilot projects that helped them become more aware of vital world issues including xenophobia, human rights abuses, poverty, and cultural diversity. Since 2001, the Network in Canada has doubled in size and, in 2005, after a two-year pilot project, the Commission officially designated the first ASPnet schools in Canada. Manitoba now has 12 ASPnet schools and one adult education centre to provide a forum for the promotion of UNESCO ideals, global citizenship, and social justice, in addition to student leadership and provincial, national, and international networks. The Manitoba ASPnet works through curricular and extra-curricular activities, including raising money to combat poverty and organizing events on war-affected children. The ASPnet School in Saskatchewan won an award for its involvement in activities such as assisting in the preservation of wildlife habitats and raising money for tsunami relief. In Alberta, the schools are particularly interested in questions of respect for diversity, the prevention of discrimination and bullying, and the peaceful resolution of conflict. The ASPnet in New Brunswick has an exchange program with a school in Burkina Faso and an active environmental program.
119. To support the Decade of Education for Sustainable Development, the Canadian Commission for UNESCO has been organizing workshops and presentations at events across Canada. At the 2006 Natural City Conference, Water and Education for a Sustainable Future, the Boreal Kids Education Project, the International Peace Educators Conference, and many other events, CCU presented on education for sustainable development, as well as undertaking other educational and organizational roles. At the Leading Edge Conference on sustainability, environmental monitoring, and biosphere research, the Commission sponsored the academic and community research presentations. The Commission also collaborated with Taking IT Global to present a workshop on youth engagement in the fight against racism and discrimination at an anti-racism conference.
120. On a continuous basis, the Commission works with its many partners and members of the Sectoral Commissions to promote UNESCO's Conventions, recommendations, and projects throughout Canadian society. Through meetings, conference presentations, workshops, and other communication strategies, the Canadian Commission for UNESCO works at all levels of government and civil society to introduce and garner support for UNESCO and its central role in the Decade of Education for Sustainable Development.

Equip Educators with the Competence to Include Sustainable Development in Their Teaching

121. The pre-service education of teachers is provided by the postsecondary education sector in Canada, with each institution devising its own program offerings. Some teacher training programs include information on issues related to sustainable development in specific courses, such as environmental education, outdoor education, or diversity and equality in the classroom. Sustainable development is also addressed through special lectures, workshops, summer programs, and other forms of pre-service training for teachers in Canada. The teachers' exposure to the themes depends on which institution they are attending, which specialty they are following, and their individual interests.
122. The ministries and departments of education, the teacher associations and unions, and school boards, most often in cooperation with non-profit organizations, provide in-service training of teachers in issues of sustainability. According to a recent report, *Environmental Education in Canada*, prepared by the Canadian Environmental Grantmakers' Network, most provinces have volunteer associations or networks of teachers that support environmental education, through teacher professional development and networking. For example, the Environmental Educators of British Columbia Society is a network for environmental educators across the province. The group facilitates networking between formal and informal environmental educators and improves public access to current ideas, information, and curriculum resources in the multi-disciplinary field of environmental education.
123. Manitoba Department of Education, Citizenship and Youth's ESD priorities for on teacher professional development. The Department has developed ESD-focused material, delivered numerous information-sharing presentations to schools during the 2006-2007 school year, and conducted workshops at Summer Institutes focused on ESD teaching and learning. The Department also provided financial incentives to school divisions and schools to advance ESD. In 2006, the Department introduced Education for Sustainable development Grants to school divisions to promote the teaching and learning of sustainability in classrooms.
124. Inside Education, (formerly the Friends of Environmental Education Society in Alberta or FEESA) brings together a group of individuals from government, industry, education, and non profit organizations to educate people about the range of values associated with the relationship between a healthy environment and a productive economy. Inside Education works collaboratively with partners with wide-ranging perspectives to provide relevant, engaging, bias-balanced, and scientifically sound support tools and learning experiences for educators, students, and the public. Professional development programs are designed to enhance teacher understanding of forest, water, energy, and environmental topics. The programs vary from one-day sessions to ten-day summer institutes with tours, interactive demonstrations, discussions with academics and conservation groups, and presentations from government and industry. Educators are fully funded to attend the sessions, including travel, accommodation, costs of substitute teachers, and extensive teaching resources.

125. The Network for Environmental Education is an initiative of the Calgary/Banff Chapter of the Canadian Parks and Wilderness Society (CPAWS) a not-for-profit, nongovernmental organization in Alberta. The CPAWS Education team helps teachers and students take informed action on important conservation issues such as endangered species or the protection of Alberta's threatened ecosystems.
126. The Canadian Network for Environmental Education and Communication (EECOM) is a national, bilingual, charitable network for environmental learning. EECOM's mission is to work strategically and collaboratively to advance environmental learning in order to ensure that Canadians are environmentally literate, engage in environmental stewardship, and contribute to a healthy future. EECOM works with provincial groups and multiple sectors to support and develop competency in educators, communicators, learners, and consumers, and builds capacity for environmental learning and sustainability through strategic alliances with members and partners. EECOM is multi-disciplinary, multicultural, and multi-sectoral. As a comprehensive network and national voice for environmental education, EECOM strives to strengthen and improve environmental learning in Canada, providing a vehicle for existing national, provincial, and local environmental learning organizations and individual from various sectors to share ideas, programs, research, resources, events, and services.
127. The Association québécoise pour la promotion de l'éducation relative à l'environnement (Quebec Association for the Promotion of Environmental Education), also known as AQPERE, is a not-for-profit organization that includes both individuals and organizations such as schools, museums, nongovernmental organizations, and networks. AQPERE works to bring together people involved in education and training about the environment to encourage the exchange of ideas, the development of concerted action, and the sharing of information. Members are offered support for the implementation and dissemination of their activities.
128. The EYES Project, a not-for-profit organization built around the ideas of education/youth/environment/sustainability, is committed to promoting environmental and sustainability education, through the design and development of innovative professional development initiatives for educators and through engaging learning experiences for youth. They work collaboratively with practicing educators, students, and existing environmental education organizations to provide a meaningful context for emerging provincial sustainable development curriculum and policies, as well as for the programs and developments at the national and international levels. In 2006, the EYES Project organized a symposium in Quebec, *Voices for Sustainability Symposium for Educators: From Professional Development to Societal Transformation*. The main outcomes of the symposium, and a similar event held in British Columbia, were to build bioregional learning communities of educators committed to both teaching sustainability education and to rethinking sustainability in society, and the creation of a resource centre on ESD on the EYES website.
129. Learning for a Sustainable Future at York University in Ontario, mentioned in previous sections, has provided training to approximately 5,000 educators in workshops across the country and training for about 100 trainers in five provinces. The goals of the workshops for teachers are to identify opportunities in the curriculum to explore issues of sustainable development, identify relevant classroom resources to assist teachers in the exploration of

these issues, and provide the necessary professional development to alert teachers to the curriculum possibilities and the available resources. Workshop topics include tools for integrating sustainability issues into the classroom, the importance of ecosystems, water in a sustainable society, and climate change.

130. Learning for a Sustainable Future is also involved in a new program offered through the Sustainable Enterprise Academy at the Schulich School of Business, York University, which offers business executives a program to make them sustainability leaders in their enterprises. The Educators Academy on Sustainability, in which LSF plays a role, targets senior levels of the formal education sector in Canada in order to create champions for sustainability education throughout the education system. The Education Leaders' Seminar, piloted in October 2007, is designed as a 2-½ day intensive, residential, informative, and motivational event.
131. Green Street/Ma rue verte, also referenced above, provides a blog on *Teaching Environmental Sustainability* through which teachers share stories of how they tackled a local environmental issue, including their motivations, the contributions of their students, and their accomplishments. The blog provides an informal idea exchange and a record of successes in making a difference.
132. Training for environmental educators who work outside the education systems is also important. The Natural Step Canada is a non-profit organization that provides results oriented advisory and training services to help community and business leaders integrate social, environmental, and economic decision making into their operations. Among their clients have been the Town of Canmore in Alberta, the Halifax Regional Authority in Nova Scotia, and the Resort Municipality of Whistler in British Columbia. The Natural Step also offers a three-hour on-line course to help learners to access, understand, and apply sustainability concepts in strategic ways.

Ensure that Adequate Tools and Materials for Education for Sustainable Development are Available

133. The educational jurisdictions provide curriculum resources on sustainable development for their teachers, often through curriculum documents and web links to sites that are specialized in the topics being covered in a particular part of the curriculum. Many of the resources are developed through the ministry or department of education, other government departments, universities, NGOs, museums, and other public organizations. For example, Saskatchewan Learning has a database for Environmental Studies that has links to such sites as the Canadian Centre for Energy Information, Green Lane (the Internet resource from Environment Canada), and the International Institute for Sustainable Development. In Nova Scotia, teachers for Grade 8 Social Studies are linked to such sites as Citizenship and Immigration Canada, Atlantic Climate Change, and Canada and Peacekeeping.

134. In Nunavut, the document *Sanasimajut: A Summary of Teaching and Curriculum Materials Produced for Use in Nunavut Schools* cites the curriculum framework, the program of studies, and the program organization information, as well as the resources specifically developed for the Nunavut Studies and Environmental Science strands.
135. A web-based guide, EENorth - Environmental Education Resources for Northern Canada, has been made available with the support of the World Wildlife Fund and a leading Canadian bank. The site provides digital copies or information on availability for existing resources on environmental education in the three northern territories of Yukon, Northwest Territories, and Nunavut.
136. The Manitoba Department of Education, Citizenship and Youth has launched a web site dedicated to education for sustainable development. This site provides access to such documents as the recently-published *Education for Sustainable Development: A List of Titles with Suggested Uses for Senior 2 to Senior 4: A Reference for Selecting Learning Resources*. An additional title, *Education for a Sustainable Future: A Resource for Curriculum Developers, Teachers, and Administrators* has been published to help curriculum developers and educators integrate sustainability concepts into new and existing curriculum.
137. The Ontario College of Teachers publishes *Professionally Speaking*, a journal that offers a feature entitled Netwatch. The Netwatch archives provide extensive information on web sites that have been reviewed and recommended for teachers' use. Teachers are guided to such sites as Environment Canada's Green Lane, Oxfam's Cool Planet for Teachers, and EnviroLink. The strengths and specific contents of each site are highlighted in the reviews.
138. The Centre de ressources pédagogiques en éducation relative à l'environnement, also known as REP'ERE (Centre for Education Resources on Education for Sustainable Development) at the University of Quebec in Montreal offers more than 3,000 resources, including books, videos, games, CD-ROMs, training materials, web conferences, and consulting services, as well as the production and distribution of its own materials. Teachers, facilitators, guides, and other educators who work in schools, community centres, museums, interpretation centres, parks, and nongovernmental organizations can access the resource centre.
139. In Prince Edward Island, the Department of Environment, Energy and Forestry provides student and teacher resources through their web site. These range from a forestry colouring book to books and CD-ROMs on growing native plants and poisonous and medicinal plants to teaching kits and hands-on forestry training for teachers. In Yukon, the Department of Energy, Mines, and Resources has created a resource for secondary schools. The booklet, *Sustainable Agriculture in The Yukon*, covers agriculture, sustainability, and local and global environmental issues, as well as a learning activity in which the students role-play different perspectives to reach a decision about agricultural development.
140. The Pembina Institute, based in Alberta, pioneers practical, multi-stakeholder solutions to energy and environmental issues across Canada. GreenLearning is a learning resource and a web-based learning platform for innovative teachers interested in trends affecting students' future well-being, developed by the Pembina Foundation. GreenLearning provides resources

for parts of the Alberta, Ontario, and British Columbia curriculum and for specific topics such as climate change. Links are also made to resources such as videos, radio shows, and web sites of similar organizations. Another not-for-profit organization, the Canadian Parks and Wilderness Society provides resources for educators, including free lessons, activities, resources, web links to recommended web sites and research, and connections with the environmental education community.

141. The mandate of the Canadian Environmental Literacy Project (CELP) is to develop open-access curriculum materials in support of teaching environmental studies in universities, colleges, and secondary schools in Canada. The focus is on materials that address Canadian issues within local, regional, or international contexts. The modular materials can be used as they are or instructors can adapt them to fit specific needs. CELP, housed at Dalhousie University in Nova Scotia, has developed a consultative network to determine key educational topics and to work together to guide the development and evaluation of modular materials.
142. To serve educators both inside and outside of schools to promote global and environmental awareness among young people, Green Teacher publishes resources that include *Green Teacher*, a quarterly magazine full of teaching ideas for successful “green” teachers. The magazine offers perspectives on the role of education in creating a sustainable future, practical cross-curricular activities for various grade levels, and reviews of the latest teaching resources. Green Teacher also publishes resource books for teachers, including *Teaching about Climate Change: Cool Schools Tackle Global Warming*, *Teaching Green: The Elementary Years*, *Teaching Green: The Middle Years*, and *Teaching Green: The High School Years*.
143. Learning for a Sustainable Future has developed a searchable database for high-quality, peer-reviewed curriculum resources related to sustainable development. Teacher can search by subject, grade, province, territory, ESD keyword, and French or English. The database is called *Resources for Rethinking* and is to be launched this year. When the United Nations declared 2004-2015 the Decade of Education for Sustainable Development, it called upon all jurisdictions to review their educational programming as a means of preparing their citizens to meet mounting social, economic, and environmental challenges through informed decision making and active democratic civic participation. The Canadian Sustainability Curriculum Review Initiative, undertaken by LSF, is one of the Canadian responses to this call for action. The Curriculum Review Initiative identifies the fundamental concepts and related skills and values that should be included in formal curriculum policy, as well as the most appropriate instructional methods for learning about 12 key action themes. Each theme document is prepared to support education ministry personnel in re-orienting curriculum policy in all subject areas in all jurisdictions across Canada. The documents completed to date address Energy, Climate Change, Water, Food and Agriculture, Biodiversity, and Ecosystems.
144. Curriculum Services Canada (CSC), the pan-Canadian standards agency for quality assurance in learning products and programs, provides a formal review process for curriculum resources. Resources are evaluated for consistency with curriculum, content relevance and balance, current methodologies, bias and inclusiveness, and appropriate format. All recommended resources receive the CSC Red Seal of Quality, which means that materials are safe to use in

the classroom. Its service includes many resources that are linked to sustainable development and other key words that relate to ESD.

145. Institutions outside the schools can provide some of the most engaging resources. For example, the Prince of Wales Northern Heritage Centre in the Northwest Territories offers a wide variety of school programs and tours that involve hands-on activity and contact with the artefacts and real-life situations. Some of the topics focus on Aboriginal ways of life, archaeology, and the fur trade. The Royal Saskatchewan Museum hosts a *Youth Forum on Sustainability* for older teenagers and young adults, bringing teachers, students and experts together to take part in student-led projects around sustainability. Museums, national and provincial parks, heritage centres, marine centres, and similar sites in Canada all provide opportunities for children, youth, and adults to learn about sustainable development.
146. A final example of resources made available to schools provides an opportunity for truly active learning about sustainable development. In Prince Edward Island, the provincial government is offering 200,000 energy efficient light bulbs to schools at no cost for school fund-raising projects. Through this initiative, the students become more aware of the need for energy efficiency, they help spread the idea and one of the tools of energy efficiency, and all the money raised stays with the schools.

Promote Research and Development of Education for Sustainable Development

147. Research in education for sustainable development is largely taking place in universities in Canada. A variety of programs are mentioned to illustrate the diversity of the research centres and their priorities. Among the leaders in this are three universities with UNESCO Chairs that focus on education for sustainability and the environment and sustainable development.
148. York University in Ontario holds the UNESCO Chair in Reorienting Teacher Education Towards Sustainability. The UNESCO Chair is housed in the York Institute for Research and Innovation in Sustainability, which was established in 2004 to create an interdisciplinary, university-wide research institute that is a focal point for the sustainability-related activities of all eleven faculties at York. York has named sustainability as one of its four overarching strategic priorities for research. The UNESCO Chair has established a collaborative international network of over 35 teacher education institutions. This network provides a forum for teachers and educators to share their expertise and support efforts to reorient teacher education to address sustainability. This effort is largely focused on specialized ESD training for teacher-educators, teachers, and administrators in formal education systems.
149. At the University of Laval in Quebec, the UNESCO Chair in Sustainable Development applies an interdisciplinary approach to the study of ecological problems and to the development of policies that integrate environmental protection and development. The research focuses on sustainable management of natural resources by optimum use of environmental information, sustainable rural and urban development, and the ethics and policies of sustainable development linked to the environment.

150. At the University of Quebec in Montreal, the current UNESCO Chair in Environment and Sustainable Development is involved in research that looks at the implementation of sustainable development, of sustainable cities, and of environmental policy analysis. In international research, the focus is on the connections between science, public decision-making, and community involvement in environmental management, water management, and adaptation to climate change.
151. The University of Quebec in Montreal also has the Canada Research Chair in Environmental Education, funded through the Social Sciences and Humanities Research Council of Canada, with three main themes for research. In the educational milieu, the research explores how to institutionalize ESD and the relations among the environment, health, consumer behaviour, and science and technology. For communities, the questions focus on linking education for environmental health to the ecological development of a community and the role of community action as a tool and strategy for education. The research related to universities explores the pre-service and in-service education of teachers and the training of community educators for ESD.
152. The newly established Centre for Interactive Research on Sustainability at the University of British Columbia is dedicated to research, collaboration, and outreach that lead to workable solutions for the challenges of urban sustainability. It creates new knowledge and new solutions by collaborating between disciplines, among academic institutions, and among public, private, and non-profit sectors, and it reaches out to and engages other communities in long-term planning for a sustainable future. One of the research directions explores the development, application, and evaluation of innovative approaches in education, the arts, humanities, and social sciences for encouragement and integration of sustainable concepts and practices within multiple communities.
153. The Centre for Sustainable Community Development is a teaching and research unit of Simon Fraser University in British Columbia. The Centre's research focuses on finding practical, effective solutions for environmental, social, and economic challenges, as well as stimulating the study of sustainable community development. Major activities involve carrying out projects in partnership with communities and agencies outside the university, creating opportunities for professional development experience and programs for practitioners, and establishing working relations with similar centres internationally, particularly in developing countries.
154. The Environment and Sustainable Development Research Centre at the University of New Brunswick conducts research and training under contract or grant, working with industry, communities, and particularly the resource sector. The research focus at this time is on the causes of conflicts among stakeholders, developing tools for consensus, and providing training in the resolution of conflicts arising from different environmental, social, and economic values.
155. The Natural Resources Institute at the University of Manitoba takes a holistic interdisciplinary approach to natural resources and environmental management in its research, teaching, and outreach. At the University of Ottawa, the Human Rights Research and Education Centre has

a mandate to engage in multidisciplinary research and education on the linkages between human rights, governance, legal reform, and development.

156. The International Centre for Governance and Development at the University of Saskatchewan calls upon collaborative expertise and innovative programming to address aspects of governance in capacity building for legal and judicial reform. The inclusive model the Centre has developed emphasizes social support programs, including gender equality, and a policy reform agenda that promotes empowerment and equitable and inclusive growth.
157. The Centre for International Sustainable Development Law at McGill University in Quebec has a mission to promote sustainable societies and protection of the ecosystem by the understanding, development, and implementation of international sustainable development law. The six primary areas of research are trade, investment, and competition law; sustainable developments in natural resources law; biodiversity law; climate change and vulnerability law; human rights and poverty eradication in sustainable development law; and health in sustainable development law.
158. At the Sir Wilfrid Grenfell College at Memorial University of Newfoundland and Labrador, the Institute for Biodiversity, Ecosystem Science and Sustainability works towards three basic objectives – research, education, and responsive technical assistance. The academic community, government departments and agencies, industry, and nongovernmental organizations collaborate on natural resource conservation research and its application to sustainable use. Among the priority research topics are terrestrial ecology, fisheries and aquatic ecology, and the human dimensions of nature resources conservation and management.
159. The Environmental Studies Program at the University of Prince Edward Island (UPEI), working with and Sustainable UPIE, combined education, research, and the raising of awareness. In 2005, environmental studies students undertook a sustainability audit of the university campus. Among the topics they investigated were paper use and waste management on campus, as well as alternative instructional methods for sustainability in a university environment and the inclusion of sustainability as part of the orientation given to new students at UPEI.
160. The Environmental Studies Association of Canada was formed to further research and teaching activities related to environmental studies in Canada. The members are from educational institutions, government agencies, the private sector, and not-for-profit organizations. The approach that most of the members take to their work is from the social science and humanities point of view and covers a plethora of topics such as social ecology, environmental ethics, gender, race and the environment, sustainability and development, and biological conservation.
161. The National Science and Engineering Research Council supports the Centres for Research in Youth, Science Teaching and Learning (CRYSTAL), five research centres with the goal of increasing the understanding of the skills and resources needed to improve the quality of science and mathematics education in elementary and secondary schools and the best ways to enrich the preparation of young Canadians in these foundation subjects. The Alberta Centre is

the national coordinator and its emphasis is on improving students' interest in and engagement with science and mathematics. The Centre is producing a databank of innovative and tested teaching materials for particular grade levels and topics. Partners in this project include postsecondary institutions and school boards.

162. Another of the CRYSTAL Centres is at the University of Manitoba, where the research focus is on understanding the risk and protective factors in promoting science and mathematics. Among the 16 research projects, a number are exploring aspects of education for sustainable development, including the development of curriculum materials. A particular example is *Sounds Around Us: A Two-Way Science Learning Unit for Qikiqtani Grades 1-3 Students*. Developed for students in Nunavut, the guide incorporates many ESD best practices – including the integration of Inuit knowledge, way of knowing, beliefs, and values along with contemporary scientific knowledge, processes and attitudes; using traditional and contemporary Inuit cultural examples; and including the local community and its people in students' learning opportunities with the classroom as an extension of the school and local community.
163. At the Pacific CRYSTAL Centre in British Columbia, part of the research attention is on providing authentic science experiences to students and to research what they learn in the process. The experiences may be internships in scientific laboratories or field trips, depending on the age of the students. One of the objectives is increasing the scientific literacy of the students, with particular attention to First Nations students, to the extent that it prepares them for participating in public debates, community decision-making, and personal living consistent with long-term environmentally sustainable forms of life. CRYSTAL Atlantique in New Brunswick brings together universities in the four Atlantic Provinces to look at the culture of science, mathematics, and technology in order to strengthen their study in and out of school, including through informal learning. The fifth centre, Centre de recherche sur l'enseignement et l'apprentissage des sciences (CREAS) is in Quebec and includes university researchers from Quebec and Ontario postsecondary institutions. Its focus is on teacher professional education in science and mathematics, looking at professional competences, integrative teaching approaches, and educational resources.
164. The *Canadian Journal of Environmental Education* is a refereed journal that seeks to further the study and practice of environmental education by providing a thoughtful forum for researchers, scholars, practitioners, and postsecondary students. The Journal is published by the Canadian Network for Environmental Education and Communication (EECOM) and Lakehead University in Ontario.
165. Not all of the research is undertaken at the university level. For example, the Canadian Parks and Wilderness Society and the Sierra Club of Canada, BC Chapter, issued a research report, *Measuring the Success of Environmental Education Programs*, that provides guidelines, sample questionnaires, and an evaluation toolkit. The report was motivated by the realization that high-quality environmental education programs are more essential than ever to change values and behaviour and that effective evaluation is a key component of these programs. A survey of academics and professionals found that both groups lacked evaluation techniques to measure the more challenging outcomes, such as values shifts, behavioural changes, and

benefits to the environment. Their document provides environmental educators with solid, practical, evaluation strategies, methods, and advice.

166. The International Institute for Sustainable Development (IISD), located in Manitoba and established in 1990, promotes change towards sustainable development. As a policy research institute dedicated to effective communication of findings, IISD engages decision-makers from government, business, NGOs and other sectors in the development and implementation of policies that are simultaneously beneficial to the global economy, the global environment, and to social well being. Considerable research focusing on sustainable development has been undertaken since inception. In 2007, IISD forged a partnership with Manitoba Education, Citizenship and Youth to assess whether and how a focused effort on ESD over the decade could lead to change in knowledge, values, attitudes, and behaviours in the upcoming generations of Manitobans.
167. The Government of Canada also contributes to ESD research and development. One recent project was coordinated by Service Canada. At the request of the managers of the federal government department working in Quebec, a project analysis tool was designed to promote sustainable community development. This tool guides the review of the key conditions for community organizational capacity and project planning that will ensure successful outcomes and presents an evaluation grid to take into account all the components of sustainable development, by integrating the socio-cultural, economic, and environmental dimensions. The analysis tool is accompanied by two documents, namely the *User Guide* and the *Discussion Paper for a Framework of Action on the Sustainable Development of Communities*. The material is for individuals who develop, analyze, or approve projects, both within governments and in the community or private sectors.
168. As part of its environmental agenda, the Government of Canada has launched the *ecoTECHNOLOGY for Vehicles Program*, led by Transport Canada. Building on the best elements of Transport Canada's fuel efficiency programs, the new program includes in-depth testing for safety and environmental performance of a range of emerging technologies including those not yet available in Canada for use in light-duty vehicles. In addition to showcasing and informing consumers about these new environmentally friendly technologies at auto shows across the country, the *ecoTECHNOLOGY for Vehicles Program* fosters collaborative efforts with the automobile industry and other stakeholders across the country to help identify and take action on barriers to the introduction of environmental technologies in Canada.
169. A research project through the federal department of Human Resources and Social Development Canada, through the Environmental Careers Organization of Canada, is establishing the size and scope of the occupational requirements to clean up the contamination of land and water. It is identifying the required workforce, from the viewpoints of competencies and geography, for the cleanup, assessment, reclamation, and remediation of contaminated sites. A training and educational gap analysis and an examination of the existing qualified labour supply and enrolment are also part of the study. The research aims to provide human resource and training strategies, as well as academic programs, to respond to the growing need for a workforce trained to respond to contamination. With this greater

understanding of the competencies and skills needed for contaminated site workforces, public health and environmental protection are enhanced.

170. The Forest Management Branch of the Department of Energy, Mines, and Resources in Yukon has a number of research activities that link their strategic forest management plans to learning about sustainable development. The combination of management, research, monitoring, and means of changing practice creates a system in which what is learned is integrated quickly into new program delivery. In 2006-2007, the projects have focused on a community capacity development projects and the development of a questionnaire to gather local knowledge on indicators of sustainable forest management.

Strengthen Cooperation on Education for Sustainable Development at all Levels within the UNECE Region

171. Educational institutions and nongovernmental organizations in Canada are extensively involved in international cooperation for sustainable development. While some of the cooperation is with partners in the UNECE region, most of it takes place in Asia, Africa, and Latin America. A few very examples are included to indicate the geographic range and the variety of cooperative projects relating to education for sustainable development.
172. Through the Canada-European Union Programme for Co-operation in Higher Education and Training, universities and colleges in New Brunswick, Alberta, Quebec, and Ontario have linked up with institutions in Austria, Finland and Poland on issues of 'greening' as a critical avenue in environmental management and on the role of communications in promoting civic engagement and democratic principles. The Canadian International Development Agency provided funding to the University of Calgary in Alberta to work with the evolving ministries of education in Kosovo and in Serbia. These two Educator Development Projects are to contribute to the development of inclusive learner-centred education systems that model respect, peaceful co-existence, and equality, including gender equality. A European Union Canada Exchange Programme on transatlantic education for globally sustainable forests addresses a shared concern. The University of Alberta and the University of Joensuu in Finland cooperated on curriculum development, experiential cross-cultural learning, and international work internships to expose both students and faculty to the forms of management necessary to sustain forests in Canada and the EU.
173. The University of Regina in Saskatchewan has worked with a university in Chile to jointly assist the Chilean government with regional sustainable development policies and programs and developing leaders in research techniques and policy evaluation concerning water management, climate change, and other issues.
174. The work of two universities in Quebec further demonstrates the range of cooperative projects. Laval University teamed up with researchers in Gabon to tackle questions of citizenship and citizenship education. McGill University worked with the Caribbean Institute for Meteorology and Hydrology (CIMH) in Barbados, the Ministry of Agriculture in Guyana, and the Water Resources Authority in Jamaica. The purpose of the project was to strengthen

the capacity of CIMH to train leaders capable of managing water resources in an economically productive, socially acceptable, and environmentally sustainable manner while meeting the needs of all stakeholders, particularly the most vulnerable.

175. The Coady International Institute at St. Francis Xavier University on Nova Scotia has been promoting community self-reliance for almost 50 years. Nearly 5,000 development organization leaders from over 130 countries have taken part in the Institute's campus-based programs, stressing the need for building civil societies, through addressing issues of poverty, injustice, environmental conservation, sustainable and equitable economic development, cultural protection, and good governance. The Coady Institute works on the ground with partner institutions around the world in Latin America, Asia, and Africa.
176. The UNESCO Chair in Reorienting Teacher Education Towards Sustainability was established at York University in Ontario to reflect UNESCO's belief that the administrations and faculties of institutions of teacher education have the potential to bring about tremendous change in curriculum, teacher professional development, and educational policy in the interests of education for sustainable development. To take advantage of this opportunity, the UNESCO Chair has set up a collaborative international network of over 35 teacher education institutions. Many of these are found in the UNECE Region, including Czech Republic, Denmark, Germany, Hungary, Great Britain, Poland, Russia, Spain, Sweden, Switzerland, and the US. The institutions involved in the network can specialize in aspects of any or all of the four themes – improving access to quality education, reorienting existing education, public understanding and awareness, and training for those working in the formal education system.
177. The Canadian International Development Agency (CIDA) has funded the Canadian College Partnership Program so that Canadian colleges can work with developing country organizations specializing in education and training. The Association of Canadian Community Colleges (ACCC) administers the program. In 2006, there were 73 projects underway with many of them addressing aspects of sustainable development. For example, projects in Africa cooperated on agricultural sustainability, sustainability skills, and environmental education. In Asia, a training program for a sustainable environment was set up, while in Latin America the focus was on training in water and environmental issues. *ACCC International* is a magazine published twice a year to look at issues of development. In 2006, one of the issues highlighted gender equality as an aspect of development, citing many projects in which gender equality was a priority and the multiple ways in which it was introduced.
178. The Students for Development Program, launched in 2005, is managed by the Association of Universities and Colleges of Canada and funded by the Government of Canada through CIDA. Through this program, senior-level university students and faculty members from Canadian universities work together with partners in developing countries to promote good governance as an essential component of sustainable and fair development. Collaborative projects have been undertaken in Russia, Kosovo, Kenya, India, and numerous other locations.
179. Nongovernmental organizations also play important roles in international cooperation. For example, CLUB 2/3 is a Quebec organization for education and international cooperation,

with its activities organized by and for youth. Collaboration of youth organizations with youth groups in other countries is the core of CLUB 2/3's mission. The goal of CLUB 2/3 is to raise youth awareness concerning the interdependence of people and inspire them to embrace justice, equality, and solidarity with other people in the world, while respecting the richness of cultural diversity. From this belief system, cooperative projects are developed that respect reciprocal needs and a sustainable development perspective. CLUB 2/3 is working with groups in Brazil, Benin, Burkina Faso, Haiti, Nepal, Paraguay, Peru, and Togo.

180. Planèt'ERE is a francophone nongovernmental international organization dedicated to the promotion of environmental education for sustainable development in French-speaking countries. The Association québécoise pour la promotion de l'éducation relative à l'environnement (Quebec Association for the Promotion of Environmental Education) serves as the international secretariat for Planèt'ERE. The organization's objectives include stimulating partnerships and developing a network for francophone education for sustainable development, serving as a platform for exchange and collaborative project development, encouraging research, and informing government, international organizations, the media, and the public about the importance of ESD.
181. Canadian scholars, jurists, and human rights advocates established Equitas as a non-profit, nongovernmental organization with a mandate to advance democracy, human development, peace, and social justice through education programs. It has become a leader in human rights education in Canada and abroad through its International Human Rights program. Equitas believes that human rights education will succeed only when participants are engaged in all the aspects of the process and are challenged to consider whether their values and attitudes truly reflect the underlying principles of human rights. All of their education activities make use of participatory methods and emphasize the necessity to engage all stakeholders in needs assessment, program design, delivery, evaluation, and follow-up. Equitas' partners include international, regional, and national NGOs and public officials in Canada, Africa, Asia, and central Europe. At this time, international participants make up almost 95 per cent of all people attending the program, representing Africa, the Americas, Asia, and Central and Eastern Europe.

Foster Conservation, Use and Promotion of Knowledge of Indigenous People in Education for Sustainable Development

182. Through frameworks for education and curriculum documents at the elementary and secondary level, through activities of Aboriginal groups, and through university research initiatives, the knowledge of Indigenous people in Canada is being preserved and applied in education for sustainable development.
183. The Nunavut Department of Education's *Adult Learning Strategy*, mentioned in an earlier section of this report, exemplifies the approach that Nunavut takes to education. Given the dominance of Inuit in their population, the curricula for all levels of education are built around traditional Inuit values and knowledge. These values have at their core a deep belief in sustainable development and the link of nature and humanity. The document outlines the guiding principles for their approach:

- Respecting others, relationships and caring for people
- Fostering good spirits by being open, welcoming, and inclusive
- Serving and providing for family and/or community
- Decision making through discussion and consensus
- Development of skills through practice, effort, and action
- Working together for common cause
- Being innovative and resourceful in seeking solutions
- Respect and care for the land, animals, and the environment (social, physical, psychological)
- Continuing learning

184. The Department of Education in Yukon provides extensive curriculum support to schools. The Education Act mandates an emphasis on First Nations' language and culture for all students in Yukon schools, not only for Yukon First Nations' students. The Yukon First Nation population represents 23 per cent of the territory's population – a number that is also reflected in the classrooms. As the success of First Nations students is a priority for the government, the school system must engage the students and teach the values and complexities of First Nations culture to all students. The resources and funding provided to schools for the inclusion of First Nations culture in the curriculum stresses their unique history, connections to the land, and ways of life. The Department of Education has also undertaken an Education Reform Process in partnership with the Council of Yukon First Nations.

185. Yukon College is a founding member of the University of the Arctic, a cooperative network of universities, colleges, and other organizations committed to higher education and research in the North. Members share resources, facilities, and expertise to create and offer postsecondary education programs that are relevant and accessible to northern students. The Circumpolar Studies Program at the University of the Arctic uses both academic and traditional knowledge to teach about the lands, issues, and people of the circumpolar world.

186. In the Grade 11 and 12 Native Studies program in Ontario, the overall expectations demonstrate very clear links to Indigenous knowledge. Students must demonstrate an understanding of:

- How Aboriginal peoples' relationship to the land traditionally sustained them in various environments across Canada
- The cultural practices of Aboriginal peoples
- How Aboriginal peoples' links to the land and to sustainable development are part of their cultural identity.

187. In a Saskatchewan secondary school Native Studies course, the students explore how peoples' worldviews, relationship with the environment, and cultural factors influence economic development, and resource management practices. Students examine Aboriginal beliefs that affect economic development and then integrate traditional knowledge from an Aboriginal source – whether an interview, lecture, or documents. The students use examples of real

economic developments in Saskatchewan and elsewhere in Canada that have had environmental and cultural impacts for Aboriginal people.

188. The *Foundations for Mi'kmaw/Miigmao Language Curriculum* from the Department of Education in Nova Scotia integrates many aspects of culture to expand the students' comprehension. The values of the community are included in the program, including sustainable development as a traditional Mi'kmaw/Miigmao concept, the political system that existed before the arrival of the Europeans, and the contributions of the Mi'kmaw/Miigmao to Canadian society and the world.
189. The Government of the Northwest Territories, Aboriginal organizations, and a leading mining company set up a series of agreements that integrate educational opportunities and use of Aboriginal knowledge concerning sustainable development. One of the agreements calls for the establishment of a monitoring agency composed of the four affected Aboriginal organizations to oversee the environmental management of the mining project. The agency receives support from a Science and Technical Panel and two Traditional Knowledge Working Groups, one for water and fisheries issues and one for wildlife and habitat issues. Another of the agreements includes commitments regarding training, particularly in the areas of literacy, apprenticeships, and encouraging women's interest in non-traditional jobs.
190. A resource guide, *Shared Learnings: Integrating BC Aboriginal Content K-10*, was developed by the British Columbia Ministry of Education as a tool for integrating Aboriginal content into all subject areas from kindergarten through Grade 10. This document examines the distinct views of and relationships with the environment of the Aboriginal peoples of British Columbia.
191. Within the federal government department of Indian and Northern Affairs Canada, a comprehensive community planning initiative has been implemented in First Nations across Canada. In the Atlantic Region, which includes the provinces of Newfoundland and Labrador, Prince Edward Island, Nova Scotia, and New Brunswick, a process ensuring support and capacity building was developed by a joint committee involving First Nations, federal government officials, and academics from Dalhousie University. Twenty-two of the 33 First Nations communities have implemented or are in the process of implementing their plans. The plans consider the key areas of governance, land and resources, health, infrastructures development, culture, social issues, and the economy. Building on the success of this initiative, an International Comprehensive Community Planning Conference was held in Nova Scotia, at which First Nations communities were able to share best practice and build a support network. In addition to the sustainable development benefits, this planning technique improved working relationships, regional collaboration, and reduced the duplication of government services.
192. The department of Human Resources and Social Development Canada is working with partners to develop careers in the environment sector. The Building Environmental Aboriginal Human Resources project is designed to enhance inclusion of Aboriginal practitioners in the environment work force. The approach taken in the initiative adds the elements of traditional knowledge and work on traditional lands to mainstream environmental

approaches. There are benefits for the Aboriginals in their increased employment in a sector that is consistent with community interests. The sector and the economy both benefit through the addition of specially trained workers and the enhancement of career possibilities for Aboriginals

193. An example of a nongovernmental organization committed to the preservation and use of traditional knowledge is the First Nations Environmental Network (FNEN) based in British Columbia, a national circle of First Nations people committed to protecting, defending, and restoring the balance of life by honouring traditional Indigenous values and the paths of their ancestors. The Network has been active in protecting and sustaining treaties, Indigenous peoples' rights, sacred sites, burial grounds, food resources, air and water quality, and health, and have opposed clear cutting, old forest logging, trophy hunting, fish farming, mining, and herbicide use that they see as threatening their lands and lives. FNEN is a not-for-profit voluntary organization operating across Canada with a National Steering Committee composed of representatives from many different Indigenous Nations. Guided in their work by Traditional approaches, FNEN works with Elders, Spiritual Leaders, Medicine People. Workshops are held in natural settings and in circles whenever possible, reaching elementary, secondary, and university students.
194. Aboriginal perspectives are also shared through research. The Centre for Native Policy and Research (CNPR) is a non-partisan, social justice, progressive Aboriginal think tank on the social, economic, and environmental policy and research concerns of Aboriginal people in British Columbia and Canada. The Centre provides collaborative solutions between Aboriginal and non-Aboriginal groups by bringing people together to promote progressive research, policy alternatives, and hope. Among CNPR's key topic areas are environmental assessment and Aboriginal peoples' perspectives, rights, and knowledge. The research guidelines they use emphasize traditional knowledge, oral tradition, and the conducting of research in and for Aboriginal communities.
195. Through the University of Alberta-based Canadian Circumpolar Institute, researchers are working with northern Canadians in shaping the research that informs policies and strategies affecting their lives and land. The institute's approximately 280 associate researchers conduct community-based and community-driven projects. As such, traditional knowledge is central to the research approach, as is a focus on sustainable development in the North. Recent collaborative projects include identifying northern wildlife conservation strategies, the creation of a teaching video on ethics in Aboriginal health, and a long-term study of land recovery rates in the Mackenzie Delta in the Northwest Territories designed to advise future environmental impact assessments in the area.
196. At the University of Northern British Columbia, the research forest is co-managed by the university and the Tl'azt'en Nation. Through this project, Aboriginals, researchers, and natural resource managers work together to maintain traditional ecological knowledge, make science education more relevant to Aboriginal youth, explore opportunities for ecotourism development, and improve forest management in a way that benefits both the Tl'azt'en and the university. The partnership provides many opportunities for students and Tl'azt'en youth

to collaborate on research and to educate each other in research methods, skills, and community protocols.

197. Two Ontario institutions, Trent University and York University, in collaboration with Aboriginal researchers, are conducting a research project in seven Aboriginal communities across Canada to explore what makes strong and healthy First Nations communities. The researchers are exploring areas of community strength ranging from governance structure and economic development to the environment and health and wellness.

Challenges and Obstacles Encountered in the Implementation of the Strategy

198. Both political and public awareness of the importance and challenges of sustainable development are increasing in Canada. Issues such as the environment, human rights, and peace and security are receiving more attention in the media, in political debate, and in the lives and conversations of individuals. There is also a sense of being overwhelmed by the scope of the challenges, which leads to inactivity on an individual basis. One of education's most important roles is to counter this attitude and to show children, youth, and adults how they can make a difference. It is also essential that education makes the links between human action (and inaction) and the consequences of environmental, social, and economic deterioration apparent.
199. Schools face particular challenges in terms of making sustainable development a key component of the curriculum. One of the primary obstacles is that the curriculum is already very full and teachers and administrators are adapting to a number of other priorities such as increased literacy, greater accountability, inclusive classrooms and teaching, enhanced use of technology, and maintaining safe and secure schools. While recognized as a crucial component of education, sustainable development is also one of many recommended modifications to school systems at this time.
200. A recent publication, *Environmental Education in Canada: An Overview for Grantmakers* by the Canadian Environmental Grantmakers' Network, highlights many of the issues that are relevant to education for sustainable development. Among the challenges facing a wider integration of education for sustainable development are:
- The size and complexity of sustainable development issues mean that different NGOs, branches of government, research streams, and areas of the school curricula are involved.
 - Some of the groups working in environmental education or other aspects of sustainable development are uncomfortable with the broadening of the issue to include the social and economic aspects.
 - It is much harder to teach, whether in formal, non-formal or informal education, the more complex issues of environmental change, urban and rural development, human rights, or cultural diversity than to focus on exploring a habitat and other more concrete forms of environmental education.

- There is some resistance to more activist teaching in schools around environmental concerns, as well as differing opinions on the cause, solutions, consequences, and severity of the challenge.
- Programs for education for sustainable development are not widely shared across the regions of the country and this is particularly true for resources developed in French which are not translated for use in English settings and vice versa.
- In some jurisdictions, those focusing on revising curricular policy have not yet focused on sustainable development as a priority. The number and diversity of the jurisdictions means that lobbying by the interested groups is more dispersed.
- In many teacher-training institutions, there is a lack of information on education for sustainable development during teacher pre-service training.
- Capacity building is needed among the NGOs and other groups involved in ESD that would allow for enhanced networking and building of coalitions. In some cases, more commonality of vision and strategic action are also needed to make their effort more effective.
- More evaluation is needed on the effectiveness of ESD and increased monitoring of results.

Assistance Needed to Improve Implementation

201. The challenges and obstacles listed above highlight many of the areas in which additional assistance would be beneficial for moving ahead the initiatives linked to the UNECE Strategy and the UN Decade.

202. Funding is, as always, beneficial to all aspects of educational advancement and improvement, whether for policy development and implementation, enhanced programs at all levels of education, teacher training, development and dissemination of tools and resources, the greater integration of Indigenous perspectives, or wider cooperation for development.

203. In the report for grant makers cited above and a publication entitled *A Survey of National Environmental Education and Education for Sustainable Development Laws and Practices: Lessons for Canada* by the Canadian Institute for Environmental Law and Policy are a number of suggestions for enhancing education for sustainable development:

- More programs for youth or youth-directed initiatives for getting young people more involved in the issues
- More programs that link the schools and the communities with wider involvement, an agenda for change, and greater longevity than a classroom lesson

- More place-based learning in which students and adults are integrated into the environment that they are seeking to understand, as this can be especially effective for youth raised in urban centres
- Existing programs made more widely available, through greater dissemination, sharing, and translation
- Increased high-quality research into the effectiveness of ESD, using qualitative and quantitative research methodologies and longitudinal and comparative studies
- Greater inclusion of Indigenous perspectives in ESD
- More wide-spread enactment of environmental and education for sustainable development legislation at the provincial level
- Development of an action plan that involves all the jurisdictions, as well as their education for sustainable development partners in the Government of Canada and civil society

Conclusion

204. The UNECE *Strategy for Education for Sustainable Development* and the UN Decade of Education for Sustainable Development are having an impact in Canada as they have been used to inspire, guide, and expand efforts in education for sustainable development. They have also been cited in many of the policies, projects, documents, websites, and resources cited in this report.

205. Due to the provincial and territorial responsibility for education in Canada, it was not possible for this report to conform to the format of the questionnaire provided by UNECE. However, each of its main themes has been addressed, with examples provided to illustrate the large number of provincial and territorial governments and other stakeholders involved in ESD and the multiple initiatives taking place in each province and territory. It is important to stress that this report contains selected examples; it is not a comprehensive presentation.

206. Much has been accomplished in ESD in Canada and much more remains to be done. More legislative support, a much broader integration of the full scope of sustainable development into the curriculum, the higher education sector, and teacher training institutions, and greatly enhanced inclusion of Indigenous perspectives of sustainability are all part of the efforts for the rest of the Decade.

Appendix A - Sources used for the Preparation of the Report

Provincial and Territorial Departments and Ministries Responsible for Education

Alberta Advanced Education and Technology

www.advancededucation.gov.ab.ca/

Alberta Education

www.education.gov.ab.ca/

British Columbia Ministry of Advanced Education

www.gov.bc.ca/aved/

British Columbia Ministry of Education

www.gov.bc.ca/bced/

Manitoba Department of Advanced Education and Literacy

www.edu.gov.mb.ca/

Manitoba Department of Education, Citizenship and Youth

www.edu.gov.mb.ca/

New Brunswick Department of Education

www.gnb.ca/0000/index-e.asp

New Brunswick Department of Post-Secondary Education, Training and Labour

www.gnb.ca/0105/index-e.asp

Newfoundland and Labrador Department of Education

www.gov.nl.ca/edu/

Northwest Territories Department of Education, Culture and Employment

www.ece.gov.nt.ca

Nova Scotia Department of Education

www.ednet.ns.ca/

Nunavut Department of Education

www.gov.nu.ca/education/eng/

Ontario Ministry of Education

www.edu.gov.on.ca/

Ontario Ministry of Training, Colleges and Universities

www.edu.gov.on.ca/

Prince Edward Island Department of Education
www.gov.pe.ca/education/

Quebec Ministry of Education, Recreation and Sport
www.mels.gouv.qc.ca/

Saskatchewan Department of Advanced Education and Employment
www.aee.gov.sk.ca

Saskatchewan Learning
www.sasked.gov.sk.ca/

Yukon Department of Education
www.education.gov.yk.ca/

Other Provincial and Territorial Government Departments and Dedicated ESD Websites

Manitoba Education, Citizenship and Youth
www.edu.gov.mb.ca/k12/esd

Ontario Ministry of Education
www.obviously.ca
www.ontario.ca/ezone

Prince Edward Island Department of Environment, Energy and Forestry
www.gov.pe.ca/envengfor/index.php3?number=72936&lang=E

Northwest Territories Prince of Wales Northern Heritage Centre
<http://pwnhc.ca/teach/>

Saskatchewan – Royal Saskatchewan Museum
www.royalsaskmuseum.ca

Yukon Department of Energy, Mines and Resources
www.emr.gov.yk.ca/agriculture/sustainable.html

Yukon Department of the Environment
www.environmentyukon.gov.yk.ca/epa/eafund.html

Departments and Agencies of the Government of Canada

Agriculture and Agri-Food Canada

www.agr.gc.ca/renewal

www.agr.gc.ca/renewal/cfbas

www.agr.gc.ca/cass

Canadian International Development Agency

www.acdi-cida.ca

Environment Canada

www.ec.gc.ca

http://villemontreal.gc.ca/portal/page?_pageid=4176,4738953&_dad=portal&_schema=PORTAL

Environment Canada – Biosphere

<http://biosphere.ec.gc.ca>

Foreign Affairs and International Trade Canada

www.international.gc.ca

Health Canada

www.hc-sc.gc.ca

Human Resources and Social Development Canada

www.hrsdc.gc.ca

Indian and Northern Affairs Canada

www.ainc-inac.gc.ca

Natural Resources Canada

http://nrcan.gc.ca/smm/abor-auto/mine-kit_e.htm

Service Canada

www.servicecanada.ca

Transport Canada

www.tc.gc.ca/Programs/Environment/Commuter/menu.htm

www.tc.gc.ca/Programs/Environment/UTSP/informationnetwork.htm

www.tc.gc.ca/Programs/Environment/ecotransport/ecotechnologyvehicles.htm

Western Economic Diversification

www.wd.gc.ca

<http://nasc2005.americansolarchallenge.org>

Pan-Canadian links

Canadian Commission for UNESCO

www.unesco.ca

Council of Ministers of Education, Canada

www.cmec.ca

Nongovernmental, Non-Profit, and Civil Society Organizations

Alberta Council for Environmental Education

www.abcee.org

Association of Canadian Community Colleges

www.accc.ca

Association of Universities and Colleges of Canada

www.aucc.ca

Association québécoise pour la promotion de l'éducation relative à l'environnement

www.aqpere.qc.ca

Bruntland Green Schools

www.evb.csq.qc-net

BC Hydro

www.bchydro.com/education

British Columbia Environmental Educators Provincial Specialist Association

<http://bctf.ca/eepsa/>

British Columbia Government Energy Plan

www.energyplan.gov.bc.ca

Canadian Environmental Literacy Project

www.celp.ca

Canadian Network for Environmental Education and Communication

www.eecom.org

Canadian Parks and Wilderness Society, Calgary-Banff Chapter

www.cpawscalgary.org

Centre for Native Policy and Research

www.cnpr.ca

Centre REP'ERE – Ressources pédagogiques en éducation relative à l'environnement
www.unites.uqam.ca/ERE-UQAM/Repere/accueil.html

Le Club 2/3
www.2tiers.org

Curriculum Services Canada
www.curriculum.org/csc/about.shtml

David Suzuki Foundation
www.davidsuzuki.org

EENorth – Environmental Education Resources for Northern Canada
www.eenorth.com

Environmental Educator of British Columbia Society
www.environmentaleducatorsbc.ca/index.cfm

Environmental Studies Association of Canada
www.thegreenpages.ca/portal/esac/background.html

ENvironnement JEUnesse
www.enjeu.ca

Equitas – International Centre for Human Rights Education
www.equitas.org

Équiterre
www.equiterre.org

EYES Project
www.eyesproject.com

First Nations Environmental Network
<http://fnen.org>

Green Street
www.green-street.ca

Green Teacher
www.greenteacher.com

Inside Education
www.insideeducation.ca

International Institute for Sustainable Development
www.iisd.org

Learning for a Sustainable Future
www.lsf-1st.ca

National Education for Sustainable Development Expert Council
www.lsf-1st.ca

The Natural Step
www.naturalstep.ca

Pembina Institute
www.pembina.org

Planèt'ERE
www.planetere.org

Provincial/Territorial Education for Sustainable Development Working Groups
www.lsf-1st.ca

Youth Environmental Network
www.yen-rej.org

YOUCAN – Youth Canada Association
www.youcan.ca

Postsecondary Research Centres

Canada Centre for Environmental Education
Royal Roads University, British Columbia
www.royalroads.ca

Canada Research Chair in Environmental Education
University of Quebec in Montreal
www.unites.uqam.ca/ERE-UQAM

Centre for Interactive Research on Sustainability
University of British Columbia
www.cirs.ubc.ca

Centre for International Sustainable Development Law
McGill University, Quebec

www.cisd.org

Centre for Research in Youth, Science Teaching and Learning (CRYSTAL)

- CRYSTAL – Alberta
- www.uofaweb.ualberta.ca/edpolicystudies.crystalalberta.cfm
- CRYSTAL – Atlantique
- www.crystalatlantique.ca
- CRYSTAL – Manitoba
- <http://umanitoba.ca/outreach/crystal>
- CRYSTAL – Pacific
- www.educ.uvic.ca/pacificcrystal/node1.html
- CRYSTAL – Sherbrooke
- <http://creas.educ.usherbrooke.ca>

Centre for Sustainable Community Development
Simon Fraser University, British Columbia
www.sfu.ca/cscd/about.html

Coady International Institute
St Francis Xavier University, Nova Scotia
www.stfx.ca/institutes/coady/about.html

Éco-Conseil (Eco-Advisors)
University of Quebec in Chicoutimi
<http://dsf.uqac.ca/eco-conseil/>

Environment and Sustainable Development Research Centre
University of New Brunswick
www.unb.ca/enviro

Human Rights Research and Education Centre
University of Ottawa, Ontario
www.uottawa.ca/hrrec

Institute for Biodiversity, Ecosystem Science and Sustainability
Sir Wilfrid Grenfell College, Memorial University, Newfoundland and Labrador
www.ibes.swgc.mun.ca/index.html

International Centre for Governance and Development
University of Saskatchewan
www.icgd.usask.ca/index.html

Natural Resources Institute
University of Manitoba

www.umanitoba.ca/institutes/natural_resources/nri_about.html

Regional Centres of Expertise, United Nations University Institute for Advanced Studies

- Saskatchewan Regional Centre of Expertise on Education for Sustainable Development
- www.craikecovillage.ca/rce.html
- Sudbury Regional Centre of Expertise on Education for Sustainable Development
- www.city.greatersudbury.on.ca/pubapps/newsreleases/index.cfm?Release_id=1844&lang=en
- Toronto Regional Centre of Expertise on Education for Sustainable Development
- www.ias.unu.edu/research/RCEtoronto.cfm

UNESCO Chair in Environment and Sustainable Development

University of Quebec in Montreal

www.ise.uqam.ca

UNESCO Chair in Reorienting Teacher Education towards Sustainability

York University, Ontario

www.iris.yorku.ca/Learning/UNESCO/index.html

UNESCO Chair in Sustainable Development

Laval University, Quebec

www.vrr.ulaval.ca/bd/regroupement/fiche/133.html

University of the Arctic

Yukon College

www.yukoncollege.yk.ca/uarctic

York Institute for Research and Innovation in Sustainability

York University, Ontario

www.iris.yorku.ca

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Appendix B – Map of Canada

The attached map is from Natural Resources Canada.

The reproduction in this report is not an official version of the map, nor has it been made in affiliation with or with the endorsement of Natural Resources Canada.



Appendix C - Education in Canada

Canada is the second largest country in the world — almost 10 million square kilometres (3.8 million square miles) — with a population density of 3.3 people per square kilometre, one of the lowest in the world, and a per capita GDP in 2003 of C\$38,495. A very large portion of the population of 32.1 million lives in four major urban centres, and within 300 kilometres of the southern border with the United States. One of the major challenges to the provision of quality educational opportunities for all Canadians is meeting the needs of urban students and those in small remote communities as well as those in Aboriginal communities.

Responsibility for Education

Responsibility: In Canada, there is no federal department of education and no integrated national system of education. Within the federal system of shared powers, Canada’s Constitution Act of 1867 provides that “[I]n and for each province, the legislature may exclusively make Laws in relation to Education.” In the 13 jurisdictions — 10 provinces and 3 territories, departments or ministries of education are responsible for the organization, delivery, and assessment of education at the elementary and secondary levels within their boundaries. In some jurisdictions, separate departments or ministries are responsible for elementary-secondary education and for postsecondary education and skills training. The institutions in the postsecondary system have varying degrees of autonomy from direct provincial government control.

Regional Differences: While there are a great many similarities in the provincial and territorial education systems across Canada, there are important differences that reflect the geography, history, culture, and corresponding specialized needs of the populations served. The comprehensive, diversified, and widely accessible nature of the education systems in Canada reflect the societal belief in the importance of education.

Elementary and Secondary Education

Government Role: Public education is provided free to all Canadians who meet various age and residence requirements. Each province and territory has one or two departments/ministries of education, headed by a minister who is an elected member of the legislature and appointed to the position by the government leader of the jurisdiction. Deputy ministers, who belong to the civil service, are responsible for the operation of the departments. The ministries and departments provide educational, administrative, and financial management and school support functions, and they define both the educational services to be provided and the policy and legislative framework. Their responsibilities include curriculum development, assessment, teachers’ working conditions, funding formulas, equity, and technological innovation.

Local Governance: Local governance of education is usually entrusted to school boards, school districts, school divisions, or district education councils. Their members are elected by public ballot. The power delegated to the local authorities is at the discretion of the provincial and territorial governments and generally consists of the operation and administration (including financial) of the group of schools within their board or division, curriculum implementation, responsibility for personnel, enrolment of students, and initiation of proposals for new construction

or other major capital expenditures. There are approximately 15,500 schools in Canada — 10,100 elementary, 3,400 secondary, and 2,000 mixed elementary and secondary — with an overall average of 351 students per school. In 2002–03, provinces and territories reported that there were five million students attending public elementary and secondary schools. Because Canada is a bilingual (French-English) country, each province and territory (except Quebec) has established French-language school boards to manage the network of French-language schools within their jurisdiction that serve the French-speaking minority populations. In Quebec, the same structure applies to education in English-first-language schools.

Funding: Public funding for education comes either directly from the provincial or territorial government or through a mix of provincial transfers and local taxes collected either by the local government or by the boards with taxing powers. Provincial and territorial regulations, revised yearly, provide the grant structure that sets the level of funding for each school board in their jurisdiction, based on factors such as the number of students, special needs, and location. In 2002–03, almost \$40 billion was spent on public elementary and secondary education in Canada, breaking down to an expenditure of about \$7,950 per student. Expenditures on public elementary and secondary schools were 13.4 per cent of the total combined expenditures by provincial, territorial, and local governments in 2002–03, representing 3.3 per cent of GDP.

Teachers: In 2000–01, Canada’s elementary and secondary school systems employed close to 310,000 educators, most of whom had four or five years of postsecondary study. This total for educators is primarily teachers, but includes principals, vice-principals, consultants, and counsellors. They are licensed by the provincial and territorial departments or ministries of education. Most secondary school teachers have a subject speciality in the courses they teach. Some school boards and districts are encountering shortages of secondary teachers specialized in such areas as technology and mathematics.

Pre-elementary Education: Most provinces and territories provide kindergartens, operated by the local education authorities and offering one year of pre-first-grade, non-compulsory education for five-year-olds. In one province, kindergarten is compulsory; in others, pre-school classes are available from age four or even earlier. At a pan-Canadian level, 95 per cent of five-year-olds attend pre-elementary or elementary school, and over 40 per cent of four-year-olds are enrolled in junior kindergarten, with large variations among the jurisdictions. The intensity of the programs also varies, with full-day and half-day programs, depending on the school board.

Elementary Education: The ages for compulsory schooling vary from one jurisdiction to another, but most require attendance in school from age 6 to age 16. In some cases, compulsory schooling starts at 5, and in others it extends to age 18 or graduation from secondary school. In most jurisdictions, elementary schools cover six to eight years of schooling, which can be followed by a middle school or junior high before moving on to secondary school (see Figure 1). The elementary school curriculum emphasizes the basic subjects of language, mathematics, social studies, science, and introductory arts, while some jurisdictions include second-language learning. In many provinces and territories, increased attention is being paid to literacy, especially in the case of boys whose test results have shown that their performance is falling behind that of girls in language. Almost 98 per cent of elementary students go on to the secondary level.

Secondary Education: Secondary school covers the final four to six years of compulsory education. In the first years, students take mostly compulsory courses, with some options. The proportion of options increases in the later years so that students may take specialized courses to prepare for the job market or to meet the differing entrance requirements of postsecondary institutions. Secondary school diplomas are awarded to students who complete the requisite number of compulsory and optional courses. In most cases, vocational and academic programs are offered within the same secondary schools, with some shorter non-diploma programs for students interested in specific trades. Enrolment at age 16, the final year of compulsory schooling in many jurisdictions, was above 90 per cent in the 1999–2000 school year. The secondary school completion rate in 2003 was 75.6 per cent, with 81 per cent of girls and 70 per cent of boys graduating. (Because of a change in the structure of senior secondary school in Ontario, a double group of students graduated in 2003, and these graduates are not reflected in the above numbers. Graduates from Ontario generally represent about 37 per cent of all graduates in Canada.) The overall graduation rate has remained relatively stable during the past five years.

Private/Independent Schools: Private or independent schools provide an alternative to publicly funded schools in many provinces and territories; some of these schools meet the general standards prescribed by the ministry or department of education. They usually charge tuition fees and have a great variety of options based on interest, religion, language, or academic status. While the public system is coeducational, several of the private schools offer education for boys or girls only. In some cases, these schools receive partial funding from the province or territory.

Figure 1: Organization and Structure of Elementary and Secondary Schools

Levels within elementary-secondary schools, by jurisdiction

Newfoundland and Labrador	P	1	2	3	4	5	6	7	8	9	10	11	12		
Prince Edward Island	P	1	2	3	4	5	6	7	8	9	10	11	12		
Nova Scotia	P	1	2	3	4	5	6	7	8	9	10	11	12		
New Brunswick - English	P	1	2	3	4	5	6	7	8	9	10	11	12		
New Brunswick - French	P	1	2	3	4	5	6	7	8	9	10	11	12		
Quebec - General	P	P	1	2	3	4	5	6	7	8	9	10	11		
Quebec - Vocational												10	11	12	13
Ontario	P	P	1	2	3	4	5	6	7	8	9	10	11	12	
Manitoba	P	P	1	2	3	4	5	6	7	8	9	10	11	12	
Saskatchewan	P	P	P	1	2	3	4	5	6	7	8	9	10	11	12
Alberta	P	P	P	1	2	3	4	5	6	7	8	9	10	11	12
British Columbia	P	1	2	3	4	5	6	7	8	9	10	11	12		
Yukon	P	1	2	3	4	5	6	7	8	9	10	11	12		
Northwest Territories	P	1	2	3	4	5	6	7	8	9	10	11	12		
Nunavut	P	1	2	3	4	5	6	7	8	9	10	11	12		

P	Pre-elementary, not universally available
P	Pre-elementary, universally available
Elementary/Primary	Elementary/Primary
Junior high/Middle	Junior high/Middle
Senior high	Senior high
Secondary	Secondary

Source: Statistics Canada and Council of Ministers of Education, Canada. *Education Indicators in Canada: Report of the Pan-Canadian Education Indicators Program 2003* (Toronto, Ontario: Canadian Education Statistics Council, 2003), 172.

Postsecondary Education

Range of Institutions: Postsecondary education is available in both government-supported and private institutions, which offer degrees, diplomas, certificates, and attestations depending on the nature of the institution and the length of the program. Universities and university colleges focus on degree programs but also offer diplomas and certificates, often in professional designations. The non-degree-granting institutions, such as colleges, community colleges, and technical and vocational institutions, offer diplomas, certificates, and, in some cases, two years of academic credit that can be transferred to the university level. Les collèges d'enseignement général et professionnel (cégeps) in Quebec offer a choice of two-year academic programs that are prerequisite for university study or three-year vocational and professional programs that prepare students for the labour market. All "recognized" postsecondary institutions in Canada have been given the authority to grant academic credentials by their provincial or territorial government through their charters or legislation that ensure mechanisms for assessing the quality of the institution and its programs. Distance education, which provides extensive on-line, media, and

print-based programs, is available from traditional institutions, universities dedicated to distance learning, and college networks.

Governance: Universities are largely autonomous; they set their own admissions standards and degree requirements and have considerable flexibility in the management of their financial affairs and program offerings. Government intervention is generally limited to funding, fee structures, and the introduction of new programs.

In colleges, however, government involvement can extend to admissions policies, program approval, curricula, institutional planning, and working conditions. Most colleges have boards of governors appointed by the provincial or territorial government, with representation from the public, students, and instructors. Program planning incorporates input from business, industry, and labour representatives on college advisory committees.

Funding: Revenue for Canada's universities and colleges in 2004–05 was \$27.7 billion. Federal, provincial, and municipal government funding, including funding for research, accounted for 55.6 per cent of the revenue, although this ranged from 43.6 per cent in Nova Scotia to 70.5 per cent in Quebec. Student fees accounted for over 20 per cent of the total, with bequests, donations, nongovernmental grants, and sales of products and services bringing in another 24.2 per cent. University and college expenditures in 2004–05 were more than \$27.9 billion. Canada has 157 public universities and degree-granting institutions and over 175 recognized public colleges and institutions. Tuition costs at universities averaged \$4,172 in 2004–05, with international student fees for an undergraduate program averaging about \$12,000 annually. At colleges (outside Quebec), the average tuition was \$2,133 (Quebec residents do not pay college tuition). Education is also funded through the money that governments transfer to individual students through loans, grants, and education tax credits. In 2003, federal and provincial government spending on all forms of student assistance was about \$4.4 billion.

Attendance and Graduation: In 2004–05, there were 785,000 full-time university students (an increase of nearly 130,000 in the previous three years), as well as 270,000 part-time students. In 2004, Canadian universities awarded an estimated 135,000 bachelor's degrees, 26,000 master's degrees, and 4,000 doctoral degrees. In 2003, Canadian colleges had over 736,000 full- and part-time students enrolled. Participation in postsecondary education has grown significantly in the past few years, whether measured by numbers of enrolments or by the proportion of the population in any given age group who are attending college or university. While women continue to make up the majority of students on both university and college campuses, they are still in the minority in the skilled trades.

University Activities: Degree-granting institutions in Canada focus on teaching and research. In 2004–05, Canadian universities performed \$9.3 billion worth of research and development, 35 per cent of the national total. Teaching is the key function, whether at the small liberal arts colleges that grant only undergraduate degrees or at the large, comprehensive institutions. Registration varies from about 2,000 students at some institutions to a full-time enrolment of almost 60,000 at the University of Toronto, Canada's largest university. There are more than 10,000 undergraduate and graduate degree programs offered in Canadian universities, as well as professional degree

programs and certificates. Most institutions provide instruction in either English or French; others offer instruction in both official languages. In 2003–04, Canadian universities employed 37,000 full-time faculty members.

University Degrees: University degrees are offered at three consecutive levels. Students enter at the bachelor's level after having successfully completed secondary school or the two-year cégep program in Quebec. Most universities also have special entrance requirements and paths for mature students. Bachelor's degrees normally require three or four years of full-time study, depending on the province and whether the program is general or specialized. An honours bachelor's degree involves an additional year of study. A master's degree typically requires two years of study after the bachelor's or honours degree. For a doctoral degree, three to five years of additional study and research plus a dissertation are the normal requirements. In regulated professions, such as medicine, law, education, and social work, an internship is generally required in order to obtain a licence to practise. University colleges provide three- and four-year bachelor's degrees.

College Activities: At the college level, the focus is on teaching, but applied research is taking on greater importance. Public colleges, specialized institutes, community colleges, institutes of technology, and cégeps offer a range of vocation-oriented programs in a wide variety of professional and technical fields, which may include business, health, applied arts, technology, and social services. These programs range from six months to three years in duration, with some institutes offering postgraduate diplomas as well. Some of the institutions are specialized and provide training in a single field such as fisheries, arts, paramedical technology, and agriculture. Colleges also provide the majority of the literacy and academic upgrading programs, pre-employment and pre-apprenticeship programs, and the in-class portions of registered apprenticeship programs. As well, a wide variety of workshops, short programs, and upgrades for skilled workers and professionals are made available.

College Recognition and Cooperation: Diplomas are generally awarded for successful completion of two- and three-year college programs, while certificate programs usually take up to one year. In Quebec, attestations d'études collégiales (AEC) are awarded as the equivalent of certificates. University degrees and applied degrees are offered in some colleges and institutes, and others provide university transfer programs. Colleges work very closely with business, industry, labour, and the public service sectors to provide professional development services and specialized programs and, on a wider basis, with their communities to design programs reflecting local needs. Most colleges in Canada also recognize Prior Learning Assessment and Recognition (PLAR) in at least some of their programs. Some universities also recognize it, and a growing number of provinces offer PLAR to adults at the secondary school level. PLAR is a process that helps adults demonstrate and gain recognition for learning they have acquired outside of formal education settings.

Adult Education

Participation: One out of every three adult workers, 35 per cent, participated in some type of formal, job-related training in 2002, accessing opportunities to continue learning and to upgrade their skills. The participants received an average of 150 hours of training. Twenty-five per cent of

adult workers reported taking employer-supported training programs, support that might include payment for training, flexible hours, or transportation to training. Participants are more likely to be in management and professional occupations than in blue collar or clerical occupations. Utilities, educational services, and public administration are the industries with the highest rates of participation. Those with higher levels of literacy and education are also more likely to participate in adult education. Self-directed learning, in which workers learn on their own through observation, study, and learning from other workers, was almost as common as formal training. When asked by researchers, 33 per cent of working adults stated that they had engaged in some sort of self-directed, informal learning related to their jobs during the preceding four-week period.

Providers: Colleges are the primary vehicle for adult education and training for the labour force; universities supply a smaller portion. Community-based groups, largely funded by the provincial, territorial, or federal governments, address special needs such as literacy and serve groups such as the rural poor, the Aboriginal communities, immigrants, displaced workers, and those with low levels of literacy or education. Apprenticeship is an industry-based learning system that combines on-the-job experience with technical training and leads to certification in a skilled trade. Provincial and territorial governments are responsible for apprenticeship training, and much of the classroom learning is done in the college system. Apprenticeship in Canada is largely an adult program. Registration in apprenticeship training programs reached almost 250,000 in 2003, an increase of 39.8 percent from 1998 and 45.9 per cent from 1993. Gains occurred in every major trade group, especially the building construction trades.

Activities of the Government of Canada

The Federal Contribution: The federal government of Canada provides financial support for postsecondary education and the teaching of the two official languages. In addition, the federal government is responsible for the education of Registered Indian people on reserve, personnel in the armed forces and the coast guard, and inmates in federal correctional facilities.

Aboriginal Education: The federal government shares responsibility with First Nations for the provision of education to children ordinarily resident on reserve and attending provincial, federal, or band-operated schools. In 2004-05, Indian and Northern Affairs Canada supported the education of 120,000 First Nations K-12 students living on reserve across Canada. Band-operated schools located on reserve educate approximately 60 per cent of these students.

The three northern territories, Yukon, Nunavut, and the Northwest Territories, provide education services for their Registered Indian and/or Inuit populations. First Nations children living off reserve are educated in the public elementary and secondary schools in their cities, towns, and communities, with the provinces and territories providing the majority of educational services for Aboriginal students.

Funding is also provided for postsecondary assistance and programs for Registered Indian students residing on or off reserve. Indian and Northern Affairs Canada supports approximately 23,000 students annually for tuition, books, living allowances, etc., for First Nations and Inuit postsecondary education. The Department also provides support for the development and delivery

of college- and university-level courses designed to enhance the postsecondary educational achievement of First Nations and Inuit students.

Postsecondary Education: In addition to providing revenue for universities and colleges through transfer payments, the federal government offers direct student support. Every year, the Canada Student Loans Program and related provincial and territorial programs provide loans and interest forgiveness to over 350,000 postsecondary students. The Canada Millennium Scholarship Foundation awards \$285 million in bursaries and scholarships each year to about 100,000 students throughout Canada. For parents, the Canada Education Savings Grant program supplements their savings for postsecondary education. These programs are designed to make postsecondary education more widely accessible and to reduce student debt.

Language Education: Reflecting its history and culture, Canada adopted the Official Languages Act (first passed in 1969 and revised in 1988), which established both French and English as the official languages of Canada and provided for the support of English and French minority populations. According to the 2001 Census, 67 per cent of the population speak English only, 13 per cent speak French only, and 18 per cent speak both French and English. The French-speaking population is concentrated in Quebec, while each of the other provinces and territories has a French-speaking minority population; Quebec has an English-speaking minority population. The federal government's official-language policy and funding programs include making contributions to two education-related components — minority-language education and second-language education. Through the Official Languages in Education Program, the federal government transfers funding for these activities to the provinces and territories based on bilateral and general agreements that respect areas of responsibility and the unique needs of each jurisdiction. The bilateral agreements related to these contributions are negotiated under a protocol worked out through the Council of Ministers of Education, Canada (CMEC). Two national federally funded programs, coordinated by CMEC, provide youth with opportunities for exchange and summer study to enhance their second-language skills.

The Council of Ministers of Education, Canada

Role of CMEC: The Council of Ministers of Education, Canada (CMEC) was formed in 1967 by the provincial and territorial ministers responsible for education to provide a forum in which they could discuss matters of mutual interest, undertake educational initiatives cooperatively, and represent the interests of the provinces and territories with national educational organizations, the federal government, foreign governments, and international organizations. CMEC is the national voice for education in Canada and, through CMEC, the provinces and territories work collectively on common objectives in a broad range of activities at the elementary, secondary, and postsecondary levels.

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