REPORT OF CANADA TO THE UNITED NATIONS COMMISSION ON SUSTAINABLE DEVELOPMENT

Canada

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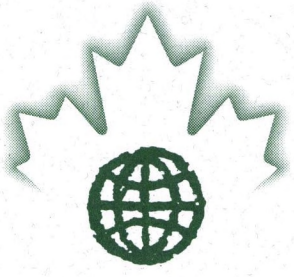

Canada

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Cat No. E2-136/1994
ISBN 0-662-60275-7

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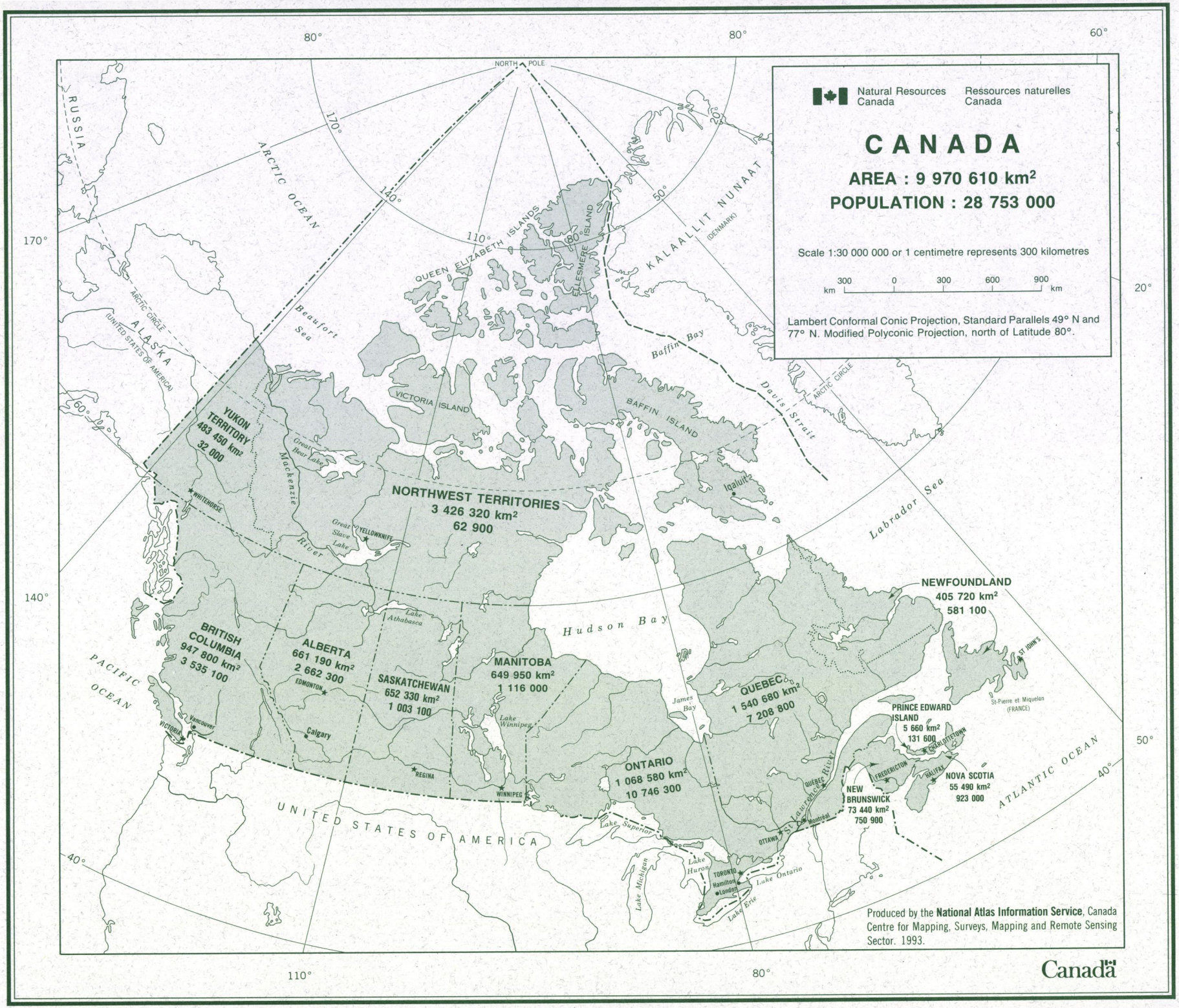
TABLE OF CONTENTS


Natural Resources Canada
Ressources naturelles Canada
CANADA
AREA : 9 970 610 km²
POPULATION : 28 753 000
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RUSSIA
ARCTIC OCEAN
ALASKA (UNITED STATES OF AMERICA)
ARCTIC CIRCLE
Beaufort Sea
QUEEN ELIZABETH ISLANDS
ELLESMERE ISLAND
KALAALLIT NUNAAT (DENMARK)
Baffin Bay
Davis Strait
VICTORIA ISLAND
BAFFIN ISLAND
Labrador Sea
YUKON TERRITORY
483 450 km²
32 000
Great Bear Lake
Mackenzie River
WHITEHORSE
NORTHWEST TERRITORIES
3 426 320 km²
62 900
Iqaluit
Great Slave Lake
YELLOWKNIFE
Hudson Bay
Lake Athabasca
BRITISH COLUMBIA
947 800 km²
3 535 100
ALBERTA
661 190 km²
2 662 300
EDMONTON
SASKATCHEWAN
652 330 km²
1 003 100
MANITOBA
649 950 km²
1 116 000
James Bay
Lake Winnipeg
QUEBEC
1 540 680 km²
7 208 800
NEWFOUNDLAND
405 720 km²
581 100
ST JOHN'S
St-Pierre et Miquelon (FRANCE)
PRINCE EDWARD ISLAND
5 660 km²
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CHARLOTTETOWN
PACIFIC OCEAN
Vancouver
VICTORIA
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REGINA
WINNIPEG
ONTARIO
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FREDERICTON
HALIFAX
NOVA SCOTIA
55 490 km²
923 000
NEW BRUNSWICK
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ATLANTIC OCEAN
UNITED STATES OF AMERICA
Lake Superior
OTTAWA
Montréal
TORONTO
Hamilton
London
Lake Huron
Lake Michigan
Lake Ontario
Lake Erie
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Canada

SUMMARY

In 1992, the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro brought together virtually all the world's countries. Among its major achievements was Agenda 21, an ambitious plan of action on environment and development issues. After UNCED, the United Nations Commission on Sustainable Development (CSD) was created to monitor progress toward achieving that plan. The CSD has requested that countries submit national reports on their activities since UNCED. The examples contained in these reports are meant to help member countries share information on progress made and future actions required. They will highlight some of the lessons learned and the challenges ahead.

General Trends in the Implementation of Agenda 21

Canada's approach to sustainable development reflects the diversity of our setting, our people, and our political and economic systems. Canada draws on that diversity as we work to build sustainable communities and a sustainable economy. We have based our approach on three beliefs: a sound economy is linked to a healthy environment; everyone has a personal responsibility for action; and everyone shares a responsibility to build partnerships for action.

Canada proposed a "quick-start" action agenda at UNCED. In meeting that agenda, we have endeavoured to pursue our commitment to a process that is open and inclusive. It is a process in which all sectors of Canadian society are responsible for taking action. This means that governments, the business community, non-governmental organizations, institutions and communities are working together to meet the commitments we made at UNCED.

Consensus Building

Canadians and the organizations that represent them have been taking action within their own fields of concern. People are also coming together to find co-operative means of tackling problems. Round tables on the environment and the economy are one means of working together. They exist at all levels of government in Canada and work toward reaching consensus on critical sustainable development issues.

The Projet de société, established in November 1992, is developing a framework for a national sustainable development strategy for Canada. All sectors of Canadian society have been represented in the effort to help fulfil our Agenda 21 commitments.

Governments

All governments have developed plans that take into account the shift to sustainable development. The Green Plan is the Government of Canada's policy framework and action plan for sustainable development. Since 1990, it has funded many activities that now support Canada's commitments to Agenda 21.

The governments of each province and territory have also undertaken many activities to meet their responsibilities as a result of UNCED. They have also used vehicles such as the Canadian Council of Ministers of the Environment (CCME) to help develop common post-UNCED plans.

Many of the goals of Agenda 21 require action at the local level. Canada's municipalities are working both individually and through their common organizations.

International

Canada continues to play a significant role internationally, implementing our quick-start agenda on the conventions on biological diversity and climate change. Another focus has been the negotiations for an agreement that will allow effective management of fish stocks on the high seas. Further, a country with vast forests, Canada is working toward internationally accepted forest management criteria. We are providing technical aid to other countries through our International Model Forests Program.

Future Directions

There is a need to gather information on sustainable development issues. Canada's International Institute for Sustainable Development (IISD) is creating an information system to track Agenda 21-related activities. The governments are doing the same for their programs. During recent years, Canada's governments have been facing significant financial pressure. This is creating an even greater emphasis on innovative methods to achieve the goals of sustainable development.

International Co-operation

Canada's approach to international co-operation for sustainable development recognizes the importance of economic vehicles such as trade, investment and development assistance. Canada believes the environment can benefit from freer trade. We also believe that environmental considerations must be taken into account in trade negotiations. That belief has influenced our positions in the Uruguay Round of multilateral negotiations under the General Agreement on Tariffs and Trade (GATT) and in the North American Free Trade Agreement (NAFTA). The NAFTA included the first environmental review of a trade agreement by any country and the first effort to

integrate environmental concerns at every step of a trade negotiation. Canada is building on this achievement by supporting multilateral efforts and research, which should create stronger links between trade and environment policies.

Canada has supported international development projects designed to improve local environmental conditions. We are also encouraging multilateral development bodies to integrate environmental factors into their program funding decisions.

Consumption Patterns

Canadians recognize that the manner in which they consume is a key element in sustainable development, and are taking actions. We also recognize that our active support of recycling and efficiency and conservation initiatives must be matched by efforts to increase awareness of unsustainable consumption, as well as alternatives, both within Canada and internationally.

State of the environment reporting is an effective means of tracking activities and trends, and of increasing public awareness of the impacts of unsustainable consumption patterns. Greater public awareness can improve energy and water efficiency and can lead to more responsible consumption and production.

Canada has undertaken specific activities to encourage more efficient use of resources and to minimize waste. The National Packaging Protocol and provincial waste strategies are examples of these kinds of efforts. Initiatives such as the Environmental Choice Program and energy labelling, in co-operation with consumers, industry and government, help consumers identify products and services that ease the burden on the environment. Governments, as some of the country's largest consumers, are altering their purchasing and procurement policies to increase demand for recycled and recyclable products.

Financial Resources and Mechanisms

The availability of financial resources for developing countries and economies in transition is central to achieving many of the goals outlined in Agenda 21. Canada's contribution to these international resources is substantial. Most of it flows through official development assistance (ODA) and the Green Plan.

Some key examples of programs we support are the Global Environment Facility (GEF) and the Montreal Protocol Multilateral Fund (MPMF). The GEF provides funds to developing countries to address issues with global environmental effects. Canada has supported its pilot phase with $25 million, and will contribute to its next replenishment. The MPMF helps developing countries to replace ozone-depleting chemicals. We have provided about $15 million to support its operations, and are committed to contributing $24 million to its next replenishment. Canada contributes funds for many other UNCED

follow-up activities, including Capacity 21, a program run through the United Nations Development Program (UNDP), which will assist sustainability planning in developing countries.

Canada has integrated sustainable development principles throughout our ODA. We are promoting our policy for environmental sustainability within multilateral bodies such as the International Monetary Fund (IMF). Canada's willingness to convert up to $145 million of Latin American ODA debt has resulted in successful negotiations for more than half the funds.

Technology Transfer, Co-operation, and Capacity Building

Canada has a strong environmental equipment and services industry. We have strengths in many areas, including improving the environmental performance of natural resource industries, wastewater treatment, solid waste management and remote sensing for resource management. Governments have also provided support for training workers in environmental industries. One example of Canada's prominence in this area is the biennial GLOBE conference in Vancouver, the largest exposition of environmental goods and services in the world. The next conference will take place in March 1994.

Canada's progress in these fields has created opportunities to transfer knowledge and technology to developing states. Our technology and training are addressing problems such as the distribution of drinking water and waste management through bilateral and multilateral programming. Through environmental co-operation agreements, countries such as Mexico gain access to Canadian skills and technology.

Protecting and Promoting Human Health

Canadians are increasingly concerned about the links between their health and that of the environment. Governments and health professionals are responding with research, laws and programs. Regulations are now much stricter, and greater attention is being paid to the health needs of people who may be exposed to environmental problems. One group whose needs have merited special attention has been indigenous peoples. Many have been affected by a loss of traditional lifestyles and diets due to social and environmental change. We also use our expertise through a wide variety of projects designed to meet health needs in developing countries.

Promoting Sustainable Housing and Human Settlement Development

Canada's housing and land use policies increasingly try to meet social, economic and environmental goals. There are programs to improve the quality of housing and access to it. Now governments, business and researchers are trying to improve efficiency in the use of construction material and in energy and transportation systems.

New community planning and development models try to minimize environmental impacts such as a reliance on private cars for transportation. This can be done through intensified land use. Rural land use is also changing to preserve farmland and ecosystems.

Canada's strength in housing and urban settlement issues has created a wealth of knowledge and expertise that we share with developing countries. International partnerships are in place to draw on the experience of Canadian institutions, experts and local governments.

Freshwater Resources

The impact of agricultural, industrial and urban development on waterways is now receiving increased attention by Canadian governments and major groups. Policy makers now see waterways as parts of larger ecosystems. They know that a reduction of pollution is essential, and increasingly recognize that waterways must support multiple uses, including the needs of non-human species.

The special needs of waterways in heavily populated parts of Canada and in the Arctic require specific consideration. Partnerships that include governments, major groups and other interests are coming together to determine how best to clean up and manage these waterways. Canada's experience in providing safe water to its citizens and managing water resources is also being translated into the projects of Canadian development assistance organizations.

Toxic Chemicals and Wastes

Governments, the private sector and consumers have worked to control the environmental impacts of toxic chemicals and wastes for many years. Through redesigning processes to reduce, reuse and recycle these products, businesses and governments are making real progress toward their targets of cutting the amount of solid and hazardous waste to half their former levels. Governments and business have found innovative means of cutting waste, and are working with international agencies to find global means of controlling toxic chemicals and hazardous or radioactive wastes.

Challenges

Building sustainable communities and a sustainable economy requires new ways of thinking and acting. Understanding the complexity of ecosystems and the effects of human activity is essential. More efficient use of resources and restrained consumption are other critical steps at home. Development assistance and trade policies are important internationally. Most of all, building sustainability requires a commitment to co-operation. Canadians are working together to achieve consensus on real, practical solutions. We are working with the international community to bring that approach to bear around the world.

INTRODUCTION

This first Report of Canada to the United Nations Commission on Sustainable Development (CSD) summarizes our progress, lessons and challenges in achieving the goals of sustainable development. It concentrates on the chapters and themes in Agenda 21 that will be discussed at the 1994 session of the CSD.

In this report, Canada uses the definition of sustainable development offered by the World Commission on Environment and Development (WCED, also known as the Brundtland Commission): "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Canada recognizes that every individual, major group, and order of government is responsible for integrating the principle of sustainable development into its activities. All have begun to take action. Accordingly, this report draws on examples from the diversity of Canadian responses to Agenda 21 and the many partnerships between groups, governments and individuals. Where those responses involve expenditures, amounts are expressed in Canadian dollars.

This report has been prepared by the Canadian government in accordance with the guidelines proposed by the CSD. It has involved consultation with other orders of government in Canada and with representatives of major groups. The report reflects the diversity of approaches that exist within Canada and describes some of the mechanisms we are building to reach consensus. It also offers a sense of the direction Canadians have taken on sustainable development and some of the results achieved to date.

PART I

GENERAL TRENDS IN THE IMPLEMENTATION OF AGENDA 21

PART I
GENERAL TRENDS IN THE IMPLEMENTATION OF AGENDA 21

Overview

The Canadian approach to sustainable development reflects our unique characteristics. These include a low population density, large distances between centres of economic activity, a cold to temperate climate, and a large, energy-intensive, natural resource-based export sector.

Canada is the world's second largest country. We have the world's longest coastline, and 7 percent of the world's land mass. We are a country whose more than 28 million people enjoy one of the world's highest standards of living and a good quality of life. Canada is endowed with substantial natural resources, with, for example, about 9 percent of the planet's supply of freshwater, 10 percent of its forests, and significant reserves of oil, gas, coal and minerals.

Canada is a federal state with 10 provinces and two territories. Our constitutional and political system results in all orders of government having some degree of authority for environmental, economic and social issues related to sustainable development. Governments have created mechanisms to co-ordinate their sustainable development policy making and activities. They also act independently within their spheres of jurisdiction.

Indigenous peoples in Canada play an important role in sustainable development issues. As a result of treaties and agreements, many indigenous communities have constitutionally guaranteed rights to the use of resources or lands. Continued reliance by indigenous peoples on traditional uses of renewable resources, and on traditional cultural values and ecological knowledge also underline the importance of the environment to many of these communities.

Canada's economy is based largely on free market principles. It is highly integrated into the global economy. Because our private sector has substantial freedom of action within legal limits, it has a significant responsibility for many aspects of sustainable development.

A tradition of organized action by groups and individuals is a basic part of Canadian life. Labour unions and community and non-governmental organizations (NGOs) are some of the groups that play a major role in determining the sustainable development priorities and actions of the Canadian people.

The local round table in London, Ontario, a community of 300 000, has organized a major conference, An Agenda for the Responsible City. It has also developed 500 "vision circles" (small meetings of citizens interested in participating in shaping the future of their community), involving more than 4000 people.

Canada has a long tradition of international co-operation. That co-operation has grown to encompass issues of sustainable development, particularly since the 1972 UN Conference on the Human Environment in Stockholm (Stockholm Conference). The primary vehicle for international development assistance is the Canadian International Development Agency (CIDA). Growing concern in Canada has led to the creation of new or expanded institutions focussing on different aspects of sustainable development. At the United Nations Conference on Environment and Development (UNCED), Canada announced that the mandate of the federally funded International Development Research Centre (IDRC) would be broadened to emphasize sustainable development and to support implementation of Agenda 21. In addition, private organizations, such as the International Institute for Sustainable Development (IISD), are also important sources of expertise and activity. The IISD was created to promote sustainable development in decision making and has research and communication programs linked to UNCED follow-up.

For a complete review of Canada's economy, people and environment, and the linkages between them, please refer to Canada's National Report, submitted to the UNCED Secretariat in 1991.

(a) The Concept of Sustainable Development

The debate in Canada on how best to integrate economic, environmental and social values into decision making has evolved since first gaining prominence as a result of the Stockholm Conference. That debate was further galvanized by the more integrated approach promoted by the 1987 World Commission on Environment and Development (WCED, or the Brundtland Commission).

As one of the first nations to respond to the results of the Brundtland Commission report, Canada established the National Task Force on the Environment and the Economy in 1986, bringing together representatives from all major sectors of Canadian society. In its 1987 report, the task force recommended a series of

actions to move Canada closer to the goal of sustainable development. Examples included the establishment of the IISD and the development of round tables on the environment and the economy, an initiative discussed later in Part I.

The essence of sustainable development is that a healthy environment and a productive resource base can bring about lasting economic benefits. Economic prosperity can ensure the capacity to support wise resource management and to protect environmental quality. It can support the development of the technologies needed to mitigate and prevent pollution and to improve human health. Economic prosperity can make it easier for all sectors of society to incorporate environmental considerations into decision making. Our task is to ensure that it does.

The province of Ontario has the highest level of recycling in the world thanks to its "blue box" program. Residents of municipalities that include 80 percent of the province's more than 10 million people have received these boxes to encourage them to separate recyclables such as glass, metal cans and newspapers. Studies show that more than 90 percent of people with blue boxes use them regularly. An important element of this program is the support it receives from Ontario Multi-Material Recycling Inc., an industry organization that includes grocery suppliers and packaging and soft drink manufacturers.

(b) Trends in Public Attitudes

There is growing recognition among Canadians that the economy and the environment are two sides of the same coin. Current public opinion research indicates that Canadians are deeply concerned over the quality of the environment.

Moreover, a very large majority believes that a strong and growing economy is compatible with, if not dependent on, a clean environment.

UNCED coincided with, and probably contributed to, an increasingly global perspective on the environment among the Canadian public. We believe that long-term solutions can be achieved only through global co-operation and local actions. Furthermore, opinion research indicates that 1993 was the first time that a majority of Canadians ascribed primary responsibility for environmental protection to individuals, as lifestyle changes are now seen as the key to solving environmental problems.

(c) Canada's Priorities at UNCED

At UNCED, Canada proposed a "quick-start" action agenda for international progress on sustainable development. We urged all countries to develop their own national sustainable development plans and strategies. We called for the expeditious signing, ratification and implementation of the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change. (Canada ratified both conventions in December 1992, becoming the first developed country to do so.) We encouraged developed countries to help developing countries make the transition to sustainable development on three related fronts — aid, trade and debt. Canada renewed its commitment to the United Nations, to the establishment of the CSD, and to other multilateral institutions. We urged states to work toward a global agreement to prevent overfishing on the high seas and toward establishing criteria, ideally through a global convention, to achieve the conservation and sustainable development of the world's forests.

Actions to Date

Canada's follow-up to UNCED is moving forward on several tracks. Central to this is a process characterized by transparency, inclusiveness, and accountability in reaching consensus on issues affecting the environment.

Domestic

(a) Major Groups and Individuals

Implementation of sustainable development is the responsibility of all Canadians. Individuals, institutions and major groups have been encouraged to participate in that challenge. Major groups have pursued many initiatives within their own areas of expertise. However, a focus of Canadian work has been the creation of mechanisms that bring representatives of major groups and other interests together to address significant issues that affect all Canadians.

(i) Round tables

One response has been the creation of round tables on the environment and the economy at the federal, provincial/territorial, and local levels. While they vary in their makeup and function, they share the goal of promoting the principles and practices of sustainable development by building consensus among representatives of important groups and sectors. They are forums where decision makers can candidly discuss environment-economy issues and make recommendations directly to government and private-sector leaders. There are now more than 100 local round tables across Canada. Most of the provincial/territorial round tables are engaged in developing, or have completed, sustainable development strategies for their jurisdictions.

A good example of the success of round tables is the work of the National Round Table on the Environment and the Economy (NRTEE) in seeking a consensus on sustainable forestry practices. Its Forest Round Table brought together representatives of all main groups with an interest in Canada's forests, such as labour, business, environmentalists, academics, indigenous peoples and governments. The members worked intensively over 18 months and put together a set of common principles to guide the future of Canada's forests. Each participating group is working on an action plan outlining the contribution it will make in support of these principles.

(ii) Projet de société

In November 1992, representatives from every major sector of Canadian society, including business, governments, and community, environmental and international development organizations, convened to find ways to engage the broadest possible spectrum of Canadians in meeting the UNCED challenges and to set a common course

The International Institute for Sustainable Development (IISD) has established the Earth Enterprise project to foster a support network for eco-entrepreneurs and to encourage them to take advantage of business opportunities that contribute to sustainable development. The project addresses sustainable development opportunities in markets, technologies, financing, and new business practices. It encourages fundamental change in business operation, including sourcing materials, waste management, and relationships with employees. This project has involved about 1000 people in Canada, the United States and Mexico.

of action for the transition to sustainability. They agreed that to achieve the required transition, Canadians needed a consensus-seeking coalition that would explore the means to spark the required actions, encourage collaboration and define appropriate mechanisms for reporting progress.

This partnership is based on the recognition of three principles. First, the transition to sustainable development is a collective responsibility. Second, all levels and sectors of society must be engaged in identifying and implementing the changes that will be necessary. Third, partnerships and networks, collaboration, consensus building and co-operation will be essential to facilitate agreed actions.

Efforts are being directed toward bringing Canadians together to mobilize for change, to plan a sustainable future, and to learn from experience. These are seen as necessary building blocks for a national sustainable development strategy for Canada.

The Government of British Columbia passed the Commissioner on Resources and Environment Act in 1992. The commissioner deals with issues of land use and related resource and environmental management, including the development of a province-wide strategy implementing regional planning processes, community-based, participatory processes, and a dispute resolution system. It will encourage the participation of indigenous peoples in all processes affecting them that relate to the commissioner's mandate.

(b) Federal Government

The Green Plan is the federal government's policy framework and action plan for sustainable development. Launched in December 1990, it addresses many of the priorities outlined in Agenda 21 that are relevant to Canada. It recognizes that we need to factor environmental considerations into decision making throughout society and its institutions in order to achieve sustainable development. Because the Green Plan was designed to adapt to new information and experience, it has evolved to meet emerging priorities such as UNCED commitments.

(c) Provincial/Territorial Governments and Intergovernmental Co-operation

The governments of the provinces and territories are central to Canada's agenda for sustainable development because of the division of powers in our federal system. They were active participants throughout the UNCED process and have responded in many ways since that time. For example, the Government of Quebec has created an interministerial committee on sustainable development to co-ordinate its actions.

Several organizations exist to improve cooperation among governments. A number of these have encouraged a harmonized approach to Canada's UNCED responses. For example, the Canadian Council of Ministers of the Environment (CCME) prepared an assessment of Agenda 21 and the conventions to guide its priorities and work plans, to determine its role in UNCED follow-up, and to encourage governments to do the same.

(d) Urban and Local Communities

A number of Canadian municipalities were active in the development of the Common Declaration on Behalf of the World's Cities and Local Authorities, which was presented to UNCED. Following UNCED, municipalities have continued to develop local environmental and sustainable development strategies.

The Federation of Canadian Municipalities (FCM) has created a checklist that addresses some of the sectoral issues raised by Agenda 21 and has encouraged its members to consider this list and its revised sustainable development policy as they develop local strategies.

International

A cornerstone of Canada's foreign policy is global progress on sustainable development issues. Canada is well positioned to participate in the resolution of these issues through activity in many key intergovernmental organizations, both within and outside the United Nations system.

We have helped develop many international agreements with sustainable development objectives, inside and outside the UNCED context. An example is the Arctic Environmental Protection Strategy (AEPS). It commits the eight arctic circumpolar states to a program of environmental protection and sustainable development that includes the indigenous peoples of the region.

(a) The Convention on Biological Diversity

Canadian governments undertook to fulfil their obligations under the Convention on Biological Diversity (the Biodiversity Convention) well before ratification. As the various orders of government have different responsibilities over natural resources, their ministers co-operated to endorse a follow-up plan. This includes the preparation of a Canadian Biodiversity Strategy by November 1994.

The development of this strategy is a co-operative effort by governments, with advice provided by the Biodiversity Convention Advisory Group, which consists of representatives from a variety of sectors including environment, parks and wildlife, forestry, fisheries, agriculture, mining, biotechnology, law, academia, business, labour and indigenous people.

Federal, provincial and territorial governments, through the CCME, the Canadian Parks Ministers' Council, and the Wildlife Ministers' Council of Canada, have developed a joint commitment to complete Canada's network of protected areas. They are co-operating to expand park systems and to protect special spaces and species, with a goal to set aside 12 percent of the country as protected space.

(b) The United Nations Framework Convention on Climate Change

Canadian governments and representatives of major groups, particularly industry, have been pursuing the domestic implementation of the United Nations Framework Convention on Climate Change through the quick-start agenda on climate change announced at UNCED. Canada has ratified the convention and is committed to adopting measures

The Government of New Brunswick has launched a number of new water management programs:

- *the Watershed Protection Program, to control land use activities and establish buffers along watercourses;*
- *the Groundwater Protection Program, to protect aquifers for municipal drinking water through a process of controlling land use activities within municipal well fields; and*
- *the River Classification Program, to establish water quality standards in rivers and lakes and address the sustainability of land use activities within watersheds.*

to mitigate climate change, adapt to its possible effects, increase public awareness and scientific understanding of climate change and possible responses, and work together with other countries in all of these areas.

As a first step, Canada has established a national goal to stabilize net emissions of greenhouse gases not controlled by the Montreal Protocol at 1990 levels by 2000. Canadian governments have joined with major groups and individuals to develop and implement actions to achieve that goal. The actions will be based on the principles and considerations in Canada's National Action Strategy on Global Warming and on similar strategies developed by provincial governments.

A Solid Waste Management Program will establish landfills that will be designed to meet high environmental standards and will result in the closure of dump sites that have potential to contaminate groundwater.

Canada recently issued a draft of our first National Report on Climate Change for discussion. It provides a snapshot of current actions by Canadian governments, NGOs, communities and the private sector. It will help develop a common understanding on progress and will provide a solid foundation for discussions on subsequent actions toward meeting domestic commitments and international obligations.

(c) Aid, Trade and Debt

UNCED made clear that action is needed on issues related to poverty and debt in the developing world in order to help developing nations and the globe as a whole make the transition to sustainable development. Canada's actions and priorities on these issues are discussed in Part II, Sections I (International Co-operation) and III (Financial Resources and Mechanisms).

(d) United Nations System

Since UNCED, Canada has played an active role in promoting more effective responses to sustainable development within several UN agencies. These include the CSD, the United Nations Environment Program (UNEP), the United Nations Development Program (UNDP) and the United Nations Centre for Human Settlements (UNCHS or Habitat). As Vice-Chair of the Bureau of the CSD, Canada is contributing to the ongoing work of the Commission and plans to participate in intersessional working groups on technology and finance.

Canada was very supportive of the participation of NGOs in the UNCED process and continues to encourage their involvement in the intersessional and sessional work of the CSD.

(e) High Seas Fisheries

At UNCED, Canada gained global support for a UN-sponsored intergovernmental conference to address the management of straddling fish stocks and highly migratory fish stocks on the high seas. Since then, there have been several initiatives, including

consultation on technical and scientific information under the auspices of the Food and Agriculture Organization (FAO), and a meeting of like-minded states that Canada hosted in St. John's, Newfoundland. Canada has played a leading role at the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks, including tabling a draft convention during the first substantive session in July 1993. Canada continues to work toward internationally binding rules to govern these fisheries.

(f) Forests

Canada has been working to build support for internationally accepted criteria for sustainable forest management, ideally embodied in a global forest convention. A standard set of rules would permit a more accurate measure of the sustainability of forest management practices.

Canada's National Forest Strategy sets out forest-related priorities for the next five years and provides the framework for effective implementation of the Guiding Principles on Forests, adopted at UNCED. Canada has developed a Model Forest Network consisting of 10 sites across Canada, in which sustainability issues such as wildlife habitat, biodiversity, watersheds, recreation, fisheries and economic uses can be addressed in major forest eco-regions.

The Model Forest Network is being matched by the International Model Forest Program. Mexico has agreed to be our first partner. It has identified two sites and committed itself to matching the Canadian contribution. Russia will be our second partner, with a site in the Eastern territory of Khabarovsk. Discussions are under way with a third potential partner state. A network connecting the domestic and international sites will provide a channel to share information, experience and technology, providing an opportunity to define sustainable forest management better.

Provinces play a key role in this sector and are sharing their experience. For example, the Government of British Columbia will co-operate with Malaysia to organize a school of forestry there with funding from the federal government.

Future Directions

The major challenge ahead is to build on the progress made to date to resolve existing environmental problems, integrate the environment into decision making to avoid the emergence of new problems, and develop policies that contribute to economic prosperity and government efficiency.

No one nation, government, major group or individual alone can make sustainable development a practical reality. All partners must continue their co-operative efforts to develop and implement action plans to achieve economic and social development that respects the environment.

(a) Progress Achieved

Governments, major groups and individuals across Canada have taken many actions to implement the decisions within Agenda 21. Individual examples are provided throughout this report.

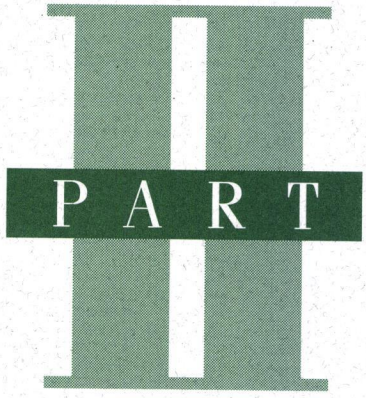
A key basis for future action is the immediate need to gather relevant and accurate information on what Canadians, their governments, major groups and institutions are doing to achieve sustainability.

The IISD, on behalf of the "Projet de société," is developing an information system to identify and communicate information about activities in Canada that support the UNCED agenda and show where future efforts should be directed to implement UNCED commitments. This information system will become a mechanism to be used by organizations wishing to share current and planned activities with others. It will also provide better understanding of the diverse initiatives being undertaken across the country and show where further actions are needed.

Some governments have also surveyed their programs that are relevant to UNCED. The purpose of these surveys is, in part, to identify the level of activity where opportunities for co-operation exist and where further action may be required.

(b) Problems and Constraints

During recent years, Canada's governments have faced significant financial pressure. Revenues have not kept pace with demands for services, leading to concern over levels of taxation and public debt. This has placed an increased emphasis on innovative and shared approaches to achieving the goals of a sustainable economy and society. Canadians increasingly recognize that there is a positive relationship between the environment and the economy, and are committed to the principles of sustainable development.



CROSS SECTORAL ISSUES

PART II, SECTION I
INTERNATIONAL CO-OPERATION

Promoting Sustainable Development Through Trade

Canada has been actively involved in promoting sustainable development through the negotiations to liberalize trade in the Uruguay Multilateral Trade Negotiations Round of the General Agreement on Tariffs and Trade (GATT), the Canada-U.S. Free Trade Agreement (FTA) and the North American Free Trade Agreement (NAFTA). Canada's view in these negotiations has been that trade leads to economic growth, which provides the resources for environmental protection; while a healthy environment provides the ecological and natural resources necessary to underpin long-run economic growth stimulated by trade. The Uruguay Round package, completed in December 1993, includes a number of provisions aimed at promoting sustainable development. Reduction or elimination of tariffs over time should promote environmental improvement via better access to goods and services, including pollution abatement equipment.

The NAFTA, which entered into force on January 1, 1994, preserves the right of each country to adopt the standards necessary to protect its environment. Canada, Mexico, and the United States specifically confirmed their commitment to sustainable development in the agreement. With freer trade and the environmental provisions and side agreements, the NAFTA should have a positive impact on the North American environment.

Canada is actively pursuing the improvement of the mutually supportive relationship of trade and environment policies. Indeed, environmental considerations were integrated into the mandate of Canadian negotiating teams for the NAFTA. Frequent and substantive contact between the Environmental Review Committee, provincial/territorial governments and non-governmental interests played an important role in the development of the NAFTA's environmental provisions. This was the first time such a process was used in the negotiation of a trade agreement. This was also the first time a trade agreement was subject to an environmental review.

Similarly, provinces/territories and other major groups played a major role in the development of the North American Agreement on Environmental Co-operation (NAAEC), which was concluded in 1993 and will enter into force in early 1994. The NAAEC, sometimes called the environmental side agreement, will complement the NAFTA by establishing a sound environmental foundation on which to build more liberal trading relations. Among other things, its provisions provide for increased co-operation on environmental issues.

Canada has also been actively pursuing the objective of linking trade and environment issues more effectively through international organizations. For example, the federal government has worked closely with interested domestic parties in making its contributions to the development of Guidelines for Improving the Mutual Supportiveness of Trade and Environmental Policies and Agreements by the Organization for Economic Co-operation and Development (OECD). Within the GATT, Canada has been an active participant in the Working Group on Environmental Measures and International Trade. Canada has also supported the work that has begun on packaging and labelling programs in the United Nations Conference on Trade and Development (UNCTAD).

Another Canadian initiative is the establishment of the Task Force on Trade and Sustainability, under the auspices of the National Round Table on the Environment and the Economy (NRTEE). This task force has advised the prime minister from time to time on the environmental dimension of trade agreements. It is currently examining issues like the trade and environment linkages in the context of the Asia-Pacific Economic Co-operation Forum.

The IDRC has initiated projects such as examining eco-labelling and trade with developing countries, and the IISD has brought together experts to develop Principles on Trade and Sustainable Development in order to help bring these policy fields together.

Providing Adequate Financial Resources to Developing Countries and Encouraging Macro-Economic Policies Conducive to Environment and Development

A fundamental aspect of Canadian international co-operation is involvement in bilateral and multilateral dialogue with developing countries and international financial institutions to promote the integration of development and the environment into policy. Canada has also encouraged multilateral agencies to incorporate poverty alleviation into mainstream programming and to put a greater focus on gender-related issues.

Canada's policies regarding development assistance and debt relief are discussed in Part II, Section III.

PART II, SECTION II
CHANGING CONSUMPTION PATTERNS

Background

Many Canadians have recognized the need to address issues of consumption and have translated this into actions. Opinion research indicates that Canadians believe that they will have to consume less and are willing to achieve sustainability through higher prices, as well as voluntary changes in lifestyles. Specific activities through which Canadians have demonstrated concern over their consumption patterns have included efforts to reduce household, business and industrial waste through recycling programs and composting, the use of products made from recycled materials, and improved energy and water efficiency and conservation.

Focussing on Unsustainable Patterns of Production and Consumption

Consumption issues have provided both a focus for attention and an opportunity for partnerships within and between agencies, institutions, businesses and communities.

Many Canadian NGOs have linked consumption issues to broader concerns about economic, political and social relationships in their public education efforts.

(a) State of the Environment Reporting

One method of informing people about consumption is through state of the environment reporting. State of the environment (SOE) reports provide current information on all aspects of the Canadian environment, including conditions and trends, relationships between human activities and the environment, effects of changes on ecosystems and resource use, and efforts to protect and restore the environment. This information can help government policy makers, private-sector decision makers and consumers make responsible choices. Canada's national 1996 SOE report will include a chapter on

changing lifestyles. It is hoped that as public awareness of the links between consumption and the state of the environment grows, it will be possible to take greater action to shift consumption patterns.

SOE reports have been produced by governments and industry. To date, for example, in addition to the national SOE report, the governments of six provinces have produced SOE reports for their jurisdictions.

SOE reports such as those produced by Canada and British Columbia focus on the health of entire ecosystems. This effort at ecosystem tolerance modelling attempts a far more integrated analysis than might be the case with a report that focussed on the levels of specific pollutants.

As part of understanding changes in the Canadian environment, Canada is developing a national set of environmental indicators that will be understandable, scientifically credible and useful to decision makers and the public. The development of indicators, such as energy consumption and municipal water use, that can track consumption patterns is currently under way.

(b) International Activities

Both CIDA and the IDRC are working to promote more sustainable patterns of consumption and production in other countries. One example from CIDA is its work with Nicaragua to improve and expand portions of that country's electrical transmission network. The $10-million project will reduce electrical system losses and therefore the need to burn fossil fuels. If the project meets its expectations, it will result in a reduction of approximately 60 000 tonnes of carbon dioxide emissions annually.

Developing National Policies and Strategies to Encourage Changes in Unsustainable Consumption Patterns

Major groups and governments in Canada have strategies designed to encourage more sustainable consumption patterns. Examples of these initiatives can be organized under the headings of the Agenda 21 chapter on consumption as follows.

(a) Encouraging Greater Efficiency in the Use of Our Resources

The Environmental Partners Fund of the federal government's Environmental Citizenship Initiative has targeted part of its funding to assist community groups in carrying out composting and recycling projects. Although recycling projects have dealt specifically with reducing the amount of waste entering landfills, a large percentage of these projects have also included a component to inform the public about recycling and to encourage reduction and reuse of products.

Electrical utilities in Canada are moving from supply-side management to demand-side management to reduce peak demands (thereby delaying major capacity additions) and

to reduce electricity use. These efforts are already having an impact on energy conservation. Ontario Hydro is Canada's largest electrical utility. As of 1992, it estimated that its energy management initiatives had resulted in a 3-percent reduction in demand. The estimated savings were 312.4 megawatts of demand and 1.8 terawatt-hours of energy.

The United Church of Canada, one of the largest denominations in the country, provides another example. It has made consumption and lifestyle change the cornerstone of its policy statement "One Earth Community — Ethical Principles of Environment and Development." It encourages members to evaluate religious buildings for responsible use of energy and materials.

For Canadian Inuit, who are being compelled to change their traditional lifestyles because of environmental contamination, the key variable in changing consumption patterns is sustainable use of wildlife resources. The AEPS includes a focus on the sustainable utilization of resources in support of Inuit concerns.

(b) Minimizing the Generation of Wastes

The National Packaging Protocol (NAPP) is a set of policies aimed at minimizing the environmental effects of packaging and reducing the amount of packaging sent for disposal by at least 50 percent of 1988 levels by 2000. The interim target of 20 percent set for December 31, 1992, has been achieved.

Developed by a task group representing governments, the packaging industry, and consumer and environmental groups, the NAPP was adopted by the CCME in 1990. The task group developed the Canadian Code of Preferred Packaging Practices to help manufacturers, marketers and distributors of packaging assess the environmental implications of their packaging and alter design and production to minimize waste. The NAPP has led to a National Packaging Monitoring System that monitors targets as well as the amount of packaging being produced, used, reused, recycled and disposed of.

Several provincial governments have introduced waste minimization programs, including:

- Saskatchewan's waste minimization strategy, including lifecycle costing;
- Alberta's Action on Waste program directed at reducing the amount of municipal solid waste handled by 50 percent by 2000; and
- Manitoba's recycling program, aimed at bringing recycling to approximately 75 percent of households by 1996.

Other examples of this type of activity are included in Part III, Section IV.

(c) Assisting Canadians to Make Environmentally Sound Purchasing Decisions

The federal government's Environmental Choice Program is a Green Plan initiative that assesses and provides information on products and services that ease the burden on the environment. The EcoLogo is the program's symbol of certification for products and services that meet or exceed an established set of environmental criteria developed by the Environmental Choice Board and open to public review. To date, products ranging from reusable cloth diapers to recycled paper and from water-conserving showerheads to re-refined motor oil bear the EcoLogo.

(d) Improving Government Purchasing and Procurement Policies

The Federation of Canadian Municipalities (FCM) is encouraging municipal responses to sustainable development and has cooperated in the development of guidelines for Procurement Policies on Packaging, a voluntary measure to help municipalities support markets for recyclables and encourage diversion of packaging on the part of their suppliers.

The Environmental Stewardship Program was launched by the federal government in 1992. This program includes principles for incorporating environmental concerns into decisions regarding procurement processes, waste reduction and water conservation in federal facilities, environmentally responsible building design and construction, and public employee education and training opportunities.

(e) Moving Toward Environmentally Sound Pricing

Movement toward environmentally sound pricing will involve action by both businesses and governments. Businesses and their related professional organizations are working to meet the increasing environmental expectations of Canadian consumers.

The Canadian Institute of Chartered Accountants is working to promote and strengthen corporate environmental accountability. In conjunction with the IISD, the Canadian Standards Association, and the Financial Executives Institute of Canada, it has prepared a discussion paper, Reporting on Environmental Performance, to address such questions as why organizations should report environmental performance, what they should be reporting, and how companies go about performance reporting.

The Canadian Manufacturers' Association, an umbrella organization of close to 2000 manufacturers, has developed a Manufacturing Environmental Performance Program. It includes a reference guide on improving environmental performance, an environmental co-ordinator's handbook, a guide to government legislative requirements, a resource handbook, an executive forum, and a register of "environmental success stories."

(f) Reinforcing Values that Encourage Sustainable Production and Consumption Patterns

The Canadian Labour Congress, which represents 2.2 million workers, is holding its 1994 conference on the theme of "Organizing for Environmental Change." Its environmental education program focusses on workers as consumers and citizens and makes direct links between workers, production and consumption. Its union education course examines environmental issues and solutions, including consumer action and boycotts, solid waste reduction, workplace and community action, and workplace environmental audits.

Des watts entre les deux oreilles is a joint publication of several Quebec agencies and institutions dealing with energy education, efficiency and conservation. It is notable in its promotion of the six R's (rather than the usual three): reduction, reuse, recycling, re-evaluating value systems, restructuring our economic systems and redistributing resources.

Problem Areas and Serious Challenges to be Overcome

Changing consumption patterns is difficult because it requires fundamental decisions about the lifestyles that many people have and the lifestyles to which many more aspire.

The growth of "green consumerism" in Canada demonstrates that public concern over the environment is leading to more environmentally responsible production and consumption. At the same time, there is at least some recognition that sustainability demands lifestyle changes, even though traditional economic indicators report the absence of spending as a serious crisis of consumer confidence.

It is essential to discuss consumption patterns in ways that go beyond the individual and the household. How waste, packaging, energy, and water are used has profound implications for non-renewable resources, natural areas, wildlife, agricultural land, wetlands, and human communities. Connections must be made between consumption, sustainable economic development, and ecosystems in Canada and around the world.

Information gathering must assume a higher priority so that sustainability efforts can be better monitored and shared, and so that gaps and deficiencies can be more readily identified.

NGOs concerned with the environment and with development continue to play key roles in drawing public attention to these issues and in sparking debate over the implications of changing consumption patterns.

PART II, SECTION III
FINANCIAL RESOURCES AND MECHANISMS

Introduction

Much of Canada's activity related to the financial resources and mechanisms necessary to implement Agenda 21 in developing states takes place through activities funded by the federal government under its official development assistance (ODA) program and the Green Plan.

International Partnerships

The Green Plan recognized the importance of international partnerships and has provided new and additional resources for international actions to follow up on UNCED. Key initiatives that Green Plan resources are helping to support include the Global Environment Facility (GEF), the Montreal Protocol Multilateral Fund (MPMF) and the United Nations Environment Program (UNEP) Environment Fund. Green Plan funds are also used in support of specific bilateral activities, such as the International Model Forest Program described in Part I and a bilateral program with Mexico.

At UNCED, it was agreed the GEF would be the principal mechanism through which new and additional resources would be available to assist developing countries address specified global environmental problems. The federal government has committed $25 million to the pilot phase of the GEF. Negotiations on replenishing and restructuring the GEF are currently under way. At UNCED, Canada announced its intention to assume a fair share in the replenishment currently under negotiation.

As part of its commitment to quick-start action on the conventions agreed to at UNCED, Canada convened workshops to develop the linkages between the GEF and the conventions on biological diversity and climate change.

The MPMF was established to assist developing countries to phase out ozone-depleting chemicals and to replace them with benign alternatives. Canada has contributed approximately $15 million to the fund, which includes costs related to the administration of the secretariat, located in Montreal. Canada is committed to contributing $24 million to the current MPMF replenishment.

Federal government support for UNCED follow-up initiatives includes $2 million by 1996 for Capacity 21, a United Nations Development Program (UNDP) initiative to assist developing countries in sustainability planning. The IDRC has also organized a consultative group on capacity building in developing countries in co-operation with its Swedish equivalent, SAREC. Canada is also providing funds to assist developing countries and NGOs participate in key international negotiations following up on UNCED, including the High Seas Fisheries Conference, the first session of the CSD, and negotiations on a convention to combat desertification.

Canada is also funding a legal adviser to the Inter-governmental Negotiating Committee on Desertification for a 15-month period. A key international institution in the follow-up to UNCED is the UNEP. Canada contributes $2.2 million a year to UNEP's Environment Fund.

Canada has the lead role in an OECD study of the coherence of development project environmental assessment procedures among donor countries. Canada is also leading that organization's effort to establish internationally agreed guidelines and tools for environmental capacity development. In October 1993, Canada hosted an international workshop in Ottawa for the OECD on national sustainable development planning.

Canadian Official Development Assistance

In its follow-up to UNCED, Canada will continue to focus on the effective mobilization of resources from all sources. The major source of concessional financing to developing countries will continue to be ODA through bilateral and multilateral channels.

The primary purpose of Canadian ODA is to help the poorest countries and people in the world. At UNCED, Canada reaffirmed its commitment to reach the ODA/GNP target of 0.7 percent as soon as possible. Canada remains committed to this target, although efforts to move forward must be balanced against the reality of fiscal restraint.

Canada is committed to the integration of the principles of sustainability into its ODA program. We are working with our domestic and international partners to improve the capacity of developing countries to foster development that is environmentally sustainable.

In 1992, following an intensive process of consultation with its partners, CIDA released its Policy for Environmental Sustainability. This policy is an important element of CIDA's framework for sustainable development and is an integral part of meeting the agency's mandate to promote sustainable development.

The main thrusts of the policy are to integrate environmental considerations into decision making and programming, to give a high priority to helping developing countries improve their capacity to deal with environmental issues and concerns, and to work closely with Canadian and international partners to help them address the challenge of integrating environmental considerations into their activities. The policy encourages developing countries to work together with CIDA to implement comprehensive national programs that promote environmental sustainability.

In 1992, Canada estimated that during the previous five years CIDA had committed $1.32 billion to environment and development programming directly relevant to Agenda 21.

One example of Canada's commitment was the decision to expand the mandate of the IDRC to be a lead organization in the implementation of Agenda 21, with a particular focus on sustainable and equitable development. The IDRC's annual funding of $115 million is now directed to six core themes of Agenda 21: integrating environmental, social and economic policies; technology and the environment; food systems under stress; information and communication; health and the environment; and biodiversity.

Multilateral Development Assistance Organizations and Funding Mechanisms

Canada fully supports reform of international organizations and development assistance programming to ensure the incorporation of sustainable development principles. To that end, we attach considerable importance to donor co-ordination and participate actively in consultative mechanisms to ensure that the donor community can contribute in the most effective way to sustainable development.

Canada has pressed international organizations to better reflect sustainable development considerations in their operations. We have urged the International Monetary Fund to factor environmental considerations into the design of its macroeconomic program. We have used the replenishment negotiations and annual meetings of the regional development banks and the World Bank to persuade those institutions to better integrate environmental and social factors into their analysis and operations.

The International Development Association (IDA), part of the World Bank, provides highly concessional financing for the world's poorest nations. Canada is an active participant in IDA and committed $829 million to the replenishment that concluded

early in 1993 ("IDA 10"). This represents a 4 percent share, making Canada the seventh largest donor in IDA. During the IDA 10 negotiations, Canada strongly advocated the integration of sustainable development throughout IDA's project and program portfolio. Canada views the main objectives of IDA — poverty reduction, economic adjustment and environmental sustainability — as integral to the success of Agenda 21.

Agenda 21 proposes a number of innovative approaches to generating additional financial resources, and Canada is following up on some of them. At UNCED, the federal government announced an initiative to convert up to $145 million of bilateral ODA debt held by countries in Latin America into local funds to help finance environment and sustainable development projects. CIDA, the agency responsible for this initiative, has negotiated and signed debt conversion agreements with El Salvador, Honduras, Nicaragua and Colombia, involving the conversion of some $80 million of outstanding debt. In these countries, local currency proceeds from the conversion are deposited into a bank account for the financing of local projects. In some cases, responsibility for programming is handed over to a local NGO, for example, ECO FONDO in Colombia.

Debt relief can be an important aspect of freeing up funds for sustainable development. However, it requires a co-ordinated approach from bilateral and multilateral donors to ensure that such measures contribute to long-term sustained development. Canada pressed for such co-ordination at the 1993 G-7 Summit in Tokyo and has participated actively in recent exercises sponsored by the World Bank to clear arrears for Viet Nam and Haiti.

PART II, SECTION IV
TECHNOLOGY TRANSFER, CO-OPERATION, AND CAPACITY BUILDING

Environmental Technology Development in Canada

The Canadian environmental industry consists of some 4 000 companies that employ more than 82 000 people, and generates annual revenues of about $10 billion. A number of companies have come together to create the Canadian Environmental Industry Association (CEIA).

Governments support research and development in this industry through tax incentives, direct grants, and funding of research in institutions across the country. This support has helped Canadians to develop considerable expertise in industrial and municipal wastewater treatment, site clean up, air emission control, solid waste management, plant safety and health technologies, and remote sensing for land, agricultural, forestry and fisheries management. The application of environmentally sound technologies that will improve the efficiency and environmental performance of traditional manufacturing and resource-processing sectors is another area of particular emphasis.

Governments also support efforts by these industries and by researchers to meet international needs through agreements with other countries, joint ventures and technology transfer. The federal government has focussed its technological co-operation and capacity-building efforts on particular areas of Canadian expertise and to countries such as Mexico, Malaysia and China.

One other area of growing international interest that Canada supports is the preservation of the traditional ecological knowledge of indigenous peoples. This is becoming an important component in the management of natural resources. Canadian indigenous communities are developing the methodologies and technologies for the collection and presentation of this information within co-management structures. Canada is promoting the recognition of this knowledge under the AEPS.

Key Domestic Activities in Support of Agenda 21

Programs funded by the federal government include the Environmental Innovation Program, which supports innovative proposals for processes and technologies to address environmental threats; the Environmental Technology Commercialization Program, an $80-million fund for the demonstration and commercialization of new environmental technologies; and the Development and Demonstration of Resource and Energy Conservation Program, which encourages innovative technologies that recover energy and reduce pollution. These programs are also typical of many operated by provincial governments.

In June 1993, the federal government, in partnership with the CEIA, research institutions, utilities and venture capitalists, established three National Environmental Technology Advancement centres under the Green Plan (in Sherbrooke, Quebec; Toronto, Ontario; and a third in a location not yet decided). These centres are designed to provide technical, managerial and financial expertise to small- and medium-sized enterprises that develop and commercialize environmental technologies, and to provide much-needed private venture capital. These centres will also supply companies with opportunities for access to international markets.

National capacity building also requires training programs. University degree-granting programs are often partners with industry through the Canadian Network of Centres of Excellence. Important programs are offered at McMaster University (Hamilton, Ontario), specializing in environmental engineering; École Polytechnique (Montreal, Quebec), specializing in drinking water; and the University of British Columbia (Vancouver, British Columbia), specializing in forest industry wastewater treatment. Canadian technical colleges deliver diploma, certificate and professional development programs in all aspects of applied environmental science and engineering technology.

Established in 1992, the Canadian Environmental Training Initiative (CETI) plans to provide management training in pollution control and prevention strategies, treatment facility operations, and environmental technology applications. CETI programs are designed to serve students working in Canada as well as to be exported as facets of technology transfer to developing countries. Among the other leaders in provision of non-degree training programs are the Wastewater Technology Centre (Burlington, Ontario) and the National Environmental Technology Advancement centres referred to above.

Key Internationally Focussed Activities in Support of Agenda 21

Technology transfer to other countries is channelled through a variety of sources. For example, technology transfer is an integral part of CIDA programming. Most development projects managed by CIDA incorporate training programs designed to assist clients in maximizing potential project benefits. That training also helps clients to use the technologies and training in innovative ways to deal with other problems.

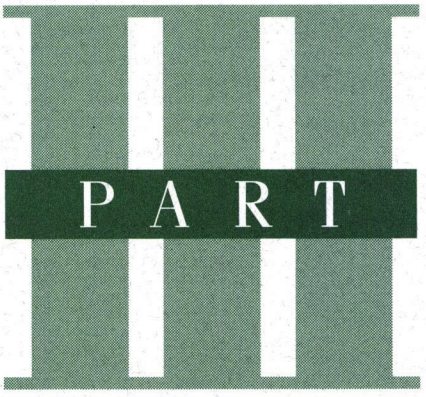
One specific program is the $5-million Project Support for Environmental Technology Co-operation program that was announced at UNCED. The goal of this program is to assist developing countries to establish a capacity to produce environmental technology adapted to their needs. The vehicle for this will be long-term co-operation between Canadian environmental technology producers and developing countries. Seven projects have been funded to date.

Vancouver hosts the biennial GLOBE conference, the world's largest environmental goods and services exposition. GLOBE '92 attracted more than 12 000 people from 74 countries. As in 1992, GLOBE '94 (March 1994) will display current developments in environmental technology. The GLOBE Conference represents an opportunity to forge research and commercial links between Canadian and international partners.

Since information on technology transfer opportunities is found in a multitude of sources, efforts are under way to establish a Canadian Environmental Technology Clearinghouse that would complement the activities of UNEP's International Clean Production Information Clearinghouse. It would provide information on funding mechanisms; on technology seminars, conferences and training programs; and on specific environmental goods and services. A number of organizations, including the IDRC, are investigating the potential for different versions of "technology clearinghouses" that will facilitate technology co-operation, capacity building and joint ventures between particular regions or governments.

Mexico has been a focus of Canadian assistance, including technology transfer, since the signing of an agreement on environmental co-operation in 1990. This received $1 million in support from the Green Plan International Partnerships Fund in fiscal year 1992-93 and the same amount in fiscal year 1993-94. Canadian and Mexican officials are currently working closely to implement projects in the areas of water clean-up technologies, air pollution control, and environmental enforcement.

Transfer of environmentally sound technologies plays a pivotal role in Canadian and multilateral projects in other countries. For example, the IDRC is supporting the development of a major South American network focussing on problems with drinking water distribution and solid waste management in 14 urban centres located in seven different countries. It also has a unique initiative under way in Asia to collect moisture from fog for irrigation purposes. Canadian technology is also at work in a World Bank program for water and sewage treatment in Argentina.



SECTORAL ISSUES

PART III, SECTION I
PROTECTING AND PROMOTING HUMAN HEALTH

Health Care in Canada

Canadians enjoy a good standard of health and health care based on a publicly financed, comprehensive health insurance system that covers medically necessary services for its residents. This system is administered by the governments of the provinces and territories, which have constitutional authority for health within their jurisdictions, with funding contributions from the federal government.

Provincial and local health authorities also manage primary health services in their areas. Some of these activities have environmental relationships, such as the provision of safe water and sewage treatment, communicable disease surveillance and control, and health education. The effectiveness of this system is suggested by the fact that infectious diseases accounted for only 1.3 percent of total deaths in 1991, and infant mortality rates are currently approximately seven deaths per thousand.

Health Promotion and Environmental Factors

Since the beginning of the 1980s, governments have directed considerable attention to health promotion. Examples include efforts to reduce tobacco use and to prevent the spread of AIDS. As environmental concerns have grown in importance, governments, health professionals and NGOs have begun to address the relationships between the environment and health.

The 1992 annual conference of the Canadian Public Health Association centred on the theme "The Environment and Our Health: A Question of Survival." The 1993 conference focussed on "Sustaining Our Communities: Health for the Future." Many other organizations are involved in similar activities. Some provincial ministries of health have developed focal points to deal specifically with health and environment issues and to monitor environmental risks to health. Many NGOs and groups of health professionals have demonstrated strong interest in this issue.

The roles of women, in particular as workers and childbearers, give rise to concern about exposure to environmental risks. For example, the federal government's Department of Health has been working on four studies to address this issue. One examines the health of women and children in farm families. The others consider the relationships between exposure to environmental risks, such as to pesticides, and adverse reproductive outcomes (e.g., miscarriage, birth defects); the impact of high-risk geographic areas (e.g., toxic dump sites) on birth outcome; and the effect of specific environmental risks on women's reproductive health.

Similarly, increasing attention is being paid to the health needs of indigenous peoples. Programs are underway by indigenous peoples, by governments, and by other groups such as the Centre for the Nutrition and the Environment of Indigenous People at McGill University (Montreal, Quebec). Some health issues have arisen from lifestyle changes. Others have distinct environmental aspects. Contamination or disruption by industrial pollution of traditional food sources such as fish has affected the health of many indigenous communities.

One example of attempts to understand and address this problem is the EAGLE project, which examines health and environment issues of concern to indigenous communities in the Great Lakes region. Farther north, the arctic environment is often subject to effects from distant pollution sources. The AEPS addresses the most pressing environmental issues in a region in which indigenous people form a majority of the population. One of the major goals of the AEPS is to foster sustainable development in partnership with northern indigenous organizations and governments.

Another example of an integrated approach to health is the Healthy Communities Network project. Its goal has been to expand the boundaries of health promotion by including environmental and economic considerations.

The Action Plan on Health and the Environment

Since early 1991 the Action Plan on Health and the Environment, the health component of the Green Plan, has had a number of initiatives under way in four major areas: regulation and monitoring, groups at risk, facilitation of individual and community action, and international activities.

In the area of regulation and monitoring, the federal government's Department of Health is creating new legislation and enhancing existing regulations to reduce health risks associated with air, water, soil and food. Programs seek to link pollutants to health outcomes, such as the effects of airborne pollution on human respiration.

As noted above, groups at risk include indigenous peoples and residents of northern Canada who may depend on the natural environment for their regular diet and who may be at risk if their food sources are polluted. Newborn infants and children are another such group, since they are particularly susceptible to high levels of pollutants.

The action plan is helping inform people about how their own actions can make a difference to their health, while at the same time preserving and enjoying the environment. These "awareness" initiatives interpret scientific information for the layperson and help the community to promote healthy environments.

International Links

Canada participates actively in the programs of the World Health Organization and the Pan-American Health Organization. Because human health influences and is influenced by other social, economic and environmental factors, CIDA health programming is often integrated with work in other relevant sectors. For example, a rural health project in Bolivia is integrated with a water-supply project, and in southern Africa, AIDS is being addressed through a community development project.

The IDRC conducts a number of projects focussed on health and the environment. Examples include research into the environmental and health hazards of energy (South Africa); cultural factors in childbearing and use of health factors; health, environment and development of the Pacific region; and the socio-economic impact of cholera.

PART III, SECTION II
PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Housing and Human Settlements in Canada

The Canadian view of sustainable human settlement development implies the need not only to achieve economic objectives and maintain ecological integrity, but also to consider the importance of a variety of social considerations, such as housing affordability, community equity, and responsiveness to changing demographic and other conditions. In Canada, not only are efforts being made to build more environmentally responsible homes, but communities themselves are examining ways to plan and manage their operations to minimize their impact on the environment and enhance the quality of life.

Provincial and territorial governments develop and implement overall housing and land use policies within their boundaries, and the private sector develops housing within these laws and regulations. Municipal governments are generally responsible for administering building codes, regulating the use of land within the municipality, and providing infrastructure such as local roads and water and sewer lines, often with the support of senior governments. The federal government is involved in the development, funding and operation of national social and market housing programs, which are often delivered in co-operation with other governments and non-profit organizations. The non-profit and co-operative housing sectors also play a vital role in the development and administration of assisted housing in Canada.

More than 90 percent of Canada's 10.1 million households reported no need for any significant repairs to their dwellings in 1992. Almost 90 percent of households are able to obtain physically adequate, uncrowded housing for 30 percent or less of their household income.

The urban population of Canada is served by an extensive water and sewer infrastructure. By 1992, of the 23.4 million residents of municipalities in Canada with more than 1000 people, 91 percent were served by municipal water, 88 percent by municipal sewers, and 75 percent by sewage treatment. The rural population and those in municipalities not served by municipal systems have private water and sewage systems such as groundwater wells and septic tanks with tile fields.

Housing and human settlements are issues that Canadians address in partnership. Successful solutions to the need for affordable, appropriate housing demand co-operation between governments, the private and non-profit sectors, communities, and individuals. A key to finding successful solutions is local participation in the implementation of local programs at that level.

Domestic Progress Toward Sustainable Housing and Human Settlements

Housing supply policy in Canada has been characterized by two principal thrusts. One is based on the belief that the housing needs of most Canadians are best met by the private marketplace. A network of programs is in place to assist the housing market to function more effectively, for example, loan guarantees and mortgage insurance to facilitate financing, and dissemination of research and information on markets and housing technology to enhance the private sector's ability to provide quality, affordable housing. Another example is the Canadian Centre for Public/Private Partnerships, which explores innovative ways of co-operating to produce low- and middle-income housing.

The second thrust, to assist households that cannot obtain or afford adequate and suitable housing in the marketplace, has included initiatives such as providing social housing for families and seniors at subsidized rents and funding non-profit groups and organizations that provide housing for disadvantaged groups. Other examples are grants and low-interest loans to help low-income home-owners repair their homes, rent supplements to low-income renters in the private market, and tax credits to reduce housing costs, often for seniors.

With increased attention being paid to sustainability, governments, institutions and other groups have significantly increased their research and co-operation on housing and land use issues. A number of national, regional and local organizations and committees have been established to direct and co-ordinate Canadian human settlement efforts, such as the National Housing Research Committee, the Intergovernmental Committee on Urban and Regional Research, the Technical Research Committee of the Canadian Home Builders' Association (CHBA), and meetings of federal/provincial/territorial ministers.

An increasingly important element of housing and settlement policy is the promotion of sustainable communities and good living environments. This has progressed on several fronts.

(a) Energy and Resource Use

Given the Canadian climate, improved energy efficiency in housing is important. For example, the National Research Council's Institute for Research in Construction recently transferred a heat pump/chilled foundation technology to the private sector for application in cold climates. This technology is expected to revolutionize foundation construction, saving local governments millions of dollars annually. The federal Department of Natural Resources and the CHBA have developed and promoted the R-2000 energy-efficient home program. This is a performance standard of designing, constructing and equipping a home to high levels of energy efficiency, comfort and control.

There has been extensive research in recent years on many energy-related subjects. One area of research has looked into ways to improve energy efficiency through better building practices and passive solar design. Another has examined means of exploiting ambient energy through new technologies such as ground-source heat pumps. Others have included reducing the consumption of freshwater in homes, improving their internal environments by curbing material emissions and spillage of combustion products from heating appliances, and solving mould and moisture problems.

Another high priority has been reducing the volume of residential construction waste and encouraging the use of more recycled content in building materials. Two such programs have been successful in Edmonton and Toronto. Similarly, in Saskatchewan, a "Construction and Development" advisory group to that province's round table produced a report on achieving sustainability in the construction industry.

The Canada Mortgage and Housing Corporation is the federal government's housing agency. Its "Healthy Housing" initiative is a recent attempt to deal comprehensively with community, housing and indoor air quality issues. This initiative involved a design competition in which competitors were encouraged to propose innovative and integrated solutions to a broad range of design criteria, including occupant health and safety, energy efficiency, resource efficiency, environmental responsibility, and affordability. The two winning designs are being built in Toronto and Vancouver.

(b) Promoting Sustainable Land Use Planning

It is increasingly recognized that sustainable housing and human settlements must be treated as comprehensive systems with many components. That understanding is changing land use processes. New models of community design have been developed that encourage more environmentally responsible planning. This includes a variety of housing types and forms that reduce land requirements and encourage public transit, walking and cycling as alternatives to automobile use.

In recognition of the shortcomings of prevailing residential development patterns, flexibility and innovation in the planning and design process are being promoted through "Affordability and Choice Today," a national program designed to encourage regulatory innovation.

Government policies are beginning to stress greater land use intensification in communities and a mix of dwelling types. Well-designed infill housing and apartments in existing homes can double a community's density and create more efficient use of community resources. Given limited resources, efforts are being undertaken to integrate housing and community support services, such as infrastructure and transportation systems, more effectively. For example, the Government of Ontario's Land Use Planning for Housing policy statement encourages municipalities to provide opportunities for residential intensification and requires that 25 percent of new development be affordable. It is also developing a number of other initiatives to encourage more compact communities. In Montreal, a working group is examining sustainable urban development and the more efficient delivery of municipal services in the region.

Improved land use also applies to rural areas. The recent New Brunswick Commission on Land Use and the Rural Environment recommended policies to encourage compatible rural development, environmental protection and the preservation of valuable agricultural land. The Rural and Small Town Program of Mount Allison University is completing a pilot project with several communities to create practical tools and documents around the themes of strategic planning, self-help, community leadership and sustainable development.

Although some indicators have already been developed, such as those for community quality of life, there is a still a great need for more instruments to measure progress toward a sustainable quality of life. This means clearly defining objectives and putting into place the appropriate indicators to track this progress.

Canada Water Book on Flooding

Agenda 21 promotes human settlement planning and management in disaster-prone areas. The Canada Water Book on flooding describes what Canadians have done to prevent and prepare for floods by:

- *establishing a federal-provincial/territorial Flood Damage Reduction Program to reduce the amount of property damage and suffering caused by floods;*
- *identifying flood risk areas and discouraging floodplain development to reduce social and economic costs;*

(c) Disaster Planning and Preparedness

In September 1993, Canada established a National Committee for the United Nations International Decade for Natural Disaster Reduction (IDNDR), which will undertake initiatives to improve land use planning, risk management, construction standards, public education, warnings and other ways of mitigating natural disasters. The committee has distributed the recently published Canada Water Book on flooding to the National Committees and Focal Points for IDNDR. The book shows the close link between disaster mitigation and the sustainability of economic and social development. Because of increased concern over earthquakes, the British Columbia government has developed a Post-Earthquake Safety Program.

• creating flood-forecasting centres integrated with emergency measures organizations; and

• promoting public awareness of floodplains.

The book is the result of the collboration of federal, provincial and municipal governments and agencies and U.S. organizations. Personal accounts of floods by private citizens provide an added dimension to the scientific reporting.

(d) Other Activities

The CCME and the FCM are working together on a "Municipal Primer on UNCED." This will help to make Canadian municipalities more familiar with the outcomes of UNCED and steps they should take to respond.

International Links

CIDA is funding numerous projects directly concerned with improving the living environment of the poor overseas. Examples include support through its Centres of Excellence Program for the University of British Columbia Centre for Human Settlements (Vancouver, B.C.) and the Montreal Inter-University Group's "Villes et Développement." Both research human settlement issues in developing countries. In conjunction with the FCM, CIDA is funding the project "Africa 2000: Municipal Response," which links Canadian and African local governments to increase the latter's capacity to address the growing problems of urban management. Also, CIDA supports Rooftops Canada, which works in sustainable human settlement development with partner NGOs in the south.

The IDRC has been assisting researchers in developing countries to seek indigenous and sustainable solutions to development problems. For example, the IDRC, CMHC, and federal Department of the Environment have provided funding for the Local Agenda 21 Model Community Program, organized by the International Council for Local Environmental Initiatives. This program will build local government capacity to address environmental problems in 21 municipalities around the world. The Region of Hamilton-Wentworth in Ontario was the first municipality to be selected and is one of only two North American municipalities that will participate. Its Task Force on Sustainable Development has developed guiding principles as well as detailed strategies and actions to create a sustainable region.

Canadian municipalities have continued their international co-operation efforts since UNCED. In 1993, Canada hosted two international conferences of municipal organizations. The International Union of Local Authorities met in Toronto in June under the theme of "Strengthening Communities." In September, the Montreal Urban Community co-ordinated Métropolis '93, the Congress of the World Association of Major Metropolises. The theme of this congress was "The Citizen and Sustainable Development." Both were successful in following up on the global agenda for local sustainable development.

PART III, SECTION III
PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER

Introduction

Partnerships have become fundamental to addressing freshwater issues in Canada. One is the work of the CCME in developing a water strategy. This will include water conservation initiatives, water quality guidelines, and development of a work plan for aquatic ecosystem health.

There are also numerous examples of efforts by major groups to address freshwater issues. For example, NGOs have recently organized a national water caucus under the auspices of the Canadian Environmental Network (CEN). The objectives of the caucus are to help the many environmental organizations working on local and regional water issues to share information, develop joint strategies, and provide advice to governments. Among the major issues of interest to the caucus are water diversion and exports, reduction in toxic discharges, groundwater quality and quantity, aquatic ecosystem health, and drinking water quality.

Several Canadian NGOs jointly organized the International Secretariat for Water, an international NGO headquartered in Montreal. Its aim is to foster co-operation among NGOs of all countries that are involved in drinking water and sanitation improvement for people in the Southern Hemisphere.

Integrated Water Resources Development and Management

As part of Canada's efforts to ensure that economic development takes place on a sustainable basis, governments are moving toward an ecosystem approach to analyzing environmental issues and to strike the necessary balance between competing demands. This has impacts on water management.

The Government of Alberta's new Environmental Protection and Enhancement Act takes an integrated approach to the protection of air, land and water. Sustainable development is the central principle of the act. As well, the Alberta government is undertaking a major review of water policy and legislation that will address allocation of water rights, protection of the aquatic environment, and water conservation.

Governments and major groups have worked together on a series of integrated assessment and environmental management plans for some of Canada's major river basins and the Great Lakes. For example, the proposed Mackenzie River Basin Transboundary Waters Master Agreement establishes common principles for the co-operative management of the aquatic ecosystem of that river basin, including processes to ensure participation by the indigenous peoples of the region.

Initiatives like that combine the efforts of governments with the development needs and goals of local and regional communities. They address pollution prevention, remediation, and protection and enhancement of aquatic habitat from an ecosystems perspective. Among multiple-use objectives, commercially and ecologically important species, such as salmon and migratory birds, are important targets for protection and enhancement.

In 1991, the Quebec government launched the Integrated Resource Management Project, which represents a new approach to management of renewable resources including freshwater, as well as forests and wildlife.

Water Resources Assessment

To provide the necessary knowledge base to assess and protect groundwater resources, Canada initiated a new hydrogeology program. As a first task, researchers are studying major aquifers in the greater Toronto and Vancouver areas that are at risk due to growing populations.

As part of a collaborative initiative among governments, the private sector and universities, Canada is contributing to the World Climate Research Program's Global Energy and Water Cycle Experiment. A central goal of this experiment is to improve the ability to model global precipitation and evaporation and to assess the sensitivity of the hydrologic cycle and water resources to climate change.

Protection of Water Resources, Water Quality and Aquatic Ecosystems

Laws and regulations in most jurisdictions have been strengthened to expand protection of waterways and aquatic ecosystems.

Regulations under federal and provincial legislation have been revised to set stricter limits on effluent discharges from pulp and paper mills. Fines and other penalties have been substantially increased for federal fishery offenses, such as illegal dumping or the damaging of fish habitat.

The Government of Quebec has adopted industrial waste treatment regulations in the context of a larger scale industrial waste reduction program. It has also substantially modified its environmental assessment legislation.

The Manitoba government has passed the Mines and Minerals Act, addressing the remediation of effects on water resources from the mining industry.

In a new national Action Plan for Fish Habitat, governments, groups representing indigenous people, industry, and NGO partners in fisheries management are launching a program to streamline the division of management responsibilities and to provide techniques and policies for local fish habitat management. It will address partnership arrangements, inventory and monitoring of resources, environmental analysis, regulations and guidelines, and planning and evaluation.

Drinking Water Supply and Sanitation

With improved science, governments are responding to public concerns about water quality. For example, the Government of New Brunswick has strengthened its regulations governing public water supplies for various microbiological, inorganic and organic parameters. The federal Drinking Water Safety Program for Natives provides a joint indigenous-government means to increase monitoring of water treatment systems, to train water treatment operators, and to evaluate and advise indigenous communities on the design and operation of water treatment systems.

Water and Sustainable Urban Development

Governments are taking many steps to address the importance of water to sustainable urban development. The Ontario government has launched the Municipal/Industrial Strategy for Abatement, a major program to reduce water pollution from industries and municipalities through a preventative approach. The FCM, supported by the IDRC and the government, has launched its Canadian Urban Research on the Environment Project (CURE) to gather and distribute information about Canadian municipal initiatives to improve the environment and promote long-term urban sustainability in Canada and abroad.

Among the issues to be covered by CURE will be water provision and conservation, toxic and hazardous materials, and natural systems and nature conservation. The database will aid international partnerships and exchanges between local governments

in Canada and developing countries. Expertise on drinking water supply and treatment and sewerage infrastructure and operations will be available through this program.

Despite the progress that has been made, a number of Canadian cities still have inadequate urban wastewater systems. The federal government is reassessing its current policy on municipal infrastructure.

In February 1993 in Winnipeg, the federal government hosted Canada's first national conference and trade show on water conservation. It was agreed that water conservation was essential and economically feasible.

Water for Sustainable Food Production and Rural Development

As an example of how private industry is involving itself in sustainability issues related to freshwater, the Canadian Fertilizer Institute and its associated Fertilizer Institute of Ontario have conducted two separate studies to investigate and promote sustainable agricultural practices in the use of nitrogen fertilizer. The results of this work will increase the efficiency of fertilizer use and should result in reductions in runoff to natural water courses and groundwater.

The Government of Quebec has adopted a strategy to reduce soil loss, riverbank erosion, and sedimentation of waterways in rural areas. This should improve water quality and maintain ecosystem equilibrium.

The IDRC has launched a research program to assist countries with the protection of the quality of freshwater resources. Its main objectives are to enhance food production, nutrition and employment derived from freshwater resources, and to address waterborne health risks together with sustainable, community-based water monitoring and purification technologies. Through projects in Africa, Latin America, Southeast Asia, the Caribbean and Mexico, this program will develop strategies to improve aquatic resource management, including water security, to assist communities to achieve sustainable production while protecting aquatic habitats, and to find solutions to environmental hazards and waterborne pollutants.

Impacts of Climate Change on Water Resources

Despite Canada's apparent abundance of freshwater, certain areas are vulnerable to shortages, particularly during periods of drought. The Canadian Climate Board and other government agencies and researchers are addressing the possible effects of climate change on habitat and economic activities in Canada. In particular, effects related to agriculture, fishing, and forestry create the highest concern. Comprehensive studies are being conducted on climate change impacts in the Mackenzie River basin and in the Great Lakes-St. Lawrence River basin.

PART III, SECTION IV

ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, HAZARDOUS WASTES, SOLID WASTES AND SEWAGE-RELATED ISSUES, AND RADIOACTIVE WASTES

Introduction

Canada's activities in all areas of toxic chemicals and waste management are marked by efforts to involve major groups, governments, and the general public. Policies are moving toward a pollution prevention model that emphasizes improving processes to avoid problems rather than a "react and cure" philosophy. This is embodied in voluntary programs by industry, government legislation, and stricter regulation, as well as economic incentives.

Some initiatives that affect these subjects have been discussed in the sections of this report on health and freshwater.

Toxic Chemicals

Many of Canada's efforts in research, the exchange of information, and risk reduction are conducted within multilateral programs of the OECD, the UN Economic Commission for Europe and other groups. For example, Canadian researchers are preparing preliminary assessments of seven chemicals through participation in the OECD Chemicals Program. Through that program, the International Program on Chemical

Safety Co-ordinating Committee on the Harmonization of Classification Systems for Chemicals, and the International Labour Organization, Canada is also working toward harmonization of classification systems, specifically for acute toxicity, carcinogenicity, and reproductive toxicity.

Beyond multilateral efforts, governments and the private sector in Canada have also taken independent action in many ways.

(a) Actions by Governments

Governments across Canada have taken legislative and regulatory action to control the use of toxic chemicals and their impacts on the environment. One example is the federal government's Canadian Environmental Protection Act (CEPA), through which it can manage toxic substances at each stage of their life cycle. Under CEPA, the federal government is developing lists of substances that are a priority for environmental and health assessment and has established a Domestic Substances List containing those substances used in Canadian commerce between 1984 and 1986. Substances not on this list are considered "new" and must be assessed prior to their manufacture or importation into Canada. A Non-domestic Substances List has also been compiled to identify substances new to Canada but recognized in world commerce.

The federal government will conduct environmental and health assessments on up to 100 priority substances by 2000. The first Priority Substances List (PSL) includes 44 substances, all of which are undergoing environmental and health assessments. The reports will be released by February 1994. A second PSL will be published in 1994.

Canada's National Pollutant Release Inventory requires companies meeting certain criteria to collect information on the releases of specified substances into air, water and land. The information collected will be made public in 1994.

Risk reduction programs have been established through the Green Plan, which, among other goals, is committed to achieving a 50-percent reduction in sulphur dioxide emissions in eastern Canada by 1994 and to capping acid rain-related emissions in the same region beyond that date.

Canada has strengthened its ability to assess the impacts of toxic substances on wildlife by establishing the Canadian Co-operative Wildlife Health Centre and the Wildlife Toxicology Fund (for universities) and by increasing support for wildlife toxicology research by federal agencies.

(b) Co-operative Actions by Major Groups

As the primary source and consumer of toxic chemicals, the private sector is taking action. Examples include the cradle-to-grave guidelines and codes of practice that have been developed by the Canadian Chemical Producers Association. Canada's chemical

industry has initiated the National Emission Reduction Master Plan involving a voluntary approach to collecting release information. The Major Industrial Accidents Council of Canada is developing guidance and tools to improve chemical emergency prevention, preparedness and response.

The Accelerated Reduction-Elimination of Toxics Program involves industry and governments through voluntary actions designed to achieve accelerated reduction of emissions, and the elimination or phase-out of bioaccumulative, persistent toxic substances. That kind of partnership has been extended to include other major groups which participated in a federal task force to recommend a pollution prevention legislative framework. The final report of the task force was released in September 1993.

Hazardous Wastes

Governments in Canada have agreed to reduce the amount of hazardous waste destined for final disposal to 50 percent of its 1990 level by 2000. Achievement of that target is based on reduction, reuse and recycling, with much of that responsibility in the hands of provincial and territorial governments and the private sector.

(a) Reducing Waste and Building Treatment Capacity

At the centre of voluntary efforts to develop and implement the necessary action plans is the Hazardous Waste Minimization Committee. It was established by industry and involves governments, environmental groups and labour.

In 1993, the CCME re-established its Hazardous Waste Task Force to promote the uniform management of hazardous wastes across Canada. As part of its hazardous waste plan, the CCME is preparing a comprehensive national inventory of hazardous waste to measure progress of waste reduction targets and to catalogue hazardous wastes facilities in Canada.

Most provincial governments have begun to develop a stronger capacity to manage hazardous waste treatment, largely through government-owned corporations. For example, the Alberta Special Waste Treatment System, jointly owned by a corporation owned by the Government of Alberta and a private-sector partner, is currently undergoing an expansion. The system includes transfer stations, a transportation system, and North America's first fully integrated hazardous waste treatment plant. The centre treats those hazardous wastes that remain after waste minimization and that cannot be handled by conventional methods.

The Manitoba Hazardous Waste Management Corporation is constructing a central treatment, storage and transfer facility in Manitoba. There are already several small treatment/storage facilities located in the province.

The Quebec Ministry of the Environment, in addition to its active participation in national waste minimization initiatives, is developing programs to maximize the reuse and recycling of hazardous wastes. As such, that government is planning to modify its hazardous waste regulations in 1994. The Government of Quebec, through its Recyc-Québec corporation, has recently established a secondary materials exchange.

The Ontario government emphasizes the reduction of hazardous waste generation through pollution prevention principles. Its Ontario Waste Management Corporation is responsible for designing, obtaining approval for, building and operating a comprehensive hazardous waste treatment facility to provide additional capacity in that province for wastes that cannot be reduced, reused or recycled.

(b) Controlling International Movement of Wastes

In November 1992, the Export and Import of Hazardous Wastes Regulations came into force. This permitted Canada to ratify the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, and to implement fully the OECD decision on wastes destined for recovery operations.

Inspectors have been provided with the training necessary to monitor transboundary movements and prevent any illegal traffic.

In January 1993, representatives from the four western provinces of Canada, the western U.S. states, Canada's Department of the Environment and the United States Environmental Protection Agency met to review existing policies regarding the flow of hazardous waste in western Canada and the western United States. Their goal was to achieve a better understanding of the flow and capacities of hazardous waste to determine the needs for further infrastructure development. It is an example of an effort to find regional solutions for waste management.

Solid Wastes and Sewage-Related Issues

Governments in Canada have agreed to reduce the amount of solid waste sent for disposal to 50 percent of the 1988 level by 2000. This commitment has been a focal point of efforts by governments, communities, the private sector and interest groups. Some aspects of this activity, such as the work of environmental NGOs and the NAPP, are discussed in the section on consumption.

In addition to activities such as those listed below, quantification of the Canadian waste stream will be completed in order to track progress. Other activities include development of environmental standards for waste management practices and technologies, such as national guidelines for composting. Another is the application of evaluation methods to determine the environmental impact and costs and benefits of proposed waste reduction or waste management measures, including environmental profile case studies in the private sector.

(a) Government Actions

Governments have pursued numerous individual strategies to meet waste reduction goals. The Government of Ontario developed a Paper Fibre Strategy to increase the diversion of paper products from the waste stream. By 1992, Ontario had diverted 25 percent of solid wastes from disposal from 1987 levels. The British Columbia government has met with the plastics industry and users of plastic packaging to discuss ways to make these materials more recyclable and to reduce their presence in the waste stream. That government has also implemented a comprehensive reporting system to track the amounts of waste disposed of and recycled in the province.

As part of the ratification of the Basel Convention, the federal government amended the Canada-USA Agreement on the Transboundary Movement of Hazardous Wastes to include non-hazardous solid wastes.

(b) Private Sector Actions

To play their role in solid waste reduction, businesses and their representative organizations are pursuing numerous initiatives. One of the most significant is the development of industry-funded collection and recycling of certain products such as corrugated cardboard. The programs of Ontario Multi-Material Recycling Inc. and Collecte sélective Québec have become models of this approach. Other examples of initiatives are pilot projects sponsored by the Paper and Paperboard Environmental Council and the Plastic Film Manufacturers Association to collect selected materials for recycling and develop new technologies to recycle their materials. The Canadian glass industry and the aluminum industry have both been part of a successful effort for recycling and to develop new technologies. The Composting Council of Canada released a national survey on composting infrastructure.

Radioactive Wastes

(a) Domestic Activities

As a country that mines and uses radioactive substances, Canada has long had mechanisms to control radioactive wastes. It has also pursued initiatives to respond to technical issues and public concerns.

In 1989, the federal Minister of the Environment appointed an independent panel to conduct an environmental assessment and review of the concept of disposing of nuclear waste in the granitic rock of the Canadian Shield. The review is designed to encourage participation by the public, NGOs and government agencies in decision making.

Producers of low-level radioactive wastes must develop their own storage and disposal facilities. Atomic Energy of Canada Limited, a corporation owned by the federal government, is currently planning a demonstration unit of a near-surface disposal facility for its own wastes and those received from small-volume producers who

cannot develop their own facilities. However, a large proportion of the existing inventory of low-level radioactive wastes in Canada consists of "historical" wastes. A task force was established in 1988 to find a site for a disposal facility for these.

Canada has one of the largest uranium mining industries in the world. In the area of uranium mine and mill tailings, past and present research conducted by the industry and the federal government provides a sound basis for evaluating the potential environmental impacts. The Atomic Energy Control Board (AECB), the federal government body that manages nuclear issues, has established regulatory criteria for the decommissioning of these wastes. Large volumes are involved and the AECB is making sure that uranium companies fulfil their obligations with regard to the clean-up of these wastes. The Federal Environment and Assessment and Review Office has recently established an independent panel to review the decommissioning of uranium tailings in Ontario.

(b) International Activities

Canada actively participates in bodies such as the International Atomic Energy Agency (IAEA), the Nuclear Energy Agency of the OECD, the International Commission on Radiological Protection, and the International Maritime Organization (through the London Convention). It does so through participation by its scientists, industry and government representatives, and/or financial assistance.

Canada provides assistance to developing countries through bilateral co-operation and participation in IAEA programs. One example was hosting a training project that included the participation of 25 developing countries.

Conclusion

Canada has made much progress toward achieving the goals of sustainable development. However, many challenges lie ahead. It is not simple to find a balance that best meets the needs of Canadians of today and those of tomorrow, as well as a balance that respects the needs of people around the world. There has, however, been an important level of commitment to partnerships in Canada as a vehicle for action. Major groups, governments, and individuals are working together for change. This process is evolving, and it already shows many signs of success.

One of those successes is the increasing awareness that many of the traditional assumptions about the relationship between human beings and their environment held by people in industrialized societies are counterproductive. Ecosystems and our ties to them are infinitely more complex than we could have imagined even a decade or two ago. The links between the quality of the environment and economic prosperity, whether in Canada or in developing countries, are becoming more obvious.

The shift to policies and practices that support sustainable development is affecting many aspects of life. It is affecting our relationships with other countries. Whether we consider the state of the fishery in the northwest Atlantic, the impacts of a depleted ozone layer, or the importance of sustainably managed forests, our ties to all other countries are increasingly affected by these same policies and practices. Canada looks forward to future opportunities to share with the Commission on Sustainable Development the progress we have made, the lessons we have learned, and the many challenges we face.

ANNEX

This report has been prepared by the federal government in co-operation with other governments, organizations, and major groups in Canada.

These governments and organizations were either consulted during the preparation of the report or were involved in the examples specifically mentioned in the report. However, there are numerous groups and organizations in Canada not on this list that have undertaken activities to implement the principles of sustainable development.

More complete information about particular aspects of the report can be obtained by contacting any of the following.

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GLOSSARY

AECB	Atomic Energy Control Board
AEPS	Arctic Environmental Protection Strategy
CCME	Canadian Council of Ministers of the Environment
CEIA	Canadian Environmental Industry Association
CETI	Canadian Environmental Training Initiative
CEPA	Canadian Environmental Protection Act
CHBA	Canadian Home Builders' Association
CIDA	Canadian International Development Agency
CSD	Commission on Sustainable Development (United Nations)
CURE	Canadian Urban Research on the Environment Project
FCM	Federation of Canadian Municipalities
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
IAEA	International Atomic Energy Agency
IDA	International Development Association
IDNDR	International Decade for Natural Disaster Reduction
IDRC	International Development Research Centre
IISD	International Institute for Sustainable Development
MPMF	Montreal Protocol Multilateral Fund
NAAEC	North American Agreement on Environmental Co-operation
NAPP	National Packaging Protocol
NAFTA	North American Free Trade Agreement
NGO	non-governmental organization
NRTEE	National Round Table on the Environment and the Economy
ODA	official development assistance
OECD	Organization for Economic Co-operation and Development
PSL	Priority Substances list
SOE	state of the environment
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program