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TABLE RONDE NATIONALE SUR L'ENVIRONNEMENT ET L'ÉCONOMIE

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Projet de société

Planning for a sustainable future

CANADIAN CHOICES FOR TRANSITIONS TO SUSTAINABILITY

Final Draft May 1995

Toward a National Sustainable Development Strategy for Canada

Publications of the *Projet de société*. (Aussi disponible en français)

Volume 1:
Overview of the Projet de Société

Volume 2:
Report of the Vision and Process Committee

Volume 3:
Report of the Document and Information Committee
– Assessment of Agenda 21 (available on disk)

Volume 4:
Progress Report June - December, 1993

Volume 5:
Canadian Choices for Transitions to Sustainability
(Draft), 1994; (Revised Draft), January 1995; (Final Draft), May 1995

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For more information, contact:

***Projet de société* : Planning for a Sustainable Future**
1 Nicholas Street, Suite 1500
Ottawa, Ontario, Canada K1N 7B7
Tel: (613) 992-7189 Fax: (613) 992-7385
E-mail: admin-nrtee@nrtee-trnee.ca
nrtee@web.apc.org

May 1995

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Why are we doing this?

The *Projet de société* is a multistakeholder partnership of government, Indigenous, business and non-profit organizations committed to promoting Canada's transition to a sustainable future. Recognizing that sustainable development is a collective responsibility, we are primarily a catalyst for change, providing a forum for sectors and individuals to build consensus by linking their activities and contributions to a common purpose.

As part of its mandate, the *Projet de société* has undertaken to prepare a National Sustainable Development Strategy. We have concluded that, unlike strategies for winning games or corporate takeovers, a strategy for sustainable development must move away from the notion of winners and losers because sustainability cannot be achieved at the expense of any sector or region of the world. Moreover, the only way to ensure that we are all winners is to base our strategy on a broad, participatory process that builds commitment all levels of society.

That is why *Canadian Choices for Transitions to Sustainability* is designed to accelerate transitions to sustainability by bringing people together, examining what has been accomplished, seeing where there may be gaps and considering how we may be more effective by focussing our efforts on key issues or transition tools. It is thus not a traditional strategy but rather a framework or a guide to sustainability.

In a country as diverse as Canada, no single document can pretend to describe all the things that must be done at all levels to move us toward sustainability, but it can help lay the groundwork for the various cooperative efforts that will have to ensue in the months and years ahead. By sketching the broad national picture, we hope to encourage communities and sectors in Canada to see how they fit into the larger picture and engage them into assuming their share of the challenge.

Because sustainable development requires a fundamental change in the way we think about and solve problems, our approach is designed to help facilitate a paradigm shift away from our traditional sector-based decision making toward more integrated, system-wide thinking. We hope that *Canadian Choices for Transitions to Sustainability* will stimulate vision, trigger insight, provoke discussion, draw criticism, challenge assumptions and inspire action! It is an attempt to reflect the diversity of Canadian society while encouraging, engaging and empowering people across the country to forge their own transitions to sustainability.

The first draft of *Canadian Choices for Transitions to Sustainability* was prepared for the National Stakeholders of the *Projet de société* by members of its 1994 Working Group. Based on comments received at the Fourth National Stakeholders Assembly in November 1994, a revised version was prepared by the NRTEE in January 1995 and used to engage various communities and sectors across the country in discussions about Canada's transition to sustainability. This Final Draft reflects some of the comments and concerns raised in these regional workshops and will be presented to the *Projet's* National Stakeholders for their use at the Fifth National Assembly, planned for the fall of 1995. Further work is planned to compensate for some of the regional, cultural and sectoral imbalances still found in this Final Draft.

Members of the 1994 Working Group:

Jean Arnold
Fallsbrook Centre

Garth Bangay
Environment Canada

David Bennett
Canadian Labour Congress

Keith Bezanson
International Development Research Centre

Lynn Broughton
Forum for Sustainability

Theodora Carroll-Foster
International Development Research Centre

Gordon Clifford
Consulting Audit Canada

George Connell
National Round Table on the Environment and the Economy

Heather Creech
International Institute for Sustainable Development

Anne Cronin-Cossette
Department of Foreign Affairs and International Trade

John Dillon
Business Council on National Issues

Ron Doering (Chair, Working Group)
National Round Table on the Environment and the Economy

Charles Ferguson
INCO

Janine Ferretti
Pollution Probe

Gary Gallon
Canadian Environmental Industries Association

George Greene
Canadian International Development Agency

Arthur Hanson
International Institute for Sustainable Development

George Kowalski
Environment Canada

Shirley Lewchuck
Department of Foreign Affairs and International Trade

Elizabeth May
Sierra Club

Sheldon McLeod
Canadian Council of Ministers of the Environment

Beatrice Olivastri
Beatrice Olivastri & Associates

Peter Padbury
Canadian Council for International Cooperation

Chester Reimer
Inuit Circumpolar Conference

Sarah Richardson
National Round Table on the Environment and the Economy

Barry Sadler
Consultant

Ann Marie Sahagian
Environment Canada

Sandy Scott
National Round Table on the Environment and the Economy

Dana Silk
National Round Table on the Environment and the Economy

Mary Simon
Inuit Circumpolar Conference

Robert Slater
Environment Canada

Judith Swan
Oceans Institute

Susan Tanner
Friends of the Earth

Kathy Thompson
Federation of Canadian Municipalities

Miriam Wyman
Women and Sustainability Networks

1

A guide to sustainability

Outlines a vision of a sustainable future for Canada and discusses some values and principles that underlie sustainability.

Acknowledges the importance of building on the work of others.

Invites all stakeholders to work together to choose Canadian transitions to sustainability.

1.1 Doing business differently

The *Projet de société* is a national, multistakeholder process dedicated to planning for a sustainable future. It originated at a meeting held in November 1992 when about 40 people who had been involved in Canada's preparation for the 1992 United Nations Conference on Environment and Development (UNCED) decided that a new organization was needed to maintain the momentum and to prepare the National Sustainable Development Strategy (NSDS) called for in Agenda 21.

It was widely agreed that the principles of transparency, inclusiveness and accountability adopted by Canada for UNCED should provide the basis for this work, meaning that decision making would be based on partnerships and consensus. As it turned out, this was hard to maintain when new stakeholders continued to join the process, others left and the number of people involved increased to 120, as it did by the fourth meeting or National Stakeholders Assembly held in November 1994.

While no single document will be able to deal with all the complex issues in sustainable development, a strategy will be helpful in laying out common problems, goals and solutions.

– Michael Keating, 1989

This document, *Canadian Choices for Transitions to Sustainability*, is an attempt to satisfy both those stakeholders concerned about having a product to work with in the short term and those more concerned about the processes needed to facilitate long-term transitions.

It is not a traditional strategy because sustainable development does not lend itself to traditional ways of doing things: specific goals and strategic ways of achieving them have worked well for individual sectors, but sustainable development means acting responsibly for *all* sectors and individuals, across both generations and continents.

That is why this NSDS is more of a guide to sustainability based on a vision of the future and a set of principles to guide the process (Box 1). Given the cultural and biophysical diversity of Canada, let alone its sheer size, it would be naïve to propose a sustainable development *plan* that everyone would be expected to follow.

Canadian Choices is thus a prototype, if not a manual, for doing business differently. Learning to work together and forging new partnerships for sustainable development will not be easy, and because it has never been done before at the national level, the process will continue to evolve.

By highlighting sustainability initiatives throughout Canada (Chapter 2), this guide is also designed to help people build on the work of others.

Guiding principles of the *Projet de société*

- The process should be transparent, inclusive and accountable.
- All stakeholders should identify and take responsibility for their contributions to sustainability.
- Dialogue and cooperation are key elements of problem solving.
- A shared vision on policy, institutional and individual changes is necessary for transitions to sustainability.
- Strategy and action must be linked and build on previous and ongoing initiatives.
- Canada's contribution to global sustainability should be exemplary.

It shows that governments, First Nations, businesses and non-profit organizations all play a critical role in the development and implementation of an NSDS. This chapter pulls together many of the diverse activities happening at different levels and in different sectors across the country, but it also reveals a certain lack of integration and co-ordination. It is complemented by an overview (Chapter 3) of some of the international implications of sustainable development, notably our existing commitments to deal with global sustainability issues and our increasing dependence on foreign markets.

In an attempt to break with the past and encourage stakeholders to look beyond their traditional sectors, interests or organizations, Chapter 4 is organized around basic human needs. It takes an integrated approach designed to help ensure that various choices and their consequences are compared so that people can weigh the pros and cons themselves and begin to accept the difficult tradeoffs involved.

Communities and sectors are encouraged to use Chapter 4 as a workbook to generate discussion about choices and solutions. Its "Choicework Tables" begin to show the daunting complexity of sustainable development and will lead some people to conclude that sustainability cannot be achieved by working on single issues through traditional organizations.

There is a great need for a clear illustration of sustainable development in terms of eating, living, travelling and working.

– *Sustainable Netherlands*, 1993

That is why Chapter 5 focusses on some of the tools that can facilitate sustainable development in a systematic way, including economic instruments, sustainability indicators and integrated decision making. It is the most strategic part of this strategy because it recognizes the importance of transitions and the need for structural changes in our production and consumption patterns as well as in our governments and institutions.

The final chapter, dealing with implementation, has only been sketched in at this stage because it will depend on the initiatives of those stakeholders willing and able to move ahead on their own. The experience of the *Projet de société* will hopefully help them and others in developing and implementing their own strategies for sustainability because it emphasizes the responsibility we must all take for making these changes happen.

1.2 Visions of the future

The closing years of the 20th century are seen by many as a hinge of history, with nothing less than the future of the planet in the balance: human

Toward a vision of a sustainable society

Human beings share the Earth with many other species; we are both dependent and interdependent. We recognize that human beings around the world also share many needs and hopes for themselves and their children:

- clean water and air;
- fertile soil and good food;
- safety from poverty and disease;
- an optimum population size;
- respect, love and a gentle touch;
- music, laughter and the peace of prayer;
- social contact and a sense of community;
- a livelihood and a healthy economy;
- to learn and grow in understanding;
- the wonder and discipline of nature;
- work, rest and celebration; and
- to become one with the Earth.
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activities and numbers are now altering natural systems on a global scale. Although there is some dispute over the rates of change, commonly acknowledged effects include loss of biodiversity and cultural diversity, thinning of stratospheric ozone, climate change and the collapse of natural resource stocks, all of which contribute to social, economic and environmental instability.

Will our future be rich in potential or under increasing pressure from people seeking refuge from deteriorating conditions in other parts of the world, if not in regions of our own country? Many stakeholders believe that we can meet the legitimate aspirations of both current and future generations without overwhelming the carrying and assimilative capacity of the planet, if we embrace sustainable development.

Sustainable development is a process rather than a state of affairs: we must strive continuously for radical change.

– Thorbjørn Berntsen, Minister of Environment, Norway, 1994

But what does it mean to live within our ecological means and up to our humanitarian obligations? How do we change and toward what vision of a sustainable society should we strive? Is there, in fact, a single vision of sustainability or will it continue to mean different things to different people in different places and at different times?

In this guide, sustainable development is interpreted as a common currency that both unifies environmental, social and economic values and links today's choices to tomorrow's consequences. A vision of a sustainable society (Box 2) was developed as a first step rather than the last word, so space remains to include the visions of others. This vision was then used to generate a set of overarching sustainability goals for Canada (Box 3).

Sustainability goals for Canada

GOAL 1: Ensure that Canadians always have safe **air** to breathe while maintaining socio-economic activities that do not threaten global climate security.

GOAL 2: Provide access to potable **water** and economical supplies of water for other purposes while maintaining the integrity of our aquatic ecosystems for other uses and species.

GOAL 3: Ensure a sustainable system of **food** production, distribution, processing, consumption and recycling that promotes healthy diets and strong economies, at home and around the world.

GOAL 4: Provide adequate **shelter** and a sense of community for all Canadians while conserving the **natural habitat** upon which people and all other species depend.

GOAL 5: Ensure that people **respect** one another for their differences and human values and are able to reach their full potential without compromising similar opportunities for future generations.

GOAL 6: Create a healthy environment and an affordable **health** care system that will improve the physical and mental well-being of all Canadians.

GOAL 7: Develop a society in which people feel **secure** and safe in their homes, communities and workplaces.

GOAL 8: Ensure levels of **mobility** and communication that support basic human needs without denying future generations similar opportunities.

GOAL 9: Design **closed loop systems** of resource use that maintain the source and assimilative capacities of ecological systems.

1.3 Values and principles

Canada's high economic, social and environmental deficits are clear symptoms of unsustainability. By drawing down environmental stocks, such as forests, fish and soils, we also degrade the social and economic systems that support our communities. Sustainable development would reverse these trends by ensuring that we no longer borrow from the assets of future generations to pay for our own aspirations. If not, our children or theirs could become the first generation to live in a Canada of diminishing opportunity.

Living within our ecological and economic means demands far-reaching policy, institutional and technological reforms complemented by shifts in individual values and behaviour. Yet sustainable development should not be equated with economic decline or competitive disadvantage, and even less with halting all forms of technological innovation. The challenge is not whether to grow but how to develop. Sustainable development must be seen as a positive enterprise applying our research and development capabilities and entrepreneurial skills to manage change.

Principles upon which this change needs to be based have been elaborated upon in a variety of forums, including all provincial strategies (Box 4). The sustainable development principles identified by the *Projet de société* (Box 5) also illustrate many of the critical characteristics of a sustainability planning process.

As we move away from households, communities and businesses to the national and international level, it becomes increasingly difficult to reach agreement on values and principles. There may not be much agreement around issues of equity within and between countries, but there is an increasing understanding that sustainability cannot be achieved in Canada without global sustainability.

1.4 Building on the work of others

The development of this guide has benefited from a heterogeneous process that has involved thousands of people across the country in a variety of direct and indirect ways. It is a continuation, if not an acceleration, of concerns about the future that were first raised in Canada many years ago. The fact that we are only now coming to grips with them – after an unprecedented period of material growth – does not mean that sustainable development is a new concept. Rather, it is *an idea whose time has come.*

As one moves on the conceptual continuum from the goal of sustainability through design criteria for a future society to scenarios, what one gains in detail and direction is apt to be lost in widespread acceptability.

– Slocombe and van Bers, 1992

Official Canadian concern in this field appears to have started in 1909 with the Commission on Conservation, a clearing house for natural resource research done by federal and provincial officials, which was disbanded in 1921. It was not until the 1972 United Nations Conference on the Human Environment held

Principles in provincial strategies

Principles that appear in almost all provincial strategies:

- global responsibility;
- living off the interest not the capital;
- minimizing the use of non-renewable resources;
- maintaining biodiversity and the integrity of essential ecological processes;
- accountability in decision making;
- stewardship and individual responsibility;
- full-cost accounting;
- staying within the Earth's carrying capacity;
- changing some basic assumptions and underlying values;
- improved access to information and decision making.

Principles that appear less frequently:

- fairer distribution of costs and benefits;
- meeting basic needs;
- cultural awareness;
- recognition of non-monetary values;
- focussing on the longer-term economic goals;
- quality rather than quantity of development;
- encouraging scientific and technological innovation.

in Stockholm, however, that the Government of Canada released the 441-page report entitled *Conservation in Canada*. In 1973, just before the first oil price shock, the Science Council of Canada agreed to proceed with a study that culminated in 1977 with the publication of a prescient study entitled *Canada as a Conserver Society*.

The following decade saw the publication or preparation of numerous federal (and the occasional federal-provincial) policy documents dealing with natural resources. Notable among these was the 1981 *Federal Review of the World Conservation Strategy*, which made 22 recommendations, including the development of conservation strategies for water conservation in Western Canada and for coastal zones in the East, West and Arctic. It also recommended analyzing the effect of federal tax measures on conservation, recycling and pollution abatement.

National policies or strategies were also prepared for a variety of sectors, including national parks (1979), land use (1980), forestry (1981), wildlife (1982),

We are recklessly destroying the timber of Canada and there is scarcely a possibility of replacing it ... It occurs to me that the subject should be looked in the face and some efforts made for the preservation of our timber.

– Sir John A. MacDonald, 1871

heritage rivers (1984), chemicals (1984) and water (1985). Nevertheless, a 1986 report on conservation achievements asserted that the adoption of a truly cross-sectoral conservation policy was still "the greatest challenge" to the federal government.

During the 1980s, Canada continued to promote the World Conservation Strategy developed by the IUCN and played a major role in the work of the World Commission on Environment and Development (WCED). In 1987, when the WCED 'or Brundtland' Report, *Our Common Future*, was published, Canada's National Task Force on the Environment and the Economy called for provincial and territorial conservation strategies or "blueprints for sustainable economic development" to be integrated through a national strategy that would link them to the international scene. The *Green Plan*, which identified actions and budgetary allocations across the broad front of environmental issues, was published by the federal government in 1990.

In 1992, Canada was one of more than 100 countries that attended UNCED, whose Agenda 21 and other agreements provide a framework for global, national and even local action to achieve sustainable development (Box 6). National sustainable development strategies were highlighted as potentially pivotal mechanisms for the implementation of Agenda 21 and some progress has been made in this field by other countries (Chapter 3.5).

Sustainable development principles of the *Projet de société*

- all deliberations must be informed by respect for nature, including the rights of other species and future generations;
- all persons should be able to participate in transitions to sustainability;
- the process should be based on anticipation and prevention;
- issues related to sustainability should be neither won nor lost, but resolved;
- informed decision making must consider the full cost of actions;
- the process should take into account social, interregional, and intergenerational equity;
- the process should be a dynamic learning one.

NSDSs differ from conventional (top-down, sectoral) policy making and planning in a number of important respects. First, they should integrate economic, environmental and social objectives; second, their preparation should be undertaken through the "widest possible participation;" and third, they should be based on a "thorough assessment of the current situation."

Public concern about the future has already enabled the development of sustainable development strategies at many levels and in many sectors across Canada. This NSDS or guide builds on the considerable work under way at all levels of government, First Nations and the business and NGO communities (Chapter 2). Ongoing initiatives such as the National Biodiversity Strategy, the emerging federal sustainability framework and the various provincial, municipal and sectoral strategies will also need to be incorporated. We are faced with the constant challenge of weaving these various pieces into a coherent national strategy, linking it to the international agenda and facilitating the transitions.

1.5 Transitions to sustainability

Many international responses to the 1987 Brundtland Report have focussed on the environmental aspects of sustainable development, notably conservation strategies and environmental action plans.

Each generation is entitled to the interest on the natural capital, but the principal should be handed on unimpaired.

– Commission on Conservation, Ottawa, 1915

Even the 1992 Earth Summit was perceived by some to focus on environmental issues, such as biodiversity and climate change. This was due in part to the even lower levels of consensus on development issues, such as consumption levels and population. This guide tries to take a more comprehensive approach by projecting not only the shape that a sustainable society could take but how we might achieve it.

Because we cannot get to sustainability in a single step, attention is focussed on the intermediary steps needed to reach it. That is why this guide encourages people to use the transition tools described in more detail in Chapter 5. They will involve considerable "development" in many forms, speeds and directions, depending on local circumstances. Almost all of this development should be quite sustainable, but some will not be.

Because large, complex societies cannot be transformed overnight, special attention will be needed to ensure that any unsustainable development that occurs will not have irreversible effects: the parking lots of suburban shopping malls can be restored to agricultural land, but extinct species cannot be brought back to life. This underlines

AGENDA 21 is a blueprint for making development socially, economically and environmentally sustainable.

The **Convention on Climate Change** aims to stabilize and reduce greenhouse gases so as to prevent dangerous human interference with the global climate system.

The **Convention on Biological Diversity** requires that countries adopt appropriate ways and means of conserving the Earth's biodiversity and of ensuring that its benefits are equitably shared.

The **Rio Declaration on Environment and Development** is a statement of 27 principles defining the rights and responsibilities of nations as they pursue human development and well-being.

The **Statement of Principles on Forestry** advocates a global consensus on the management, conservation and sustainable development of all types of forests.

the importance of preventing irreversible damage.

Despite the bad press recently given to "development," it remains a positive characteristic of human life. Moreover, it is only over the last 50 years or so that a global deficit has appeared on the development accounts. It is sometimes forgotten that development is not only economic, but also cultural, social and personal. Few would deny that there has been considerable improvement around the world in health care, education and food production, if not distribution. The problem is that some of this development is not sustainable from a biophysical point of view, and poor governance has often made a bad situation worse.

There is also no longer much illusion about the impact of misguided "development," whether it is the collapse of centrally planned economies, the growing pains of former colonies or the excesses of capitalism. What is needed to repair the damage is *another kind of development*, one that is economically viable, environmentally sound and more equitable within countries, among countries and between generations.

Strategies should be understood as both process and product. How the strategy is developed is almost as important as the contents of the strategy itself, as the means of development generate the buy-in of the partners who will put the strategy elements into effect.

– Kumar, Manning and Murck, 1993

Another much maligned term is economic growth. No one doubts the inability of most places around the world to support the kind of economic growth experienced since the 1950s, especially in Western countries. A distinction should be made, however, between the "throughput" growth of the past and present, based on increasing consumption, and the "efficiency improvement" growth, based on the better use of materials and services. It is even possible to imagine a day in the future when we will be able to measure the kind of growth or development we actually need. This will happen once national accounting systems internalize or at least better reflect environmental and social costs.

Who would argue against growth in employment, efficiency, ecological stability, social resilience or security? This is what sustainable development is all about – and it can only be achieved by ensuring that the market, institutional and political forces still engaged in the old kind of growth use their considerable talent to build bridges to sustainability.

2

Canadian sustainability initiatives

Describes some key sustainability processes and projects that Canadians are currently engaged in.

Shows that local, provincial, regional and federal initiatives are a crucial part of a national multistakeholder strategy.

Recognizes, validates and integrates diverse activities, encouraging a more holistic approach to sustainability planning.

2

Canadian communities, First Nations, NGOs, businesses and governments have been striving for some time to promote environmental protection and, more recently, sustainable development.

The following pages provide a brief overview of some of the key sustainability processes and projects that Canadians are currently engaged in. The initiatives described here reflect not only the efforts of local governments, but also those of community groups, businesses and interest groups. A list of contacts for further information appears in Annex II.

Although more descriptive than analytical, this section should help people compare their initiatives, appreciate the interconnectedness of their work with that of others and better understand the broad context. Of course, it is the responsibility of individual stakeholders, communities and sectors to assess their own progress and judge their own success.

Box 7

Hamilton-Wentworth's Vision 2020

Hamilton-Wentworth's Vision 2020, a sustainable development strategy for the region, was developed in consultation with over 1,000 people. Background papers were prepared on workforce education and human development, economic base and livelihood, poverty, social equity and community well-being, and environment and health.

Issues addressed in the Hamilton-Wentworth strategy include natural areas and corridors; quality of water resources; air quality; waste reduction; reduced energy consumption; land use in urban areas; changing modes of transportation; personal health and well-being; community empowerment; and agriculture and the local economy.

How well the strategy will be implemented remains to be seen. Nevertheless, the decision-making process of regional government in Hamilton-Wentworth has already been reformed: all proposals going to Council now have to address implications for Vision 2020.

We hope that this overview of Canadian sustainability initiatives will help you see where progress has been made, where gaps exist and where your constituency needs to move forward.

2.1 Community initiatives

Many kinds of communities exist throughout Canada. Some people regard their real community as something smaller than the municipality in which they live. Others feel a sense of community with a larger region or identify their community in social or professional terms rather than geographic ones. No matter how we define them, it is within our communities that we try to find jobs, that we want to feel secure, that we hope to recreate in a healthy environment and that we seek social interaction and services. It should come as no surprise, therefore, that a lot of activity is taking place at the local or community level.

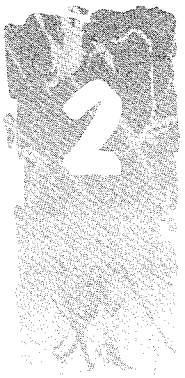
Sustainability planning

As the interrelation between environmental and economic issues has become better understood, and the longer-term questions more obvious, communities have begun to look ahead, to imagine the kind of future they would like and to plan for it. Various approaches to planning transitions to sustainability have sprung up across the country.

Municipal government strategies and plans

Many municipalities in Canada, such as Hamilton-Wentworth (Box 7), have adopted the concept of sustainable development either as a guiding principle or a goal. Some sustainable development strategies prepared by local or regional municipalities have been undertaken as independent strategies, while others have been incorporated into revisions of official plans or have replaced them.

Water and energy conservation issues are often addressed, as well as waste reduction, air and water quality improvements and protection of environmentally significant areas. Some strategies go



further toward adopting ecosystem planning principles, compact urban form planning and cumulative effects, and environmental assessment.

In other cases, effort has focussed on vision statements. For example, vision statements have been developed by 62 communities in Alberta. In Manitoba, the capital region of Winnipeg and 15 surrounding municipalities have made an effort to deal with many planning issues in a more cooperative way. The City of Vancouver is currently undertaking some particularly innovative work by engaging the population in making choices about the community's future (Box 73, Chapter 5).

One of the challenges we have faced is finding the right mix of rousing, old fashioned sleeves-up community work and what some would consider unproductive highbrow visioning.

– Dr. Gordon Edwards, Chair, Owen Sound Round Table

Having developed such integrative and forward-looking strategies, missions and visions, these municipalities and many others now face the challenge of implementation, which will require support and encouragement from all sectors of the community.

Local round tables

As an alternative to traditional decision making, Canada's National Task Force on the Environment and the Economy presented the idea of "round tables" in 1987, as a possible institutional response to the challenge of integrating the environment and the economy. Round tables provide a way for decision makers from government, business, environmental organizations, labour, Aboriginal peoples and academia to discuss and make recommendations on issues related to sustainable development. They have since been established at the national, provincial, territorial and local levels.

Some local round tables (LRTs) have been appointed by city councils, while many others have emerged from the grass roots when citizens gather to address the concerns of their community. Provincial round tables in British Columbia and Ontario promoted the formation of LRTs, whereas in Manitoba, the provincial Department of Rural Development encouraged their development.

LRTs tend to focus on specific communities, municipalities, regional municipalities, watersheds or regions. Most of them are multistakeholder forums; in fact, efforts are usually made to involve

Local round tables in British Columbia, Manitoba and Ontario

In British Columbia, there has not been direct government support for local round tables; however, the provincial round table encouraged the local round table movement. As a result, there are 45 local, regional or specific-purpose round tables. Some have tried to define themselves by ecosystem boundaries and have established interjurisdictional round tables. In Howe Sound, for example, six municipalities, three regional districts and an Island Trust discuss a broad range of issues within a geographically defined area.

In Manitoba, there are now 62 community round tables involving half of the province's 202 municipalities. These were mainly encouraged by the Manitoba Department of Rural Development, which recognized sustainability's importance to community development. With modest funding (up to $2,000 per community, to be matched by the local municipality) and some advice on a planning process, over 34 community round tables have completed vision work and strategies. Others are engaged in the earlier stages of consolidating membership and developing a vision. The aim is to integrate social, environmental and economic considerations in community planning.

In Ontario, there is no direct financial support for local round tables, but the provincial round table has promoted them. More than a dozen active round tables in communities throughout the province address energy, waste management, water management, protection of natural areas, land use and transportation issues. Other less common issues include ecotourism and environmental management for small businesses.

as broad a range of stakeholders as possible. Although some have terms of reference provided by city councils, others have developed their own goals, work plan and operating rules. In Manitoba, a provincial program has defined the process to be followed. In almost all cases, an effort is made to arrive at decisions by consensus.

Many LRTs aim to produce a sustainable development strategy. In some cases, however, they work on specific projects to achieve more immediate results or to resolve contentious issues in the community. In most cases there is a healthy mix of planning and action.

Box 7

Villes et villages en santé!

Over 90 communities in Quebec make up *Villes et villages en santé*, the most active healthy communities network in Canada. In Montreal, the Healthy City concept first emerged at the neighbourhood level. In 1988, city officials, councillors, community groups, business representatives and citizens from Mercier-East gathered to discuss the future of their neighbourhood and to establish a Healthy Community group to look at local issues of mental health, housing, youth, security, employment and the environment.

In 1990, the City of Montreal committed itself to the Healthy City concept, joining the *Réseau québécois de villes et villages en santé*. The city's Department of Parks and Recreation took the lead in establishing the steering committee, involving 20 members who represent various sectors including health, community groups, business, environment, culture and churches. After a year, the committee had expanded to 50 members. About half of the city's neighbourhoods now have active Healthy Community committees.

The range of issues addressed by LRTs varies considerably. Some have focussed on issues of environment and health, while others have been driven more by the concern for community survival and finding a sustainable economic base. In all cases, the interrelation between economic, environmental and social issues has been recognized.

The round table movement is more solidly established in British Columbia, Manitoba and Ontario (Box 8). In other provinces, however, there are some LRTs. In Saskatchewan, for example, five pilot communities have launched citizen-based sustainability planning processes; in Nova Scotia, the Halifax Round Table has completed a sustainable development strategy for that city.

Healthy communities

The Canadian Healthy Communities Project, funded by Health Canada and sponsored by the Canadian Institute of Planners and the Federation of Canadian Municipalities, promoted establishing healthy communities across Canada from 1989 to 1992. The concept of healthy communities was first discussed at an international conference in Toronto in 1984.

The "Ottawa Charter" of 1988 developed a framework for the Healthy Communities Project, whose aim was to involve citizens, community groups, the private sector, planners and politicians in creating a local environment that would enable a community to achieve "health" – defined by the United Nations as "a state of physical, mental and social well-being." The program was based on four main principles: wide community participation, intersectoral involvement, local government commitment and healthy public policy (emphasizing health promotion over provision of services).

Although funding for the project has lapsed, the movement is well established in Canada, mainly supported by a number of strong provincial networks that have emerged in British Columbia, Ontario and Quebec (Box 9). There are also healthy communities and contact points in the other provinces and the territories.

The average North American spends about 3 to 5 hours per day watching television...many women and children in rural India spend 3 to 5 hours per day gathering fuel.

All Healthy Community projects have stressed the importance of bringing community members together to assess the conditions in their community and to voice their concerns about issues of health and quality of life. By identifying their concerns and taking action, communities are recognizing that there are many determinants of health that lie beyond the formal health care system, such as road safety, population growth, affordable housing, and industrial pollution, which can be crucial to achieving a healthy community.

(Meaningful public participation) is important to the success of the RAPs ... Some jurisdictions are aware of this dynamic and have improved substantially the quality of public involvement. In other locations, participants report frustrating slowness and barriers to their making a difference.

– International Joint Commission, *Seventh Biennial Report*, 1994

Canada is recognized internationally as a leader in the Healthy Communities movement and the Canadian Healthy Communities Network has become a contact point for a variety of interactions with Healthy Community leaders outside the country.

Remedial action plans

Seventeen communities in the Great Lakes region of Canada designated by the International Joint Commission are currently developing remedial action plans (RAPs) for their waterfront areas.

RAPs take a comprehensive ecosystem approach to restoring and protecting waterfront areas. Each RAP defines the boundaries of the area affected by pollution, determines the causes, describes what uses have been impaired and determines what remedial measures should be adopted, by whom and on what kind of timetable. They consolidate the variety of sectoral plans (e.g., fishery management, land-use and economic development plans) that may exist in the region.

Although the development of RAPs has been led by the federal government and Ontario, local governments, interest groups, industries and individuals are also involved, which has transformed RAPs into another form of multistakeholder round table at the local level (Box 10). Most of the communities involved have completed reports defining problems and causes, but only two in Canada have completed the planning stage, where actions and time lines are defined.

Atlantic Coastal Action Plan

The Atlantic Coastal Action Plan is a $10-million initiative that grew out of a commitment made in the Green Plan to implement a marine environmental program. The plan aims to develop

Box 10

Hamilton Harbour RAP

Given the size of the task of cleaning up Hamilton Harbour, it was clear to all from the beginning that no single group could undertake the work alone. As a result, corporate executives, educators, scientists, technicians and politicians from three levels of government agreed to work together in a collaborative, consensus-driven process. The Remedial Action Planning Group in Hamilton became known as the Bay Area Restoration Council (BARC).

In addition to substantial funding from the public and private sectors, BARC has involved schools and hundreds of local volunteers in restoring the bay area. For example, the Royal Botanical Gardens and McMaster University have been restoring Cootes Paradise, one of the largest wetlands restoration projects in North America.

strategies or "blueprints" for managing the coastal resources of 13 communities in Atlantic Canada.

Through community-based, multistakeholder round tables, each project is meant to develop comprehensive environmental management plans that are action-oriented and have clear targets and schedules. Each plan must also outline how it is to be financed and implemented.

After an assessment of the area's environmental quality, a long-term vision is developed and remedial actions and conservation measures are identified. In addition to the comprehensive plan that emerges, environmental stewardship is promoted. The building of partnerships and a sense of community purpose is an important component.

Rural and Small Town Program

Mount Allison University's Rural and Small Town Research and Studies Program established a Sustainable Communities Project in 1991 to work with governments, community groups and corporations to develop a self-help model for creating and implementing sustainable development strategies. There are currently eight communities involved in this program, of which six are in Atlantic Canada and two in British Columbia.

The model that has been developed enables small rural communities, such as McAdam, New Brunswick (Box 11), to embark on a sustainability planning process with very few resources. The key steps are to collect simple data and to do a self-evaluation of the community, looking at economic, social and environmental characteristics, and then develop a strategy for the future. The program has focussed on rural Canada because much of the country's natural resource wealth is in these communities, yet they are often the least well-equipped to deal with the pressures and challenges of sustainable development.

Watershed planning

Because a watershed forms a coherent, easily described and ecologically significant area around which to plan, communities have been involved for some time in land-use and resource planning that centre around watersheds. These vary tremendously in size, and although many watershed plans are regional in scope (Chapter 2.3), some are more local in scale.

A considerable amount of this work has occurred in Atlantic Canada. In Prince Edward Island, 75 community-based watershed management projects have been funded through the Cooperation Agreement on Sustainable Development. In Nova Scotia, watershed advisory groups have emerged over the years as a way of addressing community concerns about development and environment. In some cases, very

BOX 11

McAdam Sustainable Development Strategy

Through a process of community development, residents of McAdam, a small town of 1,600 people in southwestern New Brunswick, developed a set of action plans to fulfil the community's social, environmental and economic goals based on the results of a community survey, residents' own assessments of their community's strengths and weaknesses, and the threats and opportunities from outside. Strategic issues were prioritized and a number of possible actions were defined for each goal, whether it was the need to deal with contaminated soils or to keep schools in the community.

McAdam demonstrated that local ownership of the plan and process is very important, that the community partnership defined to develop the plan must be broad based, that government support must be available both at the planning and implementation stages, and that efforts must be made throughout the process to help maintain the momentum.

ambitious watershed plans have tried to put management questions into a longer-term framework: a 100-year plan was first used in Saskatoon in the 1970s to develop a plan for the South Saskatchewan River valley and a similar planning horizon has been used more recently in Sudbury, Ontario in the Ramsay Lake watershed.

The most difficult aspect so far has been getting people to feel excited, instead of threatened, by change.

– Green School Project, Ottawa

A recent and relatively large-scale example of a watershed planning exercise is the work done by the Royal Commission on the Future of the Toronto Waterfront (Box 12).

Greening the community

Various programs and projects across the country are aimed at "greening" communities. They tend to concentrate on water and energy conservation, water quality, waste reduction and management (Box 13), greenspace planning, parks, natural areas and wildlife habitat conservation issues. Less often addressed (particularly in smaller communities) are transportation, air quality and urban form issues. Many of these activities are community-driven, while others are municipal government initiatives that are often funded by provincial programs (Box 14).

Current water projects include water metering, building retrofits, water-use restrictions, water audits and public education. Energy conservation initiatives include retrofits of municipal and residential buildings, retrofits of municipal street lighting, development of energy efficiency standards for buildings, land-use planning that promotes energy efficiency, renewable energy sources, municipal transit fleet fuel conversion and district heating systems.

As for housing and urban land use, projects or programs are under way to promote conversion, neighbourhood and residential rehabilitation, infilling, mixed-use development, adaptive reuse and suburban density. Transportation alternatives being implemented at the local level in various municipalities across Canada include an increase in bicycle and pedestrian routes and public transit, the creation of high-occupancy vehicle lanes, the promotion of car pools, increased parking fees and support for tele-commuting.

Communities are also engaged in cleaning up local rivers and ravines, planting trees and doing bird counts. Although these "green" initiatives are less comprehensive than some other sustainability planning efforts under way at the community level, they are critical components of any transition to sustainability.

Box 12

Toronto waterfront

The Royal Commission on the Future of the Toronto Waterfront (also known as the Crombie Commission after its chairperson, David Crombie) was asked in 1988 to make recommendations regarding the future of the Toronto waterfront area. But in its first report, it acknowledged that "everything is connected to everything else," and it expanded the scope of its study to include the Oak Ridges Moraine, the Niagara Escarpment and the many rivers and streams that flow from these lands to Lake Ontario. The Commission recognized that anything happening in the watersheds of the Greater Toronto Area would undoubtedly be tied to the environmental quality and health of the waterfront area, and therefore it decided to consider the waterfront within the context of the greater bioregion in which it lies.

The Commission adopted and promoted an "ecosystem approach" to planning as an appropriate way of addressing the range of problems they were faced with, including a degraded physical environment, urban sprawl, overlapping and ineffectual jurisdictions, and fiscal inefficiencies.

Improved decision making

An important aspect of local round tables, healthy communities, green communities and other local initiatives is their contribution to changes in the ways that decisions will be made. By creating new forums for discussion and community-consensus building, these initiatives are helping citizens take action within their communities to influence municipal, provincial and even corporate decisions. In addition, municipal governments are making changes to encourage the adoption of more sustainable solutions.

Institutional change

Municipal environmental committees or task forces appear to be one of the most common organizational means of promoting sound environmental management. They are usually appointed by city councils usually to provide advice on environmental and sustainable development issues. A recent study of 50 municipalities in Canada found that half of them had environmental advisory groups.

In many cases, specific departments have been assigned responsibility for coordinating environmental activities. In other instances, positions have been created for an environmental coordinator, planner or engineer. These are, of course, more common in larger municipalities. In some cases, there are interdepartmental committees on environment, and in a few cases environmental offices have been established, often in the larger centres. There does not yet appear to be any movement toward joint environment-development departments or sustainable development officers.

Monitoring and reporting

A number of cities and regional municipalities have begun to address the issues of monitoring and reporting on progress in environmental protection and sustainability (Chapter 5.5). A dozen cities have completed state of the environment reports and others are currently preparing them. Most of these initiatives, however, appear to be in the larger municipalities where financial and technical resources may be more available. In Toronto, a very innovative and much more

BOX 13

Guelph wet-dry waste collection

Since 1989, the City of Guelph has conducted a pilot Wet-Dry Recycling Program. It began with 565 volunteer homes, but within two years 865 homes were involved. It operates with nearly 100% participation. Many participants find the program simpler than the blue box recycling program. Participants are required to separate their household waste into two streams, "wet" (compostable and non-compostable) and "dry" (recyclable and non-recyclable items).

The City is preparing to include all residential, industrial, commercial and institutional properties in the program beginning in 1995. Although such programs exist in some parts of Europe, Guelph could become the first city in North America to use an integrated wet-dry system on a city-wide basis. This may divert as much as 67% of residential waste from the landfill.

BOX 14

Ontario's Green Community Initiative

The Green Community Initiative in Ontario encourages communities to become responsible for designing and delivering their own green action plans. Steering committees, composed of a broad cross-section of community interests, develop an action plan that addresses in an integrated manner local concerns about energy, water and waste.

Supported by the Ministries of Environment and Energy, and Natural Resources, the Green Community Initiative is an attempt to move away from traditional program delivery toward community-driven planning and action. Funding is provided for the strategic planning phase of the process and some money is available for implementation, but communities are ultimately responsible for making their programs self-sufficient. Although focussed originally on energy, water and waste auditing, communities have broadened the program to accommodate a wider range of issues, including land-use planning, decision making, alternative transportation and environmental businesses.

Tobacco companies spend about $2.5 billion each year on cigarette advertising... the same amount it would take to prevent the deaths of about 50 million children.

comprehensive *State of the City* report has been prepared (Box 75, Chapter 5).

In order to report effectively, there is a need to monitor conditions in the municipality or region. Although monitoring has often been associated with governments, there is now a movement toward community programs. Most of these attempts to involve local citizens in monitoring have focussed on watersheds. Volunteers have been engaged in water sampling, testing and other monitoring techniques such as observing erosion rates and looking for unusual discharge from outfall pipes. A major goal of these activities is to increase community members' awareness of their surroundings so that they can better detect changes in environmental conditions.

Not all organizations at the municipal/ community level are aware of the value of reporting. Even when its value is recognized, reporting is often considered too technical and too expensive to be seriously considered at the community level.

– Douglas Burch, *Municipal Reporting on Sustainable Development: A Status Review. 1994*

Environmental Impact Assessment

Environmental Impact Assessment (EIA) has been a part of federal and provincial decision making for 20 years but has not been used by municipal governments to make development or other types of decisions until recently. However, since municipal governments have become more aware of the degree to which their decisions affect their hopes for healthy and sustainable communities, more of them now consider using a municipal environmental assessment process (Box 15).

Research and networking

Although mechanisms for information and experience sharing are not yet well-developed at the local level in Canada, many people and groups recognize the need. A number of initiatives are under way to address this concern.

Provincial round tables in British Columbia, Manitoba and Ontario have been actively encouraging the formation of province-wide networks of local sustainability planning initiatives. This is also true in Nova Scotia, where the Sustainable Communities Network of Nova Scotia has been established as a way to encourage information exchange, educational opportunities and cooperation between groups involved in sustainable community development across the province.

In addition to these provincial networks, the Federation of Canadian Municipalities, through its Canadian Urban Research on the Environment (CURE) project, is working at the national level to establish

Box 15

Environmental evaluation in Ottawa

The Municipal Environmental Evaluation Process (MEEP) was established as a new requirement under the City of Ottawa's 1991 Official Plan. Modeled on the federal and provincial environmental assessment processes, MEEP applies to local activities that have an impact on the environment, but are not assessed through the EIA processes at the more senior levels of government. It consists of two phases: a screening process and, if necessary, a detailed study or Municipal Environmental Evaluation Report (MEER).

All activities requiring City of Ottawa approval will be subject to MEEP. This will include City of Ottawa development and non-development activities, private sector development proposals requiring planning approvals from the City, and development proposals from other agencies and levels of government requiring city planning approval.

an information system to assist Canadian municipalities in enhancing their environmental initiatives by sharing information, techniques and innovations.

The International Council for Local Environmental Initiatives (ICLEI), established by some 200 municipalities from over 40 countries, acts at the international level as a clearing house for sustainable development and environmental policies, programs and tools used at the local level.

As for research, a number of university departments across Canada are involved in sustainable communities research. In addition, the Intergovernmental Committee on Urban and Regional Research (ICURR) has done a considerable amount of work on sustainable cities. It shares its results along with other relevant research through its information services.

... few fully acknowledge that to achieve sustainable communities, a redistribution of power is necessary. Fewer still appear ready to let go of some of their control in order to empower people in communities to make meaningful change.

– Janice Harvey, *NRTEE Review*, 1994.

Many municipalities in Canada are involved in partnership projects where they exchange information with cities in other countries. In fact, more than 100 municipalities in Canada have partner cities elsewhere in the world. These relationships provide opportunities for local governments to share experiences globally. What is shared can vary from municipal governing expertise to infrastructure-related technologies to exchange of goods.

Some lessons learned about community sustainability planning

Everyone must believe in the process and have ample opportunity for input.

The process must be community driven and led, but will be more successful if there is also some top-down endorsement.

The community partnership must be a balanced group that the community respects.

Technical and financial support from governments is needed.

Communities need better and more affordable access to information and expertise.

The key element of community planning should be self-help.

Success stories can be a powerful motivator for a sceptical community.

Building links with other communities through networks or meetings is helpful to communities engaged in sustainability planning.

There is a need to balance longer-term planning with shorter-term action.

These processes take longer than expected and require patience, but in the end they deliver something very different from the products of conventional processes.

2.2 Provincial and territorial initiatives

Provincial governments play major roles in decisions concerning environmental protection and resource use. Many regional differences in Canada are reflected in the different priorities and approaches adopted at the provincial level. Some efforts that have been made at the provincial level by governments, businesses and NGOs to promote sustainable development are described below.

Sustainable development and conservation strategies

In response to the 1980 World Conservation Strategy, a number of jurisdictions in Canada began developing their own conservation strategies. In Prince Edward Island, the Department of Environment developed the first provincial conservation strategy (1987).

In 1992, transportation accounted for 30% of all energy use in Canada...but 66% of carbon monoxide, 58% of nitrogen oxides and 42% of VOCs emitted to the air.

In the mid-1980s, Alberta's Environment Council and Quebec's *Conseil de la conservation et de l'environnement* were asked to prepare conservation strategies that their respective provincial governments could consider.

Perhaps the most comprehensive of these strategies was prepared in the Yukon by the Department of Renewable Resources in cooperation with a public working group. The *Yukon Conservation Strategy*, released in 1990, outlined principles, established goals and made recommendations regarding resources, industries and environmental protection, as well as cultural, historical and heritage issues. It also discussed the tools to be used in implementing the plan.

Although conservation strategies in some cases were precursors to sustainable development strategies, focussing more on environment and conservation issues than on integrating environment and development, in other cases, as in the Yukon, they have essentially served both purposes. Provinces and territories in Canada all have, or are in the process of creating, sustainable development strategies that should be critical components of a national sustainable development strategy. For the most part, they are the products of provincial round tables on the environment and the economy.

Strategies have been completed in British Columbia, Saskatchewan, Manitoba, Ontario, New Brunswick and Nova Scotia. The (now defunct) Environment Council of Alberta also produced a comprehensive report entitled *Ensuring Prosperity: Implementing Sustainable Development*. In Quebec and Newfoundland, round tables have been mandated to develop sustainable development strategies, though these have not yet been completed. In the Northwest Territories, instead of developing a sustainable development strategy, a sustainable development policy has been implemented as a frame of reference for decision making.

These strategies have described principles to guide decision making, goals, actions required, and tools or mechanisms needed to make the changes. Although each strategy was developed independently, the processes that emerged were similar in a number of ways (Box 17).

Although such forward-looking strategies are difficult to develop, implementing them is the real challenge. Some provincial round tables were disbanded shortly after completing their strategy; others continue to promote the transition to sustainable development in their respective jurisdictions, either through continued research and consensus building around specific issues, or by monitoring and encouraging implementation.

Land-use and integrated resource planning

Most of the strategies described above recognize two important pieces of the sustainability challenge: the need to improve

BOX 17

Provincial strategies: the process

Although provincial strategies were not developed through identical processes, they did share many features:

- most jurisdictions adopted the multistakeholder round table model as the means to develop their strategy;
- the number of individuals involved in the round table varied, as did their constituencies (i.e., governments were directly represented in some cases, but not in others);
- in all cases, there was considerable public involvement;
- advisory or working groups were often used to prepare and submit background sectoral reports;
- draft strategies or consultation documents were used to solicit input from a broader public; and
- strategies took from two to five years to develop.

land-use planning and the need to move toward more integrated resource-use management. A number of provincial governments have recently undertaken, or are currently involved in, related land-use planning efforts (Boxes 18 and 19). These studies have recognized the need for planning processes that will ensure the development of local, regional and provincial plans in a coordinated and integrated manner. They also recognize that environmental concerns must be carefully considered and integrated with resource-use decisions.

... "shop talk" among (planners) is more likely to concern current retailing trends or enhancing the municipal tax base than river basin planning or forest management.

– Nigel Richardson, *Land Use Planning and Sustainable Development in Canada*, 1989

NGOs have also proposed land-use plans as alternatives to those being developed by governments. The Western Canada Wilderness Committee (WCWC), for example, has developed its own conservation vision for Vancouver Island, which is quite different from the plan generated by the British Columbia government's Commission on Resources and the Environment (CORE).

For some time, provincial governments have recognized the need for more integrated resource management. Continuing to make single-resource-use decisions in isolation from other resource users and interests has led to conflict and over-allocation of resources. The government of Alberta committed itself to integrated resource planning as long ago as 1975 through the adoption of its Integrated Resource Planning System, which describes how resource-use plans should be developed.

Many provincial departments are now being forced to work in a more integrated fashion as downsizing and cost-cutting measures have resulted in the integration, or in some cases the reintegration, of related resource departments. In Nova Scotia, for example, the Department of Mines and Energy and the Department of Lands and Forest were merged in 1990 to form the Department of Natural Resources. Integrated resource plans for eight regions of the province are now being developed.

Conservation Authorities in Ontario (and similar bodies in other provinces) are another mechanism through which more integrated resource-use planning can be undertaken. Provincial legislation authorized these Conservation Authorities to manage natural

Box 18

Ontario's Sewell Commission

Ontario's Commission on Planning and Development Reform presented its final report in June 1993. Developed over a period of 15 months, it recommends that provincial goals and policies incorporating environmental and other considerations should be clearly articulated; municipal planning responsibilities should be enhanced; clearer relationships between levels of government need to be established; more comprehensive public involvement must be encouraged; and more timely and efficient processes for decision making and dispute resolution need to be developed. The Commission also outlined proposed new provincial policy statements for natural heritage and ecosystem protection and restoration, community development and infrastructure, housing, agricultural land, conservation, and non-renewable resources. The Commission emphasized that regional plans must be consistent with these provincial policy statements.

Box 19

New Brunswick's Commission on Land Use and the Rural Environment

The New Brunswick Commission on Land Use and the Rural Environment (CLURE) was established to explore various issues facing land use and the rural environment and to recommend policies to protect and enhance the quality of the rural environment in the province while fostering sustainable development and responsible use of natural resources. After an extensive process of consultation, it produced a report in 1993 that presented an overall provincial strategy for rural planning – one that would enable urban and rural residents to plan and develop their communities in a coordinated and integrated fashion while respecting the principles of sustainable development.

resources on a watershed basis in cooperation with municipal and provincial governments. As long as 50 years ago, the Conservation Authorities recognized that planning was needed on a provincial scale in order to restore and properly use Ontario's natural resources. They also realized that this planning had to consider the different elements (water, erosion, reforestation, etc.) as "inseparable and interlocking aspects of one central problem."

Many other integrated resource management efforts are uncer way at the provincial level, including strategies for wildlife, parks and protected areas, and forestry. They are succeeding to varying degrees in advancing toward more integrated approaches for resource use and land management.

Sectoral and intersectoral initiatives

Agriculture

The loss and degradation of topsoil, excessive use of fertilizers, and dependence on non-renewable fuels threaten the sustainability of agriculture in Canada. Many provinces have programs to encourage soil conservation, protect water bodies from agricultural pollution and reduce dependence on pesticides, but less attention is being given to issues such as biodiversity and climate change. Farmers themselves, through organizations such as the National Farmers Union, have been addressing issues related to agriculture and sustainability (Box 20).

In addition to these national concerns, programs specific to certain provinces or regions are needed. For example, the Prince Edward Island Department of Agriculture is involved in a program that encourages farmers to compost, rather than bury, unsold or spoiled potatoes. This kind of program demonstrates that key issues and priorities vary from region to region. In Ontario, farmers are trying to address some of their particular priorities through the development of farm plans (Box 21).

Provincial sustainable development strategies have recognized other concerns that will have to be considered if agriculture is to become a sustainable practice. These include the need to promote local production and consumption through marketing strategies, the need to ensure that farmers can earn a living wage, the need to provide consumers with better information about agricultural products

Box 20

National Farmers Union (NFU)

A draft National Farmers Union Policy on Sustainable Agriculture and Food Supply was presented and discussed at the NFU's 1994 annual convention. The policy aims to achieve a food production, processing and distribution system that is economically viable, socially just and ecologically sound. Sustainable agriculture, it suggests, must be based on an understanding: that farmers have an obligation to society as providers of safe and nutritious food products and as stewards of soil, water, air and natural landscapes, while society must in return enable farmers to take on this role by providing safeguards against the loss of incomes below an acceptable level and against eviction from their farms and homes.

The policy includes economic considerations; ecological considerations; intellectual property rights and genetic engineering; food security, safety and quality; rural communities; marketing, trade and international relations; and research, education and extension work.

Box 21

Our Farm Environmental Agenda

An Ontario initiative hopes to encourage the development of 40,000 environmental plans for farms across the province. Co-sponsored by the Ontario Federation of Agriculture, the Christian Farmers Federation of Ontario, AGCare (Agricultural Groups Concerned About Resources and the Environment), and the Ontario Farm Animal Council, Our Farm Environmental Agenda outlines critical environmental concerns for agriculture in Ontario and encourages individual farmers to develop their own environmental plans.

While encouraging the development of individual farm plans, these groups also recognize that some issues will have to be dealt with in coordinated ways by governments and the research community. That is why they see this as the beginning of a process for further cooperation and consultation among farmers, governments and researchers.

(whether they were produced locally, with chemicals, etc.) and the need to consider how the agricultural sector contributes to global warming and what it will have to do to adapt to warming trends.

Forestry

The provinces control 80% of productive forest land in Canada and are responsible for natural resources management. Their efforts to manage forest lands are critical to healthy forest ecosystems in the country.

Many provinces have revised their forest policies, programs and legislation since the mid-1980s. In British Columbia, Alberta and Ontario, forestry codes of practice have been developed at the provincial level. In New Brunswick, a regional round table on forestry has been established. Resource departments in Saskatchewan, Newfoundland and the Northwest Territories are working with stakeholders to develop integrated forest management plans. In Alberta, a provincial forest conservation strategy is also being developed with the assistance of a multistakeholder advisory group.

While integrated management is widely recognized as essential, establishing integrated management and planning mechanisms is a difficult task ...The greatest barriers are current arrangements for managing our resources.

– *Conservation Strategy for Sustainable Development in Saskatchewan*, 1992

Most provincial sustainable development strategies address the issue of forest management, and many received input from a forest sector task force. In Manitoba, the provincial government responded to the forestry commitments it made in its sustainable development strategy by releasing a report that outlines how government will act on the 41 policies in the strategy. Provinces have also been very active in Canada's Model Forest Program and the National Forest Strategy, which are described in Chapter 2.4.

Mining

One hundred and fifteen Canadian communities are dependent on mining-related activities. Many provincial governments, such as Manitoba's, have been working toward improved environmental regulations to protect against air and water pollution caused by mining activities (Box 22).

In a number of cases, there has been demonstrable improvement in the operations of mining companies. Canada has become a world leader in many aspects of mine reclamation. Technology and operations could, however, be further enhanced to improve the environmental performance and economic competitiveness of the mining industry. Most provinces do address the issue of reclamation of old or abandoned mine sites, and the industry does recognize that reclamation is an integral part of the mining cycle.

Box 22

Manitoba minerals strategy

Manitoba's Sustainable Development Strategy contains 16 component strategies, including the Land and Water Strategy, which in turn includes a sustainable minerals strategy. Released in April 1994, it consists of 41 policies in eight policy areas: environmental protection, health protection and safety, supply and availability, growth and development, planning and integrated management, public awareness, rehabilitation and mine closure. The strategy outlines the intent of each policy, describes what Manitoba will do to meet it, and makes some suggestions on what local governments, business, NGOs and the public can do to help achieve the aims of the policy.

The minerals strategy was developed through a process that has characterized Manitoba's approach to sustainability planning. A workbook listing a number of draft minerals policies was released to encourage comment on how they might be changed or refined; a report was published summarizing public input derived from the response forms that had been mailed in; then, the minerals strategy was completed.

Other mining issues highlighted by some provincial sustainable development strategies include the need for more research to improve mining techniques and waste disposal practices; the importance of conserving mineral wealth; the role of recovery, reuse and recycling of minerals and metals; land-use conflicts surrounding exploration rights; and the need to develop new industries and technologies to replace depleted mineral resources.

The real challenge facing transportation planners and related policy developers is to gradually change public behaviour in favour of alternative transportation modes...

– Don Drackley, *Plan Canada*, 1994

Education

A number of interested parties are ensuring that Canadian schools teach students about sustainable development. One example is Learning for a Sustainable Future, an organization created to help Canadian educators make sustainable development a reality in school systems from kindergarten to Grade 12. The organization aims to facilitate the cooperative development of provincial and territorial frameworks, support program development, and identify and disseminate the most innovative models of sustainable development education.

Although there are several national initiatives related to environment and education, most occur at the provincial or school board level. For example, the Scarborough Board of Education in Metropolitan Toronto hosts an annual one-day Global Futures Conference for senior high school students. It invites speakers from environmental and development organizations and "green" businesses to present a range of perspectives to students. Many current efforts incorporate sustainable development into provincial curriculum guidelines and prepare curriculum support materials for teachers.

The responsibility for reorienting society to sustainable development does not fall solely on governments. Representatives from government, youth, industry, labour, Aboriginal and environment groups joined together in 1993 with representatives from all Canadian provinces and all levels of the educational system to establish the Canadian Network for Environmental Education and Communication. Some of the network's goals are encouraging the communication and exchange of information among those involved in environmental education, and improving the quality of environmental education in Canada. There is also a Global Education Program stressing global interdependence (Box 23).

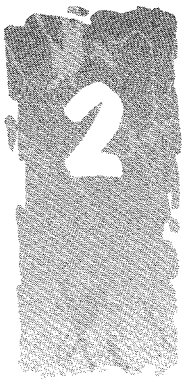
Box 23

Global education in schools

The Global Education Program seeks to develop knowledge, attitudes and skills that enable teachers and students to understand the global challenges they face, to appreciate interdependence and to be more responsible citizens. Funded by the Canadian International Development Agency (CIDA) and operated by provincial teachers' organizations and faculties of education, Global Education promotes knowledge of global issues, as well as the skills needed to address them. Through it, people can acquire values that give priority to ecological sustainability, global interdependence, social justice for all the world's people, peace, human rights, and mutually beneficial processes of economic, social and cultural development. It is organized around six themes: self-esteem and responsibility, global interdependence, commonality in diversity, biocentrism, futures perspective, and systems thinking.

Transportation

The transportation sector is the largest contributor to air pollution in Canada. Many provincial transport departments have environmental policies, or environmental sections whose job is to coordinate assessments of



projects and ensure that proper environmental protection measures are taken. Provincial governments also support the Transportation Association of Canada's Environmental Code of Ethics, which addresses issues of integrated transportation planning, assessment of cumulative effects, noise reduction, atmospheric protection, etc.

Almost nothing has been done compared to what is needed to meet the existing (greenhouse gas reduction) target.

– B.C. Energy Council, *An Energy Strategy for British Columbia, 1994*

Less work appears to have been done on broader sustainability issues related to transportation. Although many of the provincial sustainable development strategies demonstrated the need for regional transportation plans, increased use of public transit, designated express lanes for buses, bicycle paths on roads, and more equitable taxation and subsidization for road and rail transport, little progress has been made in these areas.

Some transportation issues, notably rail and air, cannot be adequately addressed at the provincial level, but must be dealt with cooperatively on a national scale.

Energy

Most provinces and territories have established energy conservation and renewable energy programs. These cover conservation practices in industrial, commercial, institutional and residential buildings as well as personal transportation, municipal operations and agriculture. Work on renewable energy at the provincial level includes wind, solar and geothermal energy, and energy from waste.

Provincial government involvement in each of these areas may include educational activities, research and development, demonstrations, financial incentives and the development of standards and regulations, but these are still given less support than traditional energy policies and programs.

In Newfoundland, a strategic plan for energy efficiency and energy alternatives has been developed. Among the objectives are reducing the negative effects of energy production on the environment, securing the economic benefits of new investment in the building and energy industries, lowering energy costs for consumers, and improving business competitiveness.

In British Columbia, an Energy Council was established on the recommendation of the British Columbia Round Table to conduct independent and comprehensive planning for sustainable energy use. Unfortunately, both the Round Table and the Council lost their funding in the provincial government's 1994 budget, but not before the Energy Council released its energy strategy for the province, *Planning Today for Tomorrow's Energy*.

Many provincial energy utilities also have energy efficiency programs. Expenditures on these programs likely amount to several hundred million dollars per year. An Ontario Hydro task force recently completed a *Strategy for Sustainable Energy Development and Use for Ontario Hydro* in an effort to determine how to pursue more sustainable forms of energy production and use, and to achieve a more energy-efficient and competitive economy in the province.

Tourism

There has been considerable interest in ecotourism and recognition of its potential value as an industry of the future for a number of regions in Canada. The Tourism Industry Association of Canada,

in cooperation with the National Round Table on the Environment and the Economy and the Prince Edward Island and Saskatchewan Round Tables, initiated a dialogue on sustainable tourism in 1992 which produced Codes of Ethics for tourists and the tourism industry. In addition, guidelines were adopted to encourage various interests in the tourism industry to use more sustainable practices.

Economic renewal strategies

Traditionally, the provinces have had economic development strategies in place in order to plan for economic growth. Although a sustainable development strategy could replace the need for both a conservation strategy and an economic development strategy, in practice they have remained separate undertakings.

There is some indication, however, that economic strategies at the provincial level are beginning to recognize the importance of environmental protection and even to explore the concept of sustainable development. In Alberta's 1993 Economic Strategy, sustainable economic development is recognized, as is the need for indicators of progress toward sustainable development. In Ontario, the Premier's Council on Economic Renewal proposes developing strategic goals for the province based on three co-equal principles: wealth creation, social well-being, and environmental protection.

In terms of promoting regional economic development, federal and provincial governments have started to think about sustainability. Nova Scotia and Prince Edward Island, for example, have signed cooperation agreements with Canada on sustainable economic development.

Health and environment

Most provinces have recognized that there is a strong connection between health and environment. In Quebec, the health and environment ministries have a formal agreement between them to identify priority areas for coordination and mechanisms for cooperation. In Ontario, as in other provinces, an interministerial advisory committee tries to coordinate health and environment activities. Ontario's Premier's Council has also done some very innovative work on the health issue in recent years (Box 24).

The Canadian Council of Ministers of the Environment (CCME) recently prepared a discussion paper that considered the health-environment link and recommended some priority areas where environment and health ministers might begin to work together. Although little action has been taken, there is certainly an increased institutional awareness of the relationship between environment and health.

BOX 24

Our Environment, Our Health

In 1989, the Ontario Premier's Council on Health (now Premier's Council on Health, Well-Being and Social Justice) presented a vision of health that included five goals: shift the emphasis to health promotion and disease prevention; foster strong and supportive families and communities; ensure a safe, vibrant physical environment; increase the number of years that Ontarians enjoy good health by reducing illness, disability and premature death; and provide accessible, affordable and appropriate health services for all. These health goals have been adopted by the Government of Ontario.

The Premier's Council, asked to elaborate a strategy for achieving each of these goals, prepared a report entitled *Our Environment, Our Health* outlining a strategy on how to achieve healthy ecosystems, healthy communities and healthy work places.

The strategy addresses concerns such as how to protect fragile ecosystems; how to restore degraded ecosystems; the need to integrate land use, human services and transportation planning; how to increase public involvement in community planning; how to eliminate exposure to toxic substances in the work place, and how to involve employees in decision making in the work place. The report emphasizes that, although the physical environment and its effect on health are very important, they cannot be treated in isolation from issues related to our social, economic, cultural and psychological environments.

Much of the best work has been undertaken through the Healthy Communities movement described in Chapter 2.1.

Clean air and water

Many provinces have recently developed or revised clean air and clean water strategies or management plans. In Nova Scotia, Ministers' Task Forces on both clean air and clean water have reported in the last two years, proposing strategies for protecting these vital ecosystem components. In Alberta, the province is currently reviewing its water management policies and is also actively engaged in implementing the Alberta Clean Air Strategy (Box 25). British Columbia is also currently reviewing provincial water policies and developing a clean air strategy for the province. In Manitoba, as part of the provincial sustainable development strategy, a set of provincial water policies has been articulated so that the province will manage its water supply in a sustainable way.

Curbside recycling is now available to more than half of the urban households in Canada. Where it is available, most people use it.

– *B.C. State of Environment Report,* 1993

Waste reduction, reuse and recycling

In 1989, all provinces and territories adopted CCME's goal of reducing waste generation by 50% by the year 2000. Most provincial governments have since launched programs to help them achieve this goal. The pressure – to meet a goal that has been collectively established at the national level and can be concretely measured – may be greater than for other province-specific undertakings. This may explain why so much activity has taken place in this area.

In 1991, the Ministry of Environment in Ontario announced its Waste Reduction Action Plan (WRAP), which was intended to ensure that at least 25% of the province's waste would be diverted from disposal by 1992, and 50% by the year 2000. In Manitoba, a multistakeholder Recycling Action Committee was established in June 1989 to consult and advise the government on how to meet the 50% reduction goal. The Manitoba Waste Reduction and Prevention Act was proclaimed in 1990 as a mechanism for implementing the 56 recommendations made by the committee. In both provinces, action has focussed on at-source reduction, public education and recycling.

Box 25

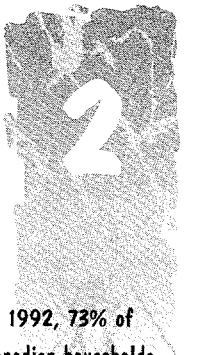
Alberta's Clean Air Strategic Alliance

In March 1990, Alberta established a process to review its approach to air-quality issues. Known as the Clean Air Strategy, it was directed by a multistakeholder advisory committee. The goal was to review the province's position on air-quality issues, address the effects of energy-related pollution, and develop recommendations for future action. An extensive public consultation process led to the Clean Air Strategy, which was presented to Cabinet in June 1992. Its first priority was establishing a Comprehensive Air Quality Management System to be designed and implemented by clean air stakeholders.

The Clean Air Strategic Alliance (CASA), formed in March 1994, is responsible for the development and implementation of the Comprehensive Air Quality Management System for Alberta. Its responsibilities include identifying air-quality issues, prioritizing specific problems, allocating and coordinating resources, developing action plans and evaluating results. CASA represents a new approach to the management of air pollution issues because the government of Alberta has formally agreed to share decision-making responsibility for clean air issues with a Board of Directors consisting of stakeholder groups.

Improved decision making

A number of tools or changes in the way we do things can contribute to decision making that can effectively promote sustainability. Three factors contributing to improved decision making in the provincial context are described briefly below.



In 1992, 73% of Canadian households were equipped with video cassette recorders...but only 28% had low-flow shower heads, 10% had low-flow toilet tanks, and 11% had compact fluorescent light bulbs.

Institutional change

A number of institutional changes have been made within provincial governments to reflect the need for integration and the importance of sustainable development. Some of the most significant changes have been made in Manitoba (Box 65, Chapter 5).

Other changes include the establishment in Quebec of ministerial and interdepartmental committees to facilitate integrated decision making; the adoption in the Northwest Territories of a sustainable development policy; and efforts in some provinces (most recently in Nova Scotia) to consolidate environmental legislation into single Acts. These institutional changes help create a more efficient and effective regulatory climate, and should lead to better protection of the environment.

Environmental Impact Assessment

All provinces and territories in Canada have some form of environmental assessment process. In some cases, environmental assessment laws have been in place since the mid-1970s (e.g., Ontario and New Brunswick), while other processes were not legislated until the late 1980s or even, early 1990s.

Because each assessment process was built on the experiences of others, the processes have many features in common: most assessments apply only to projects (not programs or policies); assessment requirements are applied to both public and private sector proposals; and often there is a provision for screening out minor projects to ensure an efficient system. Environmental assessment documents are generally required, and these are submitted by the proponent to the government for review. In each case, some provision exists for public hearings to review certain assessment documents. The hearing board often only makes recommendations to the Minister about the proposal.

In 1992, provincial and territorial governments, along with the federal government, signed a *Framework for Environmental Assessment Harmonization*. By doing so, they agreed to cooperate and coordinate their environmental assessment processes.

Many provincial governments have recently reviewed their environmental assessment processes in order to ensure that they are as effective and efficient as possible. British Columbia, Saskatchewan and Ontario have all recently reviewed their processes, though it remains to be seen how these reviews will be responded to.

Reporting

State of the environment reports (SOERs) have been prepared at the provincial level in British Columbia, Saskatchewan, Manitoba and Quebec, and are being prepared in Alberta (where they are now required by law), Ontario and the Yukon. A report for the Atlantic provinces was released in June 1994. Most of the provincial work on reporting, on municipal and national levels, has focussed on environmental indicators, though Saskatchewan recently prepared a report on the need for sustainability indicators.

Provincial and territorial governments are working through a CCME task group to improve and harmonize SOER structures across the country. As environmental indicators are developed and applied more consistently across the country, SOERs will become easier to read, and interprovincial comparisons will be more easily made. The task group hopes to eliminate duplication of effort, harmonize reporting approaches and identify areas where collaborative approaches will be most beneficial. A core set of environmental indicators is also being developed.

Accountability

In some provinces, considerable thought has been given to the idea of environmental auditing or commissioners for the environment because of the recognition that governments should be accountable for the ways in which their decisions affect the environment. Ontario is a leader in this area, with its new Commissioner for the Environment (Box 26).

In New Brunswick, rather than setting up a separate auditor, the Auditor General has decided to work toward greening the process of auditing government departments. The Auditor General is working with the New Brunswick Round Table on Environment and Economy to find ways of achieving this new objective.

Both British Columbia and Manitoba have recently been considering the possibility of taking legislative measures (a Sustainability Act and a Sustainable Development Act, respectively) to ensure that a formal and enduring commitment is made by their governments to social, environmental and economic sustainability.

Ontario Commissioner for the Environment

The Office of the Environmental Commissioner was created in February 1994 to ensure a way of objectively overseeing and measuring the implementation of the 1994 Act Respecting Environmental Rights in Ontario. The Commissioner will be accountable directly to the legislature, and her office will guide and monitor the development of departmental Statements of Environmental Values, including analyses of how well policies and programs are reflecting those statements of values.

This ground-breaking legislation in Ontario was drafted by the Task Force on the Ontario Environmental Bill of Rights, composed of individual representatives from business, environment groups and government.

2.3 Regional initiatives

Unlike local and provincial initiatives, regional initiatives are not based on a level of government but rather on a geographic area, often requiring that different levels of government work together. Some of the regional initiatives described below are contained within a single province, while others cross provincial and, in some cases, even international boundaries.

In the North, we already have fashioned some, perhaps many, of the pieces of the sustainable development jigsaw puzzle...But each piece is insufficient in and of itself, and we still need a comprehensive picture to guide us in assembling the parts.

– Terry Fenge, Canadian Arctic Resources Committee

Most of these initiatives grew out of a recognition that management must be based on ecosystem, rather than political, boundaries. Many are river-based projects because watersheds are relatively well understood and easily delineated "regions." In the North, there appears to be a strong understanding of the need to look at and manage the Arctic as an ecoregion. These regional initiatives are good examples of efforts to manage ecosystems in an integrated and a cooperative manner.

Northern Canada

Considerable effort has been made over the last several years to develop appropriate policies for sustainable development in the North. Many of these initiatives are circumpolar in nature, reflecting the need to deal with sustainability in the Arctic on a regional level that crosses jurisdictional boundaries.

Circumpolar Arctic Environmental Protection Strategy

The 1991 Arctic Environmental Protection Strategy resulted from cooperation among the eight circumpolar countries and Indigenous peoples. In addition to a number

Habitat destruction now constitutes a much greater threat than over-hunting to many wildlife species. 216 species in Canada are currently listed as endangered, threatened or vulnerable.

of working groups, a Task Force on Sustainable Development and Utilization has been formed, with representatives from the eight circumpolar countries and official observers from three Aboriginal groups. Its goal is to propose steps governments should take to meet their commitment to sustainable development in the Arctic, including the sustainable use of renewable resources by Indigenous peoples. Its objectives are to prepare reports and make recommendations to Ministers at the Third Ministerial Conference on the Arctic Environment (scheduled for Northern Canada in spring 1996) on the following:

a) identification of goals and principles of sustainable development in an Arctic environmental context; opportunities and mechanisms for applying the principles;

b) opportunities for the enhancement of Indigenous peoples' economies, and the improvement the environmental, economic and social conditions of Arctic communities through the sustainable use of natural resources, while protecting cultures of Indigenous peoples;

c) specific issues and problems on the conservation, sustainable use and protection of Arctic flora and fauna presented by management, planning and development activities; proposals for measures to mitigate or resolve such issues; and

d) the need for knowledge, ways of facilitating communication concerning the application of new or proven technologies, and management practices.

National Arctic Environmental Strategy

On a national level, the Arctic Environmental Strategy, a component of the *Green Plan*, was designed to "preserve and enhance the integrity, health, biodiversity and productivity of our Arctic ecosystems for the benefit of present and future generations." The emphasis is to provide Northerners with job opportunities, as well as the skills and knowledge needed to manage their resources and counter environmental damage.

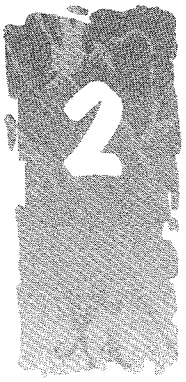
The four action programs – Contaminants, Water, Waste Management, and Environment/Economy Integration – contribute to the implementation of sustainable development. The last of these, including the Community Resource Management Program, is the most direct. Given the strong involvement of Northerners and Aboriginal partners and the termination of current funding in 1996/97, a formal evaluation framework is being developed to facilitate making a decision on the value of renewing the Strategy.

Consulting and Audit Canada has contributed to the evaluation by preparing a report whose central message is that the Arctic Environmental Strategy has been effective in many ways. This includes significant progress in mitigating environmental issues, direct and indirect economic benefits for Northerners, significant community support and participation, the involvement of First Nations, and increased understanding among Northerners of the program's objectives.

Inuit Regional Conservation Strategy and other Inuit-led initiatives

In addition to these government-led strategies, an Inuit Regional Conservation Strategy was prepared in 1986 by the Inuit Circumpolar Conference (ICC) in response to the World Conservation Strategy. It was the first regional-international conservation strategy, and also the first prepared by Indigenous peoples.

The strategy covers both process and substance issues, outlining an action plan,



as well as mechanisms for consensus building and training including building and maintaining a register of Inuit experts; documenting traditional and modern experience and knowledge in a manual of Inuit management; developing a protected areas network; carrying out sustainable development demonstration projects; and managing shared resources and international cooperation.

The ICC has also helped to develop principles to guide a comprehensive Arctic policy. These principles address security, environmental, economic, social and cultural issues from an Inuit perspective, which is seen as a first step toward Inuit self-determination. They also describe the unique relationship of Inuit people to their land – referred to as ecodevelopment. This culturally oriented initiative brings a human ecology perspective to the sustainable development issue.

Despite progress in cleaning up industrial and municipal pollution over the past 20 years, the integrity of the Great Lakes and life forms that depend on them remain at an unacceptable level of risk from persistent toxic substances.

– IJC, *Seventh Biennial Report, 1994*

Many other initiatives are under way in the North, notably the negotiation and implementation of land claim settlements. Cooperative wildlife management programs, for example, where government approaches to resource management are blended with traditional Inuit management systems, are presenting a workable alternative to governments' traditional top-down approach to resource management.

Great Lakes and St. Lawrence River

The International Joint Commission (IJC) is an international organization established by the Boundary Waters Treaty of 1909 to assist the Governments of Canada and the United States to prevent and resolve issues arising along the common frontier. It issues Orders of Approval concerning certain works in waters that run along or cross the international boundary, and undertakes investigations at the request of the two governments.

Issues related to the implementation of the Great Lakes Water Quality Agreement, first signed in 1972, are the largest component of the IJC's workload. The explicit provision for a public information program under this agreement and the requirement for a comprehensive ecosystem approach to the restoration and protection of the integrity of the Great Lakes aquatic system provide both an obligation and an opportunity to address a wide range of issues.

On a broader scale, the IJC has been encouraging governments and other sectors to accept their responsibilities for addressing the virtual elimination of persistent toxic chemicals in the Great Lakes Basin. To achieve that goal, the IJC has, among other things, urged the consideration of timetables for sunsetting certain chemicals, based on principles of precaution, reverse onus and weight of evidence. This also has global implications because chemicals often travel thousands of kilometres. The transition to an economy that would achieve that goal requires a comprehensive international strategy.

The IJC is encouraging consideration of an integrating, ecosystem approach to environmental education, research, policy and management, as well as concepts of sustainable development. The Great Lakes could well serve as a national and international laboratory for these activities. There

is broad public support; but the need for new methods of integrative science and an examination of conventional premises of science and policy are posing important challenges. Other work being done on the Great Lakes (e.g., remedial action plans) is reported elsewhere in this chapter.

Canada and Quebec have been partners since 1989 in the St. Lawrence Action Plan, which has focussed on conservation (protecting endangered species and sensitive areas), protection (negotiating pollution prevention and clean-up agreements with major polluting industries), restoration (techniques of dredging contaminated sediment and rehabilitation of wetlands), environmental technologies (cost-shared projects to develop and apply pollution abatement technologies), and the state of the environment (acquisition of knowledge and development of analytical tools).

In April 1994, the plan was renewed for four years, under the title St. Lawrence Vision 2000, and $191 million was committed ($100 million in federal money and $91 million from the Government of Quebec). Its mission is to conserve and protect the St. Lawrence ecosystem by restoring the use of the river through sustainable development. In addition to continuing the Action Plan's efforts to reduce industrial discharges, St. Lawrence Vision 2000 focusses on preventing pollution and conserving the river ecosystem.

Active partnerships among private sector, universities, environmental groups, research centres and local organizations are also encouraged. To this end, many ways to involve residents have been implemented. While building on the Action Plan's accomplishments, especially those involving protection and restoration of seven tributaries in Quebec, St. Lawrence Vision 2000 opens up new areas for action: biodiversity, agriculture, community involvement, decision-making assistance and health.

Atlantic Canada

There are a number of regional initiatives in Atlantic Canada that are or could become very important in the transition to sustainable development. The main vehicle for regional economic development in the four Atlantic provinces is the federal government's Atlantic Canada Opportunities Agency (ACOA).

About 25% of the drugs sold in a Canadian pharmacy are derived from tropical forests.

BOX 27

The Canada-Nova Scotia Agreement on Sustainable Economic Development

This four-year $15-million agreement, signed in March 1991, is being implemented by a federal-provincial management committee representing Environment Canada, the Atlantic Canada Opportunities Agency (ACOA), and the Nova Scotia departments of the Environment and of Economic Renewal. Its goals are

- to achieve sustainable development in Nova Scotia while taking full advantage of the business and economic opportunities associated with conservation and protection of the environment; and
- to create a track record of integrated planning and decision making, a business climate favourable to sustainable economic development, and a high level of public awareness that will survive beyond the term of the Agreement.

Over 150 projects have been approved, committing $7 million. Projects range from waste reduction and reuse, to improved integrated planning, and the development of new services and products for the environmental market. Efforts are being made to support a community-based economic development approach.

One of its programs, the Cooperation Program, encourages effective partnerships between governments and the private sector by reaching sectoral agreements and administering transfer payments. Spending under this program targets initiatives focussed on entrepreneurship, market and trade development, innovation and technology transfer, human resources and the environment. Both Nova Scotia (Box 27) and Prince Edward Island have signed Cooperation

Agreements on Sustainable Economic Development. In New Brunswick, there is a similar initiative called Action North (Box 28).

As in other parts of Canada, the Atlantic region supports regional initiatives promoting better coastal zone and watershed management. The Gulf of Maine Council on the Marine Environment, for example, is an interjurisdictional body committed to enhancing the marine environment in the Gulf of Maine. Made up of representatives of each province and state bordering the Gulf, the Council has developed a Gulf Action Plan and a gulf-wide monitoring program.

New Brunswick and Maine have also developed, through the St. Croix International Waterway Commission, a preliminary plan for long-term cooperative management of the St. Croix River. The plan outlines international goals and policy directions that will help to "preserve and celebrate an international heritage, maintain environmental integrity and support a sustainable, locally appropriate economy." To ensure implementation, the plan provides a timetable for action, prioritizing policy directions and actions, and stating a date by which they are to be initiated.

More and more, the Council has realized that inter-jurisdictional cooperation is necessary to address sustainability issues. For example, attempts by B.C. alone to change basic automobile design would be futile in a North American market 100 times the size of this province.

– B.C. Energy Council, *An Energy Strategy for British Columbia*, 1994

Western Canada

The Fraser River has been the focus of considerable activity in British Columbia. This large river flows 1,325 km from its source to its estuary in the Greater Vancouver area; its basin covers one-quarter of the province. In 1985, the Fraser River Estuary Management Program (FREMP) was established to "coordinate and build consensus on how to create a balance between environmental and economic considerations along the Fraser Estuary."

Five institutions, Environment Canada, British Columbia Ministry of Environment, Fisheries and Oceans Canada, the Fraser River Harbour Commission, and North Fraser Harbour Commission agreed to cooperate on water quality, waste management, water- and land-use planning, and public education and involvement. A draft estuary management plan is being reviewed. The hope is that all the various agencies involved will be encouraged to work more closely on management issues.

Another initiative is the Fraser Basin Management Program. It is managed by a board made up of individuals from communities throughout the region representing different levels of government, business, environmental and other community interests (Box 29).

Action North

In New Brunswick, the economic development initiative called "Action North" covers Restigouche County and part of Gloucester County. Its purpose is to assist the estimated 1,400 northern New Brunswick workers displaced from the forestry industry and their respective communities. The initiative was implemented in late 1993 through the Province of New Brunswick, the Atlantic Canada Opportunities Agency, the Restigouche and Chaleur Industrial Commissions and Human Resources Development Canada.

At the request of the provincial government, the (now defunct) British Columbia Round Table on Environment and Economy studied the Georgia Basin-Puget Sound Region, considering how it might best be managed. One of the most urgent priorities identified in the ensuing report was the management of urban growth and the need for "urban containment" and "integrated regional planning for growth."

The Georgia Basin-Puget Sound bioregion makes up less than 3% of the area of British Columbia, yet contains 60% of its population and 75% of its labour force. The report concludes that the primary causes of deterioration of the natural environment in the region are rapid population growth, human settlement patterns and over-consumption of resources. It suggests that the ability of the air and water to absorb the impact of human activities in the region is being severely strained. Recommendations are made in the areas of planning and governance for sustainability; developing compact communities; comprehensive transportation planning; environmental protection and management; energy; economy; social well-being; public awareness and education; and coordination and funding for implementation.

In an even broader interpretation of region, the Cascadia Institute has collaborated with Canada's International Centre for Sustainable Cities on a report outlining opportunities for achieving sustainability in a region known as Cascadia: Alaska, Yukon, British Columbia, Alberta, Washington, Oregon, Idaho and Montana. The driving forces behind the need for cooperation across political boundaries include sustainability and rapid urban growth; transportation; trade; tourism; and economic development.

As a separate initiative within this region, a number of conservation groups in Canada and the United States joined together in 1992 to form the Cascade International Alliance to work toward the designation of a Cascade International Park. Existing parks would be connected by new protected areas. This would create a large enough area to be set aside to fully protect the Cascades, biodiversity.

In a recent effort to address concerns about sustainability in the prairie region, the International Institute for Sustainable Development (IISD) has been involved in a study of sustainable development and the Great Plains. It has focussed attention on government policies and the effects these can have on the sustainability of farming practices. The Institute's report defines a framework for the development of policies that would promote sustainable development on the Plains and other regions.

Fraser Basin Management Program

This is a unique program that brings together four orders of government and non-governmental agencies to work together toward the economic, environmental and social sustainability of the entire Fraser River Basin.

Established in 1992 with a five-year mandate, its 19 member board developed a strategic plan outlining work in five key areas: development of key management strategies for the basin; demonstration projects to showcase sustainability in action at the local level; institutional development, including getting people to the table to work more effectively together; monitoring vital signs; and information, communications and education.

After two years of public consultation, steering committee activities and intergovernmental workshops, the board is now moving into a more active, hands on phase. Its vision of watershed management emphasizes a merging of top-down and bottom-up approaches to managing the basin, one that takes a watershed planning approach and involves local, consensus-based decision making. In addition to its work with six demonstration projects, the board is making recommendations on the future of flood control in the Fraser Valley, has proposed a watershed management plan for the Nechako watershed, and will also produce a State of the Basin Report outlining progress being made towards sustainability (May 1995). A comprehensive Strategy for Sustainability for the entire Fraser basin is planned for May 1997.

2.4 National initiatives

Federal government

Thirty-five federal departments, agencies and Crown corporations were surveyed to discover what they are doing to achieve sustainable development. The result is the following selective inventory of major strategies and initiatives received from the 23 respondents, including Ports Canada (Box 30) and the National Capital Commission (Box 31).

Strategies range from those at an embryonic stage to others that are more advanced. The survey results clearly show that the need for sustainable development is being internalized within the policy development and decision-making processes of the federal government. The shift from a reactive approach to a proactive "agent of change" approach has taken hold in many sectors.

In the transportation sector, for example, a fundamental review of the Department of Transport's environmental management framework will soon be completed. It is developing strategies to establish environmental awareness, build an environmental ethic, and achieve commitments to "prevention" and resource conservation.

According to the survey, sustainability is considered both a collective and an individual responsibility. The Department of National Defence, for example, plans to integrate the "environmental ethic" into the way each individual trains, operates and functions. For projects, the emphasis is shifting from clean-up to pollution prevention, and in terms of process, the shift is to openness and transparency in consultations and communications (Box 32).

The survey related to a number of commitments made in *Creating Opportunity*, the basis for the federal government's policy agenda. It has proved to be a beneficial exercise by showing that departments are moving in the same direction and by contributing to the government's own sustainable development strategy.

Green Plan

In December 1990, the federal government released Canada's *Green Plan*, a six-year national strategy and action plan for sustainable development. Based on an extensive consultation process in which over 10,000 Canadians participated, it set out a two-tiered framework for sustainable development. The first tier consists of action directed to environmental conservation, protection and

Box 30

Guiding environmental principles of the Canada Ports Corporation

Canada Ports Corporation (CPC) consists of eight Crown corporations responsible for the administration and management of 15 ports located on three coasts and inland waterways, which handle over half of Canada's waterborne exports and imports. Its guiding environmental principles call for it to:

- protect and conserve the natural environment during the provision of facilities and services that achieve its goals;
- take appropriate measures to comply with applicable environmental laws;
- integrate environmental considerations into the management of the Corporation;
- review environmental impacts before making or recommending decisions;
- ensure that all reasonable steps are taken to minimize potential environmental risk; mitigate and respond appropriately to related emergencies;
- educate its employees to understand and exercise their functions in accordance with CPC environmental policies;
- develop environmental performance indicators, and monitor them regularly to measure the success of the Corporation in attaining sustainable development;
- monitor and record the quality of its environment and ensure its policies and control mechanisms are re-evaluated regularly and amended as appropriate to ensure that they remain relevant to the technology of the day, the principles of the Canada Ports Corporation Act and sustainable development and recognize local community concerns.

In addition to the reports of the Technical Operations Committee of the Board, environmental progress reports will be submitted to the CPC Board of Directors annually.

remedial measures; the second tier focusses on integrating environmental considerations into decision making at all levels of society, from individuals to large businesses and governments.

The overall goal is "to secure for current and future generations a safe and healthy environment, and a sound and prosperous economy." To meet that challenge, the *Green Plan* presents seven broad goals and reaffirms or establishes 24 more specific targets, including health (Box 33). The specific actions needed to meet these targets cut across the mandates of a broad range of departments and agencies. Approximately 80 separate policy and program initiatives have been launched by more than a dozen federal departments.

The *Green Plan* highlights action in six areas: cleaning air, water and land; sustaining renewable resources; protecting special spaces and species; preserving the integrity of the North; working toward global environmental security; and minimizing the impact of both natural and other environmental emergencies.

It also diagnoses poor decision making at all levels of society as the underlying cause of environmental problems. Environmental considerations must be incorporated into decision making in a more systematic, coherent and focussed manner than in the past if the goal of sustainable development is to be achieved. The *Green Plan* addresses seven key areas of decision making: science, environmental information, environmental education, legislation and regulation, economic instruments, decision-making processes and institutions, and partnerships.

Creating Opportunity

The federal government's agenda is based on an integrated approach to economic, social, environmental and foreign policy outlined in *Creating Opportunity*, designed to promote sustainable development as an integral component of decision making at all levels of society.

Creating Opportunity recognizes that the environment can no longer be separated from the national economic agenda. It embraces a vision of sustainable development in which sound environmental

BOX 31

Environmental cooperation in Ottawa

The National Capital Commission (NCC) and the Regional Municipality of Ottawa-Carleton (RMOC) have completed a draft Framework for the Harmonization of NCC/RMOC Capital Works Projects in Ottawa-Carleton, designed to avoid duplication while satisfying both federal and provincial environmental legislation.

In 1990, the NCC approved a Code of Environmental Stewardship. A Corporate Environmental Stewardship Section was created in 1992. Annual action plans and environmental reports are prepared. They include activities relating to the reduction of solid waste, energy and water consumption, the identification and assessment of contaminated sites and underground storage tanks, the elimination of PCBs and hazardous materials, the protection and management of NCC lands, and environmental training and awareness of staff. The NCC also undertakes environmental assessments in all its plans and activities, including joint assessments where appropriate, and ensures that assessments are integrated into the plans and projects on federal lands in Canada's capital.

BOX 32

Department of National Defence

The Department of National Defence (DND) adopted a policy statement on the environment in 1992 in which the department and the Canadian Forces undertook to demonstrate responsiveness to and responsibility for protecting the environment as they carry out their activities; and to adopt a sound environmental ethic, ensuring that they are responsible partners in the government's overall program. The policy directive includes a commitment to the federal government's Code of Environmental Stewardship.

In addition to a variety of measures undertaken to protect the environment and conserve resources, DND has carried out baseline studies (environmental audits) for each base, and conducts environmental assessments before any project is approved. A Defence Environmental Advisory Committee was established in 1992 with representatives from industry and academia to advise the department and Canadian Forces on the impact of their activities and operations on the environment. The Committee released its first annual report to the Minister, entitled Defence and the Environment, in March 1994.

management attains high levels of environmental quality and creates sustained prosperity and jobs.

Barriers and disincentives to sound environmental practices

The federal government's February 1994 budget announced the establishment of a multistakeholder task force to find effective ways in which to use economic instruments to protect the environment and to identify barriers and disincentives to sound environmental practices. The Task Force's fundamental goal was to promote the convergence of economic and environmental agendas and thereby advance sustainable development.

Action Plan on Health and Environment

The physical environment is one of the determinants of human health, along with behaviour, genetic endowment, socio-economic factors and the health care system. The health of the human community is linked to the health of the physical environment: pollution prevention and resource management choices affect the sustainability of both. The *Green Plan* includes a separate strategic program, the Action Plan on Health and Environment (APHE), designed to improve our understanding of this vital link. APHE focusses on four areas of activity – regulation and monitoring (air, water, soil and food); protecting groups at risk due to age-related sensitivities (infants and children) or traditional food sources (Aboriginal communities); facilitating individual and community action by providing scientific information to the public and enhancing opportunities to act together to improve the health of local environments; and contributing to international initiatives, including international conferences and work on transboundary pollution. As government policy shifts toward a sharper focus on sustainability, initiatives to strengthen our understanding of the human health-ecosystem health interface will be proposed.

The Task Force, which met for the first time in July 1994, released its final report at the end of November 1994. The recommendations included shorter-term initiatives that could be incorporated into the 1995 budget and suggestions for reform in the longer term, but few of them were reflected in the 1995 budget.

Office of the Auditor General

The Office of the Auditor General ensures that, in carrying out its responsibilities, it makes a positive contribution to the protection and improvement of the national and global environment. It determines whether departments, agencies and Crown corporations are

- complying with environmental authorities;
- efficiently and effectively carrying out their regulatory, enforcement and monitoring roles with respect to environmental issues; and
- appropriately accounting to Parliament and the public for the environmental impact of their programs and activities.

Commissioner of the Environment and Sustainable Development

In March 1994, the federal government asked the Standing Committee on the Environment and Sustainable Development to examine ways in which the concept of an Environmental Auditor General might be instituted to ensure that the federal government – across all departments – adopts economic and environmental agendas that converge. The Committee released its report in May 1994, recommending that Parliament appoint a Commissioner of the Environment and Sustainable Development. In October 1994, the federal government agreed to create a Commissioner of the Environment and Sustainable Development (BOX 74, Chapter 5), and it has since tabled legislation to that effect.

Canadian Environmental Assessment Act

In June 1990, the Minister of the Environment announced a package of reforms to the federal Environmental Assessment and Review Process that included new environmental assessment legislation, an environmental

assessment process for new policy and program proposals, and a participant funding program that would support public participation in the environmental assessment process.

These reforms are intended to ensure that environmental considerations are integrated into federal government planning and decision making to support sustainable development. The application of these processes takes into account the potential adverse environmental effects of development projects, programs and policies in the early stages of planning so that the identified environmental effects can be minimized.

In June 1992, after nation-wide consultations and detailed parliamentary review, Bill C-13, the *Canadian Environmental Assessment Act*, received Royal Assent.

The legislation came into force in October 1994 and will apply to projects for which the federal government holds a decision-making authority – whether as a proponent, land manager, financial contributor or regulator. Following the development and publication of the four key regulations for the implementation of the Act, further regulations are to be developed, including those for projects outside Canada, Crown corporations and Aboriginal lands.

Canadian Environmental Protection Act

The *Canadian Environmental Protection Act* (CEPA) was proclaimed in 1988 as a cornerstone of federal environmental protection legislation. In addition to providing a life-cycle approach to the management of toxic substances, it is designed to consolidate disparate elements and authorities that were contained in five acts administered by Environment Canada, to ensure greater consistency in enforcement.

The Act is also designed to increase previously low penalties for environmental offences; provide for intergovernmental agreements; stipulate federal-provincial and public consultation on specific environmental matters; allow citizens greater access to the law; improve the federal government's own environmental performance and standards on federal lands, including Aboriginal reserves; and enable Canada to fulfil specific international obligations regarding environmental protection.

The Act requires a review of its administration by a committee of Parliament within five years of its enactment and a report to Parliament of any suggested changes to the Act or its administration. The committee began its review in June 1994.

Between 1941 and 1991, the number of farms in Canada declined from 733,000 to 280,000.

Box 34

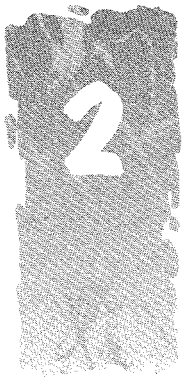
Environmental emergencies

The 1980s and 1990s have seen significant changes to the organization of governments in the environmental emergencies field. The roles and responsibilities of the two levels of government have been more clearly defined: at the federal level, new legislation has clarified the divisions of responsibility between departments to prepare for and respond to environmental emergencies of any type.

The newly formed Federal Committee for Environmental Emergencies is the coordinating body that helps departments meet their responsibilities for environmental emergency responses. Its mandate is to address inter-departmental policy setting, international program involvement, public information, integration of interagency arrangements, the speedy mobilization of government-wide assets and the resolution of governmental problems related to environmental emergencies – specifically, oil and hazardous substance spills and the environmental consequences of natural disasters.

Harmonization

Harmonization of environmental programs in Canada means clarifying federal-provincial roles to eliminate duplication and overlap among programs, and making legislation and regulations more consistent across the country by working with the provinces and territories on various activities such as environmental emergency programs (Box 34). For more details, see the description below of the activities of the Canadian Council of Ministers of the Environment.



Pollution prevention

The National Office of Pollution Prevention, housed in Environment Canada, is engaged in a number of initiatives supporting sustainable development, one of which is drafting a Pollution Prevention Strategy. In the process of making pollution prevention a national goal, consultation on the strategy with interested stakeholders began in September 1994.

Another initiative is Accelerated Reduction/Elimination of Toxics (ARET), which is a consensus-driven approach to voluntarily reducing or eliminating emissions of 100 toxic substances. To date, more than 130 companies have agreed to develop and implement ARET action plans. Environment Canada has also helped the Canadian Manufacturers Association (CMA) to develop the Manufacturers Environmental Performance Program to improve the environmental performance of small- and medium-sized enterprises. The Association is now implementing the program among its more than 2,000 member companies.

Green industries and technologies

A high quality environment and a strong, internationally competitive environmental industry are priorities for action by the federal government. This will require, across all sectors of the economy, production technologies, products and services that are less harmful to our ecosystem. The Canadian environmental industry employs roughly 150,000 people and generates over $11 billion per year. It is among the fastest-growing sectors in the Canadian economy and offers very promising export potential while directly addressing environmental problems at home and abroad.

In September 1994, the Ministers of Industry and Environment announced a strategy for the Canadian environmental industry. It demonstrates the federal government's commitment to promote environmental technologies, products and services as a major component of Canada's strategy for economic growth. The core strategy plans on a total of $57.5 million of new and redirected funds in order to meet three main objectives: improve industry's access to government programs and services; support technology development and commercialization; and increase dominance in domestic and international environmental markets. Partnerships between industry and government will be the foundation of this new national strategy to promote economic growth, job creation and a clean environment.

Building a federal science and technology strategy

A federal Science and Technology Review is now under way to determine how federal investment in science and technology can best be applied to support the needs of Canadian society. The government believes that innovation based on a sound foundation of science and technology will create jobs and permit the integration of economic and environmental goals to enhance the quality of life for all Canadians.

The purpose of the review is to determine the most effective way for the federal government to invest in science and technology to achieve three important goals:

- the creation of wealth and jobs within the context of sustainable development;
- the enhancement of the quality of life; and
- the advancement of knowledge.

Government decisions to set priorities for investment in science and technology simultaneously affect all three areas described above. Some important questions arise from

this observation. For example, what should be the components and characteristics of Canada's national system of innovation? Has the federal government done enough to direct the innovation system toward long-term national and regional needs? Are environmental and human resource considerations receiving adequate attention? How do we address Canadian linkages to international science and technology?

To answer these questions, the government sought the ideas and suggestions of Canadian individuals and organizations. They had opportunities in fall 1994 to participate directly in the dialogue through Internet discussion groups or in person through a series of local, regional and national workshops and conferences organized in collaboration with local hosts and a consortium of private-sector organizations. A report has been prepared describing the input received from the public, and work continues on the development of a strategy.

Protected areas

The Brundtland Report, the *Green Plan*, a Canadian Environmental Advisory Council report and the Tri-Council Statement of Commitment to Complete Canada's Networks of Protected Areas all call for a two-pronged approach to sustainable development: the establishment of protected areas such as parks, wildlife areas and ecological reserves, and the sound stewardship of the whole land.

Canada is committed to the completion of the National Parks System by the year 2000, as first set out in the *Green Plan*. It calls for the establishment of five new national parks by 1996 and the negotiation of agreements for the remaining 13 national parks required to complete the terrestrial system by the end of the millennium. As well, the *Green Plan* establishes a goal of three new national marine conservation areas by 1996 and the negotiation of agreements for three more by the year 2000.

Since 1990, considerable progress has been made toward these goals. Parks Canada is increasingly confident that the interim goal of at least five parks by 1996 can be met. Agreements have been signed for national parks in Aklavik in the western Northwest Territories and Vuntut in the Yukon, and a land withdrawal for north Baffin Island. Negotiations are well-advanced on two proposals, Churchill and Tuktut Nogait (Bluenose) and agreements will likely be signed in the near future.

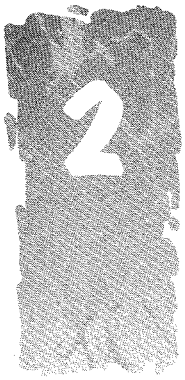
Significant progress has also been made on the marine conservation side by the establishment of marine conservation areas in the Gwaii Haanas Archipelago in British Columbia, the West Isles in New Brunswick and the Saguenay estuary area in Quebec.

However, much work remains to be done to complete the system. The diverse landscapes of 60% of Canada's 39 natural regions are represented through national parks, and work is under way to represent the remaining 40%. Completing the national parks system is a priority environmental and heritage issue requiring innovative financing and provincial and community support.

The Government of Canada is also committed to creating a more representative system of national historic sites with the cooperation and involvement of others, commemorating historical heritage of importance to all Canadians.

Parks Canada also encourages all stewards of cultural resources to apply cultural resource management principles and practices to their efforts. Heritage places are thus managed in a manner that sustains them and respects their intrinsic values,

Swedish environmental officials have estimated the country's environmental "deficit" at $30 billion... the question is not whether to pay for such damage, but who is going to pay, when and how?



thereby contributing to broader sustainable development and conservation strategies.

Under the United Nations Educational, Scientific and Cultural Organization (UNESCO) Man and the Biosphere Program, Biosphere Reserves are intended to be living examples of sustainable development. There are over 300 Biosphere Reserves around the world (six in Canada), each with a core protected area, as well as a surrounding buffer zone and a zone of cooperation. This program could be one of the best ways to implement sustainable development on a regional basis and as part of an international network.

The 1992 United Nations Convention on Biological Diversity, of which Canada is a signatory, will be an important instrument in ensuring protection of spaces and species. Details about the Convention and Canada's National Biodiversity Strategy appear later in this chapter.

Sustainable development and cultural heritage

Protected heritage areas can demonstrate the interdependence of humans and the environment, and provide enhanced educational and interpretive opportunities. They contribute to broader sustainable development and conservation strategies by maintaining the ecological integrity and biodiversity of natural areas; preserving the commemorative integrity of historic places; and promoting a conservation ethic, citizenship values based on respect for the environment and heritage, ecosystem and cultural resource management.

Because certain economic activities endanger parts of our material heritage and increase the costs to society of conserving it, the cultural heritage community is a natural stakeholder in discussions of sustainable economic development. The federal Department of Canadian Heritage combines responsibilities for Canadian identity, culture and heritage as well as areas of national and historical significance. It is studying the contribution of heritage to economic development and will be investigating potential roles for the cultural heritage community.

Parks Canada is one of Canada's principal organizations for cultural resource management. It is responsible for a vast array of cultural resources in public settings at national parks (including national marine conservation areas), national historic sites and canals, as well as in collections and at other properties that it administers. In carrying out its commitment to responsible stewardship, Parks Canada must determine how best to promote visitation and public understanding of cultural resources without diminishing the qualities and attributes that give those resources their value.

This challenge requires a holistic policy framework that deals with cultural resources as symbolic as well as physical entities, and is motivated by a sense of responsibility to pass on our legacy. In 1990, the Cultural Resource Management Policy was developed to provide a value- and knowledge-based framework for decision making.

As mentioned earlier, Parks Canada also promotes sound principles of stewardship and citizen awareness, and ecological and commemorative integrity of protected heritage areas. These principles are recognized in the revised Parks Canada document, *Guiding Principles and Operational Policies*, tabled in the House of Commons in March 1994. Prepared after three years of consultation with interest groups, provincial and territorial governments, and the public, these policies provide a framework for decisions that will have to be made in the face of ever-increasing environmental, social and economic pressures. In addition, they detail the federal government's vision for managing national heritage programs.

Canadians spend only 10% of their disposable income on food, the second lowest percentage spent on food of any nation.

NATURAL RESOURCES: Sustaining a way of life

Recent economic policies have led to an "over-harvest and closure" approach to renewable resources. According to *Creating Opportunity*, the new approach will be to "foster increased employment without over-exploitation of resources." It also states that "the long-term livelihood of rural inhabitants and Aboriginal peoples is best ensured by responsible stewardship of the renewable resources that feed the fishing, farming, and forestry industries." The following sections outline sustainable development strategies and policies for agriculture, forestry, fisheries, water, mining and minerals, and energy.

Aboriginal concerns

Comprehensive claims

All claims agreements under negotiation are being structured to ensure that the consumptive use of fish and wildlife is subject to the needs of conservation. Comprehensive claims under negotiation seek to combine the traditional ecological knowledge of Aboriginal people with the science-based expertise of government regarding wildlife, fisheries, water and forestry.

Agricultural runoff is the largest source of non-point source pollution affecting the coastal waters of the Atlantic Region.

– *State of the Environment in the Atlantic Region*, 1994

These co-management structures will help ensure that use of natural resources will achieve the goal of conservation. At the same time, management plans address the subsistence and economic needs of the Aboriginal groups concerned within the limits that these activities can be supported by the resource bases available.

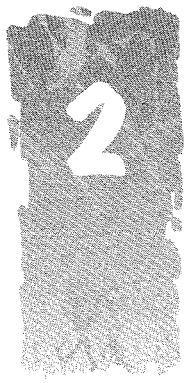
Comprehensive claim agreements also contain environmental impact assessment requirements that must be addressed before approval is given to development projects.

Reserve lands and resources

Under the *Indian Act*, the Lands and Environment sector grants interests in reserve lands and resources to third parties through leases, licences and permits. In issuing these, the Department of Indian Affairs and Northern Development (DIAND) carries out an environmental assessment of proposals. The department takes into account sustainable development considerations such as the long-term effect of the proposal on land and resources. It then requires the proponent to carry out environmental mitigation measures as conditions of the lease, licence or permit. DIAND leases, licences and permits also include other clauses to address specific environmental concerns.

DIAND is working with First Nations and other federal departments to find effective mechanisms to fill the gaps in the legislative and regulatory regime related to the environment and sustainable development of reserve lands and resources.

First Nations may increase their decision-making powers regarding lands and resources through mechanisms such as the devolution of authority under the *Indian Act*, negotiated self-government agreements, legislated alternatives to the land and forestry provisions of the *Indian Act*, treaty-land entitlement and land claims. In support of these initiatives, DIAND is seeking to enhance Aboriginal peoples' capacity to manage development projects on a sustainable basis through mechanisms such as "how to" guides, training courses and workshops.



Agriculture and agri-food

The federal government recognizes the importance of the agriculture and agri-food sector and its need to be sustainable for the long-term benefit of Canadians: it accounts for 8% of Gross Domestic Product and provides 1.8 million jobs. Exports of agricultural and agri-food products add $13 billion to the economy and contribute $2.9 billion to Canada's trade balance.

Today the sector is confronted by intense competition in domestic and international markets, new trade agreements and trade disputes, evolving consumer trends, natural resource base fragility and public environmental concerns. These present significant challenges, but also provide expanding opportunities for development and growth. Sustainability is a priority for farmers, processors, input suppliers, retailers and others, including consumers who expect a safe, nutritious and affordable food supply.

Environmental assessment of farming policies and programs

Potential environmental impacts are now taken into account when developing new and reviewing existing policies and programs. Under the Farm Income Protection Act, which is the enabling legislation for the safety net programs, periodic assessments are mandated to ensure that there are no adverse environmental impacts. Assessments have been completed for the Gross Revenue Insurance Plan, the Net Income Stabilization Account and the Crop Insurance Program.

Growing Together

Some of the links between the economic, social and environmental facets of sustainable agriculture have been obvious. In the 1930s, low grain prices, severe wind erosion and crop failures on the Prairies dramatized the fragility of its agricultural resource base and commodity-dependent economy.

Since the early 1980s, these links have been increasingly reflected in government policies and initiatives. High interest rates, escalating grain trade wars and rising input costs resulted in a farm income and debt crisis. The National Agriculture Strategy developed in 1986 with the provinces focussed on farm financial and marketing issues, but also addressed soil and water degradation and farm family dislocation. Many of the issues were considered independently, but some were linked, such as the impact of farm programs on soil and water.

The discussion paper, *Growing Together*, which initiated the comprehensive Agri-Food Policy Review in 1989, provided a framework to promote change to attain economic, social and environmental aspirations. It envisaged an agriculture and agri-food sector increasingly self-reliant, market responsive, built on regional strengths and environmentally sustainable. This vision was endorsed by the federal and provincial governments and sector stakeholders.

Committees were established to examine various issues, including competitiveness, marketing and trade development, value-added, food safety and quality, farm income safety nets, research and development, grains and oil seeds transportation, farm business management, supply management, and sustainable agriculture.

The importance of integrating economic, social and environmental facets in a holistic approach to policy reform was discussed by the Federal-Provincial Agriculture Committee on Environmental Sustainability in its June 1990 report. It observed that sustainability is a concept that integrates not only natural resource based concerns, but also other related economic and social issues. The committee noted "sustainable (agriculture and) agri-food systems are those that are economically viable, and meet society's

need for safe and nutritious food, while conserving or enhancing Canada's natural resources and the quality of the environment for future generations."

Measures were taken to integrate the economic, environmental and social factors of the issues being covered by the review committees. The reports of the respective committees provided comprehensive frameworks for developing policies and initiatives aimed at prosperity and sustainability for the sector (Box 35).

Some of the initiatives which followed were a farm income safety net system; commencement of *Western Grain Transportation Act* reform; a national strategy on research and technology transfer; a national farm business management program; an improved regulatory system for pesticides; enhanced farm adjustment measures; and national and regional projects under the *Green Plan*. These initiatives demonstrated the commitment to the principle of sustainability voiced in the November 1992 response to the Report of the Standing Committee on Agriculture: *The Path to Sustainable Agriculture*. Subsidies under the *Western Grain Transportation Act* were eliminated in the 1995 federal budget.

Future directions

Government policy continues to evolve in response to changing needs. The September 1994 paper, *Future Directions for Canadian Agriculture and Agri-Food*, identifies five goals: achieving sustainable growth, fostering rural opportunities, realizing long-term financial security, attaining resource and environmental sustainability, and maintaining a safe, high quality food supply.

Current initiatives include steps to remove interprovincial trade barriers, form a National Agriculture Environment Committee (Box 36), examine supply management reform, and establish a rural renewal secretariat. Other initiatives are under way to develop a whole-farm income safety net system, improve farmer health and safety, revise the food inspection system, increase participation of women, maximize benefits from information technology and identify long-term future markets.

These initiatives will help reform government policies and programs to move Canada's agriculture and agri-food sector toward the 21st century.

Forests

The following are only a few of the major undertakings of the Canadian Forest Service, Natural Resources Canada, in partnership with other governments, industry and NGOs. The *Department of Forestry Act* explicitly requires the Minister to promote sustainable development of Canada's forests, and most activities of the Canadian Forest Service reflect this responsibility.

Government owns and controls 94% of the forest land in Canada and regulates the harvesting by industry.

Box 36

National Agriculture Environment Committee

Agriculture and Agri-Food Canada has formed a new National Agriculture Environment Committee comprising 14 leaders from the agricultural producers sector. The Committee will play a leadership role on environmental sustainability issues, including establishing proactive strategies for farmers at a national level and charting courses of action at arm's length from government.

The Secretariat to the Committee is housed in the Canadian Federation of Agriculture. Agriculture and Agri-Food Canada together with Environment Canada will be working with the Committee on the development of a sector-led national strategy for environmentally sustainable agriculture.

National Forest Strategy

In 1991, members of the Canadian public were invited to express their views in a series of open forums to suggest new directions for managing Canada's forests,

taking into account changing attitudes and values. One year later, the National Forest Strategy was published. It clearly stated the collective desire of the Canadian forestry community and the Canadian public to ensure the future health, vitality and productivity of our forests. The Strategy outlines priorities for a five-year period.

The document contains nearly 100 action items designed to help Canada move to the forefront of sustainable forestry by 1997. It is the principal mechanism for tracking the domestic implementation of commitments made at the Earth Summit. Progress is reviewed annually and a mid-term evaluation by an independent panel has been completed. A second evaluation will be conducted at the end of the Strategy's term.

In addition, national scientifically based criteria and indicators are being developed in keeping with the commitment to manage forests as ecosystems. To this end, a steering committee supported by a science panel and technical committee was established in March 1994. The subcommittee has already reached agreement on 17 criteria, for which it has developed definitions, listed critical elements, rationalized choices, identified linkages with other initiatives and proposed a list of indicators. Over the summer months, the same process was followed for refining the indicators. A progress report was submitted to the Canadian Council of Forest Ministers and a proposal for an intergovernmental panel was accepted by the United Nations Commission on Sustainable Development in April 1995.

Model Forest Program

The Model Forest Program is the central element of the *Green Plan*'s $100 million "Partners in Sustainable Development of Forests." Each model forest will receive about $5 million over five years from the federal government.

Nine of the ten model forest networks, spread over five major forest ecoregions of Canada, are in full operation. They reflect a variety of cultural and ecological values, such as wildlife, biodiversity, watersheds, recreation and fisheries, as well as the traditional economic value of wood supply.

The objectives of the model forest network are to

- accelerate the implementation of sustainable development in the practice of forestry, in particular, the concept of integrated resource management;
- develop and apply innovative new concepts and techniques in the management of forests; and
- test and demonstrate the best sustainable forestry practices available.

Notwithstanding their importance from a scientific research perspective, the model forests are breaking new ground as far as decision-making processes are concerned. One of the most innovative approaches in this regard is the extensive involvement of local communities in the way forests are managed.

Tree Plan Canada

Tree Plan Canada is a six-year program partially funded by the federal government and managed by the National Community Tree Foundation, an NGO established specifically for this purpose. The program aims to encourage the planting of up to 325 million trees, providing an opportunity for Canadians to learn about proper planting, care and the importance of trees to the planet's life-support system.

Many other projects are under way under the auspices of the *Green Plan* to develop

In 1992, the average Canadian household spent 0.4% of its total current consumption on water...and 0.8% on paper, plastic and foil household supplies.

specific strategies and technologies to manage the forest resource better. Emphasis is placed on influencing a transition in forestry practices from managing for sustained yield to managing for the full range of social, economic and environmental values.

Fisheries

Sustainable Fisheries Framework

The Department of Fisheries and Oceans has undertaken a number of new initiatives that form the Sustainable Fisheries Framework. These initiatives include the creation of the Fisheries Resource Conservation Council, which is a partnership of federal and provincial governments, the scientific community and industry. The mandate of the Council is "conservation." In addition, a model fisheries program has been introduced for the Skeena River in British Columbia; departmental researchers are studying the effects of specific fishing technologies on fish habitat; and, on the international front, the department is working with the Food and Agriculture Organization of the United Nations to develop a code of conduct for responsible fishing.

Atlantic Groundfish Strategy

The Atlantic Groundfish Strategy (TAGS) is a comprehensive initiative designed to help those affected by the collapse of Atlantic groundfish stocks. It establishes compassionate transitional programs and ultimately should lead to an economically and environmentally sustainable Atlantic groundfish fishery.

TAGS charts new territory and requires the active involvement of people affected by declining groundfish stocks and interested in finding a solution. It plants the seeds for longer-term job creation, new opportunities and broad economic growth. Key elements of the Strategy are

- active income support;
- community-based focus;
- targeting those willing to prepare for opportunities outside the Atlantic groundfish fishery;
- training and other provisions for those who qualify to remain in the streamlined, sustainable fishery of the future; and
- a consultative framework involving partners at all levels of government and industry.

A renewed fishing industry must be sustainable both ecologically and commercially. Harvesting and processing capacity should be balanced within the sustainable limits of the rebuilt resources.

– Task Force on Incomes and Adjustment in the Atlantic Fishery

The Green Projects is a five-year initiative under TAGS that will enable displaced fisheries and plant workers to benefit from the economic opportunities arising from improved environmental practices and the increasing demand for environmental services and technologies.

The Projects combine the objective of longer-term employment with that of ecological revitalization by encouraging the development of community leadership and advocating long-term strategies and projects linked to sustainable objectives. To that end, local and provincial multi-partner project advisory committees will be set up in the Atlantic provinces and Quebec. Local project generation will help ensure a community-based impetus.

Water

Water resources programs cost-shared under the enabling provisions of the *Canada Water Act* (1970) have contributed to the concept of sustainability planning for many

years. In the late 1980s, a more integrated approach to ensuring that Canada's water resources continue to provide social, economic and environmental benefits to future generations was gradually elaborated. This was confirmed and expedited by a broad national consultation (Inquiry on Federal Water Policy) that led to the adoption of a Federal Water Policy in 1987.

Among other things, the Policy promotes innovative approaches in the use of economic instruments and new federal-provincial programs to deal with "water and the economy" as a joint issue. For example, a five-year arrangement was signed in 1987 with Prince Edward Island to study critical sources of concern, including threats to the island's groundwater and coastal estuaries.

The idea of "water and the economy" agreements was later expanded to New Brunswick, Nova Scotia and Newfoundland, and similar agreements are planned with other provinces. In addition, projects such as the Canada-Alberta-N.W.T. study of the cumulative effects of industrial activity and development on the ecology of the Peace, Athabasca and Slave River basins are contributing to the scientific knowledge base necessary to make environmentally sound planning decisions, with the active involvement of NGOs and Aboriginal peoples.

Our vision is of a socially, economically and environmentally sustainable and prosperous mining industry, underpinned by political and community consensus.

– Leadership Council Accord, Whitehorse Mining Initiative, 1994

Minerals and metals

The minerals and metals industry provides many of the essential raw materials used by society. But like all human activity, it can have an environmental effect. Although minerals and metals are non-renewable resources, the goals and principles (e.g., energy efficiency) of sustainable development are increasingly applied in the industry.

For many years, the minerals industry has contributed positively to sustainable development by producing base and precious metals that can be recycled and will be available for generations to come. Metal recycling offers various environmental and economic benefits, including reduced volumes of material that end up in landfill sites. Because recycled metal is indistinguishable from virgin material, metals can be considered a "renewable" resource. Several Canadian steel mills and nonferrous smelters and refineries operated by Canadian mining companies rely on sources of scrap for their raw material.

The minerals and metals industry has supported the creation of the International Council on Metals and the Environment. In addition, the Mining Association of Canada was the world's first national mining body to approve a binding environmental policy in 1989.

Whitehorse Mining Initiative

The Whitehorse Mining Initiative (WMI) was an industry-inspired, multistakeholder initiative. The federal government was an active participant in the WMI and one of its financial sponsors. The Initiative's goal was to address the issues currently impairing the social, economic and environmental sustainability and prosperity of the Canadian minerals and metals industry. WMI examined four issues: land access, workplace and workforce, taxation and finance, and environment. Aboriginal issues were also addressed under these issues.

The WMI brought together for the first time all legitimate stakeholders in the mining process in Canada. It allowed divergent groups to listen to and learn from each other. Meetings took place across Canada, and the Initiative culminated in September 1994 with the signing of the WMI Leadership Council Accord at the Mines Ministers' Conference in Victoria, British Columbia.

Natural Resources Canada has been developing a federal perspective on sustainable development in the context of minerals and metals. A discussion paper was circulated in 1993 to interested federal departments and agencies, and provincial and territorial ministries of mines. The paper is currently being modified to reflect the outcome of the Whitehorse Mining Initiative (Box 37).

The paper covers a number of issues relevant to the minerals and metals industry, including land-use planning and integrated management, security of supply, international competitiveness and trade, environmental protection, and science and technology.

Energy

Promoting energy efficiency

The extent and nature of energy use are major factors affecting both the environment and the economy. Total energy consumption in Canada tripled between 1958 and 1992, with non-renewable energy (mostly fossil fuels) accounting for 82% of the total energy consumed in 1992. Nuclear energy, introduced in the 1970s, had risen to 11% of the total by 1992. Alternative energy technologies (e.g., solar and wind power) make up less than one ten-thousandth of total energy consumption.

Climate change, acid rain and the deteriorating quality of urban air and water are just some of the environmental concerns associated with energy production and use. The demand for energy is the chief cause of anthropogenic greenhouse gas emissions in this country. Indeed, 98% of Canada's CO_2 emissions are energy related. The production and consumption of energy accounts for 87% of Canada's greenhouse gas emissions.

The Program of Energy Research and Development (PERD) supports a diversity of environmentally and economically sustainable energy development and end-use technologies that promote the competitiveness of industries in all regions of Canada (Box 38).

Efficiency and Alternative Energy Program

The Efficiency and Alternative Energy (EAE) Program administered by Natural Resources Canada (NRCan) takes a major step toward limiting greenhouse gas emissions. Focussing on measures that make economic sense in their own right, it comprises 33 initiatives directed toward greater energy efficiency and the use of alternative energy in all end-use sectors – equipment, buildings, industry, and transportation. They employ a variety of policy instruments (information, suasion, research and development, and regulation) and emphasize partnerships with various stakeholders.

In 1992, the average Canadian household spent 2.6% of its total current consumption on electricity...and 4.3% on tobacco products and alcoholic beverages.

Program of Energy Research and Development

The formal objective of PERD is "developing the science and technology for Canada to produce and utilize its energy resources in an environmentally responsible and cost-effective fashion."

In fulfilling this objective, PERD seeks to sustain a diversity of environmentally compatible energy development and end-use efficiency options; to balance regional interests and R&D needs; to support R&D for the short, medium and long terms; to encourage the greatest participation by the Canadian private sector and provincial governments; and to contribute to the technical base to enhance the competitiveness and productivity of Canadian industry.

The program helps the demand side of the energy market move toward more energy-efficient capital stock, production processes and operating practices without reducing the level of service or comfort that energy provides. On the supply side of the energy market, it ensures Canada's participation in the development of technologies for tapping alternative sources of energy.

NRCan's EAE Program also provides a foundation for longer-term processes

that can respond to evolving environmental and economic development priorities. The department has enhanced its regulatory authority, improved its data-gathering and analytical capabilities, and forged stronger information and planning frameworks with the provinces and other strategic allies.

NRCan's energy efficiency strategy aims to improve energy efficiency by upgrading the energy efficiency of new and existing buildings, equipment, systems and vehicles; ensuring that energy-consuming appliances and equipment are used in the most energy-efficient way; influencing the choices of individuals and organizations to purchase more energy-efficient equipment; and modifying the daily energy-use practices of individuals and organizations.

NRCan's alternative energy strategy includes promoting the use of alternative transportation fuels that have strong potential for market application (e.g., propane, natural gas, methanol and ethanol). Federal initiatives are helping to expand the infrastructure (e.g., availability at fuel stations) for these fuels and their markets, especially in urban regions with air quality problems that can be alleviated through greater use of alternative transportation fuels. Other NRCan activities involve providing reliable information to buyers on, and assessing economic and environmental factors of, renewable energy sources.

Research and development

Under the EAE Program, NRCan conducts research and development on energy-efficient technologies for residential and commercial buildings in Canada. NRCan also provides assistance to industry in developing products, processes, services and systems to reduce energy use.

Research and development is undertaken to improve options for the use of alternative fuels such as propane, natural gas, methanol and ethanol. Research is also under way in hydrogen, fuel cells and electric vehicles.

Renewable energy sources such as bioenergy, hydraulics, solar and wind technologies are generally recognized as important potential contributors to the reduction of global warming. NRCan's support for renewable energy is allocated largely to research and development to reduce costs, improve performance, develop safety and performance standards, and increase the scope for renewable energy technologies.

As part of its strategic plan, the Canada Mortgage and Housing Corporation (CMHC), is committed to working with urban, rural and northern communities in the public and private sectors to address demographic, economic and environmental restructuring and quality. It has been working with the building industry toward a systems approach to housing so that technical issues such as energy efficiency, ventilation, indoor air quality and durability are considered together as parts of the same system.

CMHC is committed to ensuring healthy housing for Canadians. It chairs the Task Force on Material Emissions Standards, which coordinates the development of test methods, data collection, labelling programs and standards for emissions from construction materials.

CMHC also works in partnership with the building industry to reduce residential water use and to reduce, reuse and recycle construction waste in new construction and renovation projects. The three Rs – reduce, reuse and recycle – have a major effect on the amount of energy used. The environmental costs of recovering, reusing

and recycling materials can be up to 100 times less expensive than the costs of producing new materials.

Public awareness

State of the Environment reporting

An excellent way for Canadians to learn about the environment is through Environment Canada's State of the Environment Reports. The goal of these publications is to provide objective, scientifically based information on environmental conditions and trends and to describe the significance of these trends from a holistic perspective. The primary theme is the link between human activities and environmental change and charting progress toward sustainability. All of the publications share a common approach, which is to address four key questions:

- What is happening in the environment? (data on conditions and trends)
- Why is it happening? (linkages to human activities and ecological processes)
- Why is it significant? (health, economic, ecological, or other implications)
- What are we doing about it? (how Canadians are responding)

Two comprehensive national reports were produced in 1986 and 1991. Work is currently under way on the third National Report, due in 1996. (Recent budget cuts threaten future work.)

National environmental indicators

Regularly monitored and reported environmental indicators can help Canadian decision makers track trends and measure progress toward sustainable development. Environment Canada's State of the Environment Directorate is leading the development of a national set of such indicators through a government-wide initiative under the *Green Plan*. A preliminary set was published in 1991. Since then, regular reporting has been initiated through Environmental Indicator Bulletins to ensure timely communication and accessibility.

The State of the Environment Directorate is also working on applying an ecosystem approach to its reporting (Box 39). Unfortunately, the capacity of the Directorate has been considerably reduced since the February 1995 budget.

Developing indicators takes a long time. Consultations with experts and potential users in the public and private sectors are ongoing as selected environmental issues are targeted for indicator development and improvement. Research is also under way to link biophysical, social and economic indicators in a sustainable development context.

Box 39

Ecosystem approach

Applying the ecosystem approach is fundamental to achieving sustainable development. It incorporates environmental values and interests with those from a social and economic perspective, thus taking into account the three pillars of sustainable development: environment, economy and society.

Following the recommendations that arose from the North American Workshop on Environmental Information hosted by Mexico in October 1993, the State of the Environment Directorate will be taking the lead on a working group to develop an ecological spatial framework for sustainable resource use and management.

Following are some of the activities and products to be developed in the near future: documentation of ecosystem approaches applied or tested in the United States, Mexico and Canada; application of common criteria for ecosystem classification and harmonization; development of a North American ecological map and description; and a state of the environment profile using a protected areas theme.

Statistics Canada integrates a wide variety of information that is vital for monitoring progress toward sustainability. As Canada's national statistical agency, it is responsible for compiling, analyzing and publishing

statistical information related to the commercial, industrial, financial, social and general condition of the people and conducting regular censuses of population, housing and agriculture. This includes surveying businesses, households and governments on matters of environmental concern; creating environmental and resource accounts as extensions of the existing System of National Accounts; and assembling social, economic and biophysical data to create an integrated body of environmental statistics.

Environmental Citizenship Initiative

Environment Canada established the Environmental Citizenship Initiative to foster individual and collective responsibility for the environment. Environmental citizenship is based on the idea that the actions of individuals and organizations are effective in reaching environmental goals.

Box 39

Greening the Hill

Launched in 1990, the Greening the Hill Program ensures that House of Commons practices are undertaken in the most environmentally sustainable manner. The Program uses a phased approach to eliminate environmentally harmful practices and materials, raise awareness on the Hill about ways to protect the environment, and eliminate hazardous substances wherever possible. An economic analysis was recently conducted to document the Program's financial savings and environmental accomplishments. It found that 78% of waste has been diverted from landfills and that the program can expect annual savings of $540,000.

The Initiative has four programs: the Environmental Partners Fund, Environmental Choice ™ Program, Eco-Action Program and the Federal Environmental Stewardship Program. These programs work with community-based organizations, corporations, individuals and government agencies and offer a variety of tools, including eco-labelling, "how to" information, technology demonstration, success stories, training and financial support.

The Environmental Choice™ Program is Environment Canada's eco-labelling program. Its goal is to reduce the stress on the environment by encouraging the demand for and supply of environmentally responsible products and services. The program certifies products and services that are less stressful to the environment and distinguishes them in the marketplace through the use of the EcoLogo™ symbol.

The federal government also supports the principle of sustainable development through the Code of Environmental Stewardship. It is committed to getting its own house in order by ensuring that environmental considerations are incorporated into all aspects of its operations and activities. The Office of Federal Environmental Stewardship facilitates the "greening of the government." Government departments that own land and facilities have prepared Environmental Action Plans and report their progress on these plans (Box 40).

Promoting sustainable development globally

Trade and environment

The federal government has followed up on a commitment in *Creating Opportunity* by establishing a Task Force on Trade and Environment under the International Trade Advisory Committee. The Task Force comprises representatives of the business, environmental and academic communities, and is mandated to make recommendations on improving the compatibility of trade and environment policies.

Canada is also working actively with its international partners to this same end through forums such as the new World Trade Organization, the Organization for Economic Cooperation and Development (OECD), the United Nations Conference on Trade and

More than 35,000 chemicals are reported to be in use in Canada today.

Development, the United Nations Environment Programme, and the United Nations Commission on Sustainable Development.

Official Development Assistance

The mission of the Canadian International Development Agency is to support sustainable development in developing countries. CIDA's *Policy for Environmental Sustainability*, released in January 1992, helped to position Canada at the Earth Summit in June 1992. It makes environmental issues a focal point for Canadian Official Development Assistance (ODA) and is an instrumental part of Canada's follow-up to Rio. It builds on CIDA's 1986 Environment Policy, which formally established the environment as a key consideration in ODA programming and established environmental assessment procedures.

The main thrusts of the *Policy for Environmental Sustainability* are to further integrate environmental considerations into ODA decision making and programming; to help developing countries improve their capacity to deal with environmental concerns; and to work with Canadian and international partners to meet the challenge of integrating environmental considerations into their activities. From 1986 to 1992, CIDA disbursed over $1.3 billion in direct environmental support and related programming, to which should be added over $200 million disbursed by the International Development Research Centre.

National sustainable development institutions

There are four key national institutions involved in the promotion of sustainable development in Canada: the National Round Table on the Environment and the Economy (NRTEE), the International Institute for Sustainable Development, the Canadian Council of Ministers of the Environment, and the International Development Research Centre (IDRC).

National Round Table on the Environment and the Economy

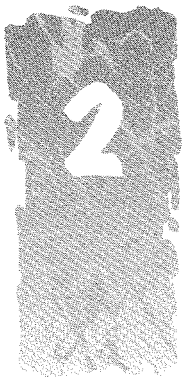
The mandate of the NRTEE is to "play the role of catalyst in identifying, explaining and promoting, in all sectors of Canadian society and in all regions of Canada, the principles and practices of sustainable development." The NRTEE is an independent agency composed of individuals from government, business, science, environmental groups, academia, labour unions and Aboriginal peoples that reports directly to the Prime Minister.

A sampling of initiatives and programs of the NRTEE includes:

Projet de société: Planning for a Sustainable Future – The NRTEE chairs the national multistakeholder assembly that is developing a National Sustainable Development Strategy for Canada in order to fulfil one of the commitments made at UNCED in 1992.

Sustainability Reporting – In 1993, the NRTEE provided advice to the Prime Minister on how to improve the government's capacity to report on progress toward sustainable development; it has also produced a background paper exploring the various options available when considering an environmental auditor general function in government.

Education – In partnership with ParticipACTION, the NRTEE has contributed to a social marketing program, SustainABILITY, that will aim to do for sustainable development what ParticipACTION has done for fitness. The NRTEE is also conducting educational outreach with the academic community, media and youth.



Trade and Sustainability – Since 1991, the NRTEE has been promoting sustainable development in Canada through international trade agreements and institutions. It provided advice on the North American Commission on the Environment (NACE), and more recently on the Environmental Cooperation and the Asia-Pacific Economic Cooperation Forum (APEC), General Agreement on Tariffs and Trades (GATT) and the World Trade Organization (WTO), the Miami Summit, and the 1995 Group of Seven (USA, Canada, Germany, France, Italy, UK and Japan) (G7) Summit.

Forest Round Table – The NRTEE brought together 25 forestry stakeholders representing a wide variety of interest groups, who eventually agreed to 26 principles for the sustainable development of Canada's forests, backed by action plans.

Pulp & Paper Round Table – Following the success of its dialogue on forestry, the NRTEE convened 25 stakeholders from the pulp and paper industry to work on principles to govern the sustainable production of paper and paper products in Canada. These principles have now been developed and stakeholders are outlining action plans in support of the principles

Consensus Decision Making – Round tables across the country have agreed on and published a set of ten basic principles guiding decision making by consensus. A companion volume of case studies, as well as a speaker's kit, will be published in 1995.

Rural Renewal – The NRTEE is working with several partner agencies to explore ways to renew rural life through sustainable development.

Partnerships for Sustainable Coastal Communities and Marine Ecosystems – In a joint initiative with the Newfoundland and Labrador Round Table on the Environment and the Economy, the NRTEE has been engaging people from fishery-dependent coastal communities in a discussion about how the fisheries used to be sustainable and what has made them unsustainable, in an effort to help them rebuild their communities and to develop recommendations on how to avoid similar fisheries collapses in other regions of Canada.

Transportation and Climate Change – The NRTEE is working with the Ontario Round Table to organize a multistakeholder collaborative in Ontario around the issue of transportation and climate change.

Federal Green Procurement – The NRTEE has established a task force to help to promote green procurement in the federal government.

Environmental Technologies – A task force has been established to work with a number of selected sectors within Canadian industry to move toward sustainability, catalyzing the development and use of the necessary environmental technologies. A complementary objective is to strengthen the competitive position of the Canadian environmental industry.

International Institute for Sustainable Development

The IISD is a non-profit organization established in 1991 and supported by the governments of Canada and Manitoba. Its mandate is to promote sustainable development in decision making in government, business and the daily lives of individuals in Canada and internationally. Its current program areas include communications and partnerships, business and government, trade and investment, and poverty and empowerment.

In the area of communications, IISD's intent is to empower people by delivering

accurate, timely information on international negotiations, to expand understanding by distributing sustainable information bases and to link groups that share common objectives.

IISD's work on business and government issues has focussed on corporate environmental reporting and accountability, employment and sustainable development and green budgets. Through EarthEnterprise, IISD has encouraged entrepreneurship around environmentally responsible products and services.

The Winnipeg Principles for Trade and Sustainable Development released in early 1994 are designed to encourage trade policies and practices to serve sustainable development needs. These guidelines were prepared by IISD's working group on trade and sustainable development.

All of these efforts will have an impact on the issues of poverty and empowerment. IISD views poverty alleviation as a cross-cutting theme in its work, which has focussed on enhancing the knowledge and capacity of people to deal with difficult economic and ecological issues.

Canadian Council of Ministers of the Environment

The CCME is the major intergovernmental forum in Canada for discussion and joint action on environmental issues of national, international and global concern. Environment ministers from the provincial, territorial and federal governments participate in council meetings at least twice a year. They discuss environmental issues, exchange information, make decisions and establish policy for work to be carried out under the auspices of CCME. In 1992, the Deputy Ministers agreed that the Council should show leadership in promoting the concept of sustainable development.

CCME's current focus is on harmonization. It is engaged in developing a new environmental management framework for Canada to help rationalize management responsibilities and structures between the federal, provincial and territorial levels of government (Box 41). In addition, several task groups are looking at economic integration, water-use efficiency, internal trade and packaging. CCME recently developed a set of consultation and partnership guidelines for the organization.

There are also other ministerial councils in Canada, a few of which have already been mentioned. Many of them have contributed to sustainable development. The Council of Energy Ministers has worked collaboratively with the CCME on air issues; and the Councils of Wildlife Ministers, Forest Ministers and Environment Ministers have all met to discuss biodiversity.

Between 1969 and 1992, household expenditures on water, fuel and electricity fluctuated between 3.1% and 3.5%.

Box 41

CCME harmonization initiative

A task group was formed by the CCME in fall 1993 to resolve a number of problems, including the lack of clarity between the roles of the federal and provincial governments in environmental protection; duplication and overlap between the environmental protection activities of the two orders of government; and lack of harmonization in environmental legislation and regulation across the country.

The aim is to develop a new environmental management framework by May 1995 that would designate which level of government should appropriately handle each area of environmental protection work, such as science and technology, industry regulation or international issues. In addition, action will be taken on five priority issues: the Canadian Environmental Protection Act review and agreements, international environmental issues, trade policy, pulp and paper effluent regulations and environmental impact assessment.

International Development Research Centre

Through support for research, IDRC helps developing countries create their own long-term solutions to pressing development problems. Support is given directly

to Third World institutions whose research focusses primarily on meeting the basic needs of the population and overcoming the problems of poverty. Links are made between those institutions and Canadian partners. At the Earth Summit, the Prime Minister announced that the mandate of IDRC would be formally expanded to include an emphasis on Agenda 21 and sustainable development issues.

Much of IDRC's work tends to contribute to capacity building (one of the highest priorities of Agenda 21), helping developing countries and local communities gather the knowledge, the people and the organizations that will enhance local decisions and policies.

Specific program areas of the IDRC around sustainable and equitable development currently include environment and natural resources (urban environment management, water resource management, etc.); health sciences, social sciences (regional integration, macro-economic policy, etc.); information sciences (information capacity building, software development, etc.); and corporate programs (public information, evaluation and human resources development, etc.).

IDRC's six core themes are integrating environmental, social and economic policies; information and communication for environment and development; biodiversity; health and environment; technology and the environment; and food systems under stress. IDRC has also initiated the establishment of important networks: the Third World Network (of NGOs); Bellanet (a consortium of donors); and SIFR – the Strategy for International Fisheries Research.

In addition to these and other national institutions mentioned earlier, many more national agencies contribute to the promotion of sustainable development in Canada. For example, in 1993 a new International Centre for Sustainable Cities was established in Vancouver under the *Green Plan*. The Centre is a non-governmental, non-profit international organization, whose role will be to carry out demonstration projects on urban sustainability and share results worldwide.

National strategies

Canadian Biodiversity Strategy

The development of the Canadian Biodiversity Strategy fulfils one of Canada's commitments under the United Nations Convention on Biological Diversity, which Canada ratified in December 1992. The Strategy was developed cooperatively with input from the federal, provincial and territorial governments, and a non-government advisory group. It contains measures to address the Convention's three objectives and its more specific articles.

A significant feature of the Strategy is conserving biodiversity by using an ecosystem approach in all sectors of society and the economy. Also key is the protection of spaces and species and the promotion of the sustainable use of biological resources in agriculture, forestry and fisheries. Once the Strategy is approved, each jurisdiction will be responsible for implementing it within its priorities and fiscal capabilities.

A draft of the Strategy was distributed for stakeholder review at the end of June 1994. Comments received from stakeholders were considered by the Federal-Provincial-Territorial Biodiversity Working Group as it completed its work on the Strategy, which was presented to CCME in November 1994. The Strategy is currently undergoing formal approval processes in all jurisdictions. Reports from each jurisdiction on how it will implement the Strategy are expected within one year.

In 1992, 42% of Canadians surveyed considered packaging when shopping for food...but only 7% considered production methods and 3% considered the company's environmental ethics.

National Action Program on Climate Change

As a signatory to the United Nations Framework Convention on Climate Change, Canada agreed to adopt measures aimed at mitigating global climate change by pledging to return Canadian greenhouse gas emissions to 1990 levels by the year 2000. Canada also pledged to increase public awareness and understanding of climate change and to work to adapt to its possible effects. In February 1994, Canada published its National Report on Climate Change, which identifies actions being taken to meet commitments under the Convention. The report was developed with the involvement of a multistakeholder group.

In March 1995, Canada released its National Action Program on Climate Change, after a series of multistakeholder consultations. The program was presented to the First Conference of the Parties of the Climate Change Convention in Berlin in March 1995.

The key component of the program is a voluntary challenge to industry to reduce greenhouse gas emissions. The federal government will set up a public registry to record commitments, action plans, actions and emissions reductions.

The federal government is supporting selected industry programs (the Ballard fuel cell, Biomass ethanol production). A new National Energy Code for Buildings will set improved standards for energy efficient construction. The federal government also supports joint implementation, both domestic and international.

2.5 Aboriginal peoples

Traditional ecological knowledge

Aboriginal peoples have been called the first environmentalists because they developed more sustainable social, cultural and economic systems. Today, they are developing strategies for sustainable resource harvesting and restoration of the environment and communities that involve negotiations, traditional knowledge and new technologies.

As part of this approach, First Nations are developing plans to restore over-exploited or degraded resources such as forests, fish and wildlife. Their multiple-use strategies include sustainable forestry regimes combined with hunting, gathering and fowling, as well as recreation. Traditional ecological knowledge also provides the base for sustainable resource planning and management and can be synthesized with new technologies, such as geographic information systems (GIS), to develop data bases and planning instruments. Several Aboriginal communities are now using this technological application.

Some people believe that industrial society is "throwing out the baby with the bath water" when it comes to sustainable development. They believe that Aboriginal peoples' traditional economies and ecological knowledge can be the basis of future sustainable natural resource management. Unfortunately, traditional economies are often seen as "Stone Age" or archaic systems because most people think that progress can only be achieved through contemporary Western knowledge and technology. Although industrial society is now aware of the importance of Indigenous medicines and biodiversity, awareness of traditional ecological knowledge is virtually non-existent.

Some environmentalists also pose a threat to traditional economies. Most Aboriginal peoples have a relationship with the natural world based on respect and thanksgiving. They have used nature to produce a sustainable supply of food, shelter and clothing. However, some environmentalists see the

forest, waters and other regimes as wild and feel these regimes should be left in a "pristine" state. The argument that humans no longer need nature to survive does not recognize First Nations' prerogative to sustainable economic, social and cultural rights.

The final barrier is Aboriginal peoples' access to resources and traditional territories. In the past, such access was gained through land claims and co-management regimes. Aboriginal peoples are now negotiating to develop sustainable natural resource strategies that are multiple-use and include sustainable harvesting, traditional economies, biodiversity protection, tourism and recreational uses.

Indigenous knowledge is local knowledge that is unique to many different cultures and societies around the world. It is distinct from the more homogeneous knowledge propagated by universities and research institutions. Indigenous knowledge exists in most economic sectors, including hunting, gathering, farming, crafting, trading, transportation, health, skill training and energy development. In the health sector alone, the market value for medicines originating from plants discovered by Indigenous peoples was estimated in 1990 at $43 billion.

The value of traditional knowledge of Indigenous peoples, particularly their traditional environmental knowledge, has only been recognized in recent years. It is now feared that most of this knowledge could be lost. A *Time* magazine article stated that "Today, with little notice, more vast archives of knowledge and expertise are spilling into oblivion, leaving humanity in danger of losing its past and perhaps its future as well." It compares the loss of traditional knowledge to that of the great library in Alexandria, which burned down 1,600 years ago.

Aboriginal peoples have also developed sophisticated bodies of knowledge using the principle of natural law. "One of the natural laws is that you keep things pure. Especially water," says Oren Lyons, Onondaga, while others point out that "keeping water pure is one of the first laws of life. If you destroy water, you destroy life." Sustainability is thus built into traditional ecological knowledge systems.

Box 2

Aboriginal peoples case studies

- The Traditional Dene Environmental Knowledge Pilot Project is based at the Dene Cultural Institute in Hay River, Northwest Territories, which was established in 1987 to preserve and promote Dene culture through research and education. Because of its link to culture and the land, traditional environmental knowledge was the focus of the pilot project, which has been a major contributor to methods of documenting knowledge, community participation, training and partnering with other institutions. The project has been instrumental in promoting the integration of traditional environmental knowledge with Western science for future resource management.
- The Inuit Circumpolar Conference has been instrumental in promoting the use of Indigenous knowledge in environmental problem solving. In a speech to the 1992 preparatory meeting to the United Nations Conference on Environment and Development, ICC president Mary Simon called on UNCED to recognize "that various levels of support will be required from governments to ensure that the traditional knowledge held by Indigenous peoples survives to take its rightful place as an important knowledge system."
- The Porcupine Caribou Management Board has been responsible for caribou conservation and management in the Yukon and Northwest Territories since 1985. Issues dealt with are hunting on the Dempster highway, antler sales, chemical contamination, trade and barter of caribou meat and industrial disturbance. As an effective co-management organization that includes both Gwich'in, Inuvialuit and three government jurisdictions and operates on the Aboriginal principle of consensus management, the Porcupine Caribou Management Board is often referred to as a model for similar joint management organizations.
- In the interior of British Columbia, the Kluskus and Ulkatcho bands are developing plans for holistic forestry because of their concerns that current allowable cuts are two to three times the sustainable rate. As an alternative to these practices, the bands have applied for a holistic tree farm licence that would involve traditional practices, local economies and indefinite forest conservation. Their strategy includes a complete field-based inventory, zoning for land use, alternative timber extraction (e.g., selective logging), and value-added manufacturing.
- The Shuswap Nation Tribal Council has established an institute to develop plans for habitat restoration on a regional scale that would integrate forestry, mining and agriculture. It will share information not only with other Indigenous communities along the Fraser River Valley but also, thanks to the International Fisheries Gene Bank and IDRC, with counterparts in Colombia and Venezuela.

Throwing out an aluminum beverage can, instead of recycling it,... is like throwing away enough energy to fuel a car for 3 km.

Indigenous knowledge is also recognized in *Our Common Future*, which states that society "could learn a great deal from their traditional skills in sustainably managing very complex ecological systems." Agenda 21 also has a section on Indigenous peoples that says, "policies should be adopted that will protect Indigenous intellectual and cultural property and protect the rights to preserve customary practices and administrative systems."

Sustainable development

Aboriginal peoples are developing new ways of thinking about sustainable development through the use of ancient knowledge, technology and Western science. They have effectively used consensus decision making, participative community development, partnerships with stakeholders and capacity building for holistic ecosystem planning.

The Aboriginal vision for the future is to manage their traditional territories to create sustainable economic, cultural and social development. Several case studies (Box 42) show the promise of this strategy. The foundation of this approach is the combination of Indigenous knowledge with research, education, science and training. Joint management regimes pioneered by Aboriginal peoples and governments can provide the base for developing sustainable natural resource management. Finally, more resources are needed to support sustainable development for Aboriginal peoples.

2.6 Corporate initiatives

When environmental management systems first surfaced in the business community, many questioned whether they were just another management fad. Some corporate executives thought that they would be like the flavour of the month – here today and gone tomorrow. When one chief executive officer proclaimed that it was not enough to be the steward of all things financial for his corporation, he must also be the chief environmental officer, many in the business community shrugged knowingly and thought. "This, too, shall pass."

Japanese companies are scrambling to redesign their products, building in recycled materials, changing product and material composition, and designing for disassembly.

– Paul Hawken, 1993

But it has not. Although many management techniques are still being refined and standardized to better penetrate the wide business community, it is clear that environmental management systems are here to stay. Auditing, waste management and corporate environmental reporting are some of the common features of an environmental management system in any company. Clearly, an environmental management system is a major step on the path towards sustainable development.

In one of the first Canadian efforts to define sustainable development as it relates to business, the IISD offered this guidance – "adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future." Therefore, the sustainable business would have interdependent economic, environmental, and social objectives and understand that long-term viability depends on integrating all three objectives in decision making. Rather than treating social and environmental objectives as costs, a

business that has adopted sustainable development would see the opportunities for profit in achieving these goals.

In a study for Ontario Hydro, for example, Jim MacNeill and David Runnalls maintain that "sustainable development...enables a company to make progress on environmental goals at the same time as it makes progress on cost reduction, job creation and competitiveness." They argue that environmental protection takes development as a given and focusses on the downstream of the development cycle with the corresponding concerns around health, property and ecosystem effects and measures to ameliorate them – usually end-of-pipe. Sustainable development, on the other hand, embraces the entire development cycle with the focus on the upstream end. Therefore, it is concerned with inputs to development, including energy, resource and material inputs, product lines and processes and with efficiency and competitiveness. Other companies have also spent considerable time defining what sustainable development means to them (Box 43).

Like many other business people concerned about the future of the planet, Paul Hawken sees a critical role and opportunity for business. He describes a different kind of economy, a "restorative" economy, as a prosperous commercial culture that is so intelligently designed and constructed that it mimics nature at every step, a symbiosis of company and customer and ecology (Box 45). Although Hawken maintains that no institution in the modern world other than business is powerful enough to foster the changes necessary for our survival, he provides an ironic twist to the way forward. Rather than ask "how do we save the environment?", he maintains that the question to ask, given the key role of business, is "how do we save business?"

Perhaps because of his own experience in merchandising, Hawken's definition of a sustainable business relates well to business in that sector. A sustainable business would undertake to do the following:

- Replace nationally and internationally produced items with products created locally and regionally.

Box 43

Shell Canada

When Shell Canada adopted the concept of sustainable development it decided that it would apply sustainable development principles to all Shell activities, implement sustainable development self-monitoring mechanisms, evaluate public opinion on sustainable development, and participate in consultative processes on sustainable development.

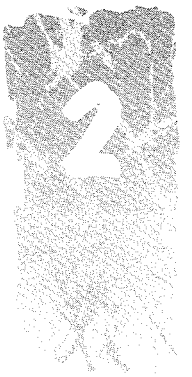
Jack MacLeod, the CEO of Shell Canada at the time of its evolution toward sustainable development, observed that four simple but powerful forces stimulated the staff to take up sustainable development tools with unprecedented enthusiasm: personal concerns about the environment; a clear role for every person to play in building and executing the corporate plan; the transferability of workplace activity to personal life; and the sincerity of management commitment. He advocated a change in approach from environmental management for compliance to management for sustainable development (Box 44).

Box 44

A change in approach

Environmental Management for Compliance	→	Management for Sustainable Development
Environmental Impact Assessments	→	Integrate environmental and economic decision making
Meet requirements for air, water and waste systems emissions	→	Make detailed inventories for waste, air and water systems emissions Design and operate to minimize reclamation Monitor and audit with follow-up
Defer site reclamation plans	→	Design and operate to minimize reclaimation PLUS: Practices based on principles Project life-cycle management Project life-cycle assessment Energy conservation and efficiency improvement Emphasis on anticipation and prevention Proactive consultation with stakeholders

National Round Table Review, Fall 1993



- Take responsibility for the effects they have on the natural world.
- Do not require exotic sources of capital in order to develop and grow.
- Engage in production processes that are human, worthy, dignified and intrinsically satisfying.
- Create objects of durability and long-term utility whose ultimate use or disposition will not be harmful to future generations.
- Change consumers to customers through education.

Large corporations

Like many of its global counterparts, Canada's Business Council on National Issues (BCNI) has issued a set of Business Principles for a Sustainable and Competitive Future to provide guidance to its membership, 150 Cheif Executive Officers from Canada's leading companies. While stressing that sustainable development is fundamentally a process of change, BCNI maintains that for those corporations that have recognized the necessity of transformation, protecting and enhancing the environment has become not just a cost of doing business, but a potent source of competitive advantage. In calling for leadership at the chief executive level and adoption of a business-wide policy, in effect a corporate culture shift, BCNI recommends the following as essential elements of such a policy:

- outward-looking and future-oriented, incorporating lessons learned from other jurisdictions;
- supported by strong employee training and motivation programs;
- based on a strong commitment to research and development, recognizing the business opportunities in developing cleaner products, process technologies and services;
- focussed on life-cycle management at every stage of activity;
- designed to facilitate and support a full assessment of the sustainability of existing and proposed activities; and
- designed to facilitate the transfer of environmentally beneficial technologies throughout the business sector and internationally.

To date, most of the corporate culture experience is based on environmental protection as an added cost, conflict management, polarized issues, risk management, and so forth. Thomas d'Aquino, President and CEO of BCNI, sees the application of "ecoefficiency" as an important lever in moving companies

Industrial park as an ecosystem

As an alternative to watershed planning, an ecosystem approach to planning can also be applied to the management of an industrial park. The city of Dartmouth, Nova Scotia, is one of the partners in a research project examining the industrial park as an ecosystem. The project has used the Burnside Industrial Park as its case study and has defined a number of principles, guidelines and strategies for the development and management of more ecologically sensitive industrial parks. The premise of "industrial ecology" is that the industrial economy – which includes raw materials extraction, manufacturing processes, product use and waste disposal – should, as far as possible, imitate the cycling of materials as it occurs in the natural ecosystem.

Ecoefficiency and E.B. Eddy

E.B. Eddy's approach to sustainable development provides an example of corporate culture shift as well as ecoefficiency applied in a forest products company. In its attempt to quantify its progress toward sustainable development, the company began with the basic assumption that everything used in its processes could be measured and accounted for. E.B. Eddy tracks socio-economic impacts, resources used, efficiency of resource conversion, wastes generated, environmental effects and research activities as indicators of sustainable development. Its first status report on sustainable development, *A Question of Balance*, notes that "the combination of quality process, people and products will make sustainable development a reality and will be a market opportunity" for the company.

toward sustainable development. Ecoefficiency is seen as the ability to produce more goods and services with fewer resources while still achieving higher levels of quality. Its application may be as important to small- and medium-sized enterprises (SMEs) as to large companies (Box 46).

Finding the right mix

Finding a balance between voluntary action, regulation and economic instruments and incentives may be the major hurdle in adopting sustainable development. The business community, represented by its various associations, is stepping forward with proposals for voluntary action on a number of fronts. What is not clear in many of these initiatives is what recourse is available if the broad social goals are not met, for example, stabilizing greenhouse gas emissions at 1990 levels by the year 2000.

Among the many voluntary action initiatives under way is BCNI's proposed voluntary business action on climate change. It is based on the conviction that a cornerstone of Canada's response to the climate change issue should be a voluntary initiative by industry. Like the program adopted in the United States, the proposed program would, according to BCNI, lead to the lowest cost solutions and allow industry the flexibility to adopt the most effective measures that also contribute to competitiveness.

A ground-breaking example of working to find the right mix can be seen in the Economic Instruments Collaborative. The Collaborative was established in 1992 to explore, in a multistakeholder process, the potential contribution of economic instruments in addressing Canada's air quality challenges. While focussing on three specific issues, acid deposition, ground-level ozone, greenhouse gases, a set of guiding principles that may be of value to other initiatives were also endorsed by the group (Box 47).

Another example that embodies the move toward voluntary initiatives, as well as pollution prevention, is the Automotive Manufacturing Pollution Prevention Project, a voluntary cooperative effort between participating members of the Canadian Motor Vehicle Manufacturers' Association (MVMA), Environment Canada and the Ontario Ministry of Environment and Energy. The three large car manufacturers were the first to engage in this – Chrysler Canada, Ford Motor Company of Canada, and General Motors of Canada.

Box 47

Economic Instruments Collaborative Guiding principles

1. The economy and the environment must be addressed in an integrated manner.
2. Human, financial, technological and natural resources are limited and must be used effectively and efficiently to meet environmental, social and economic goals at the same time.
3. Properly designed market-based approaches can

a) achieve many environmental goals in a more economically efficient manner than traditional regulatory approaches;

b) encourage innovations, reward superior performance and discourage inefficient practices, and therefore, enhance the pace and effectiveness of environmental protection; and,

c) complement, simplify or, in some cases, provide an alternative to traditional regulation.

4. Implementation of market-based approaches must recognize the impact on Canada's competitiveness; by the same token, Canada should not fall behind the performance of its trading partners by failing to take advantage of market instruments for environmental performance.
5. Administrative and regulatory efficiency in the application of both traditional and market-based approaches is essential.
6. Market-based approaches should be developed, tested and evaluated for success in the achievement of established environmental goals in an economically efficient manner.
7. Assessment, design, implementation and evaluation of market-based approaches to meeting environmental goals require multistakeholder involvement.
8. Strong public support and political will to protect the environment are prerequisites for the successful and cost-effective application of market-based approaches.

There are 11 federal acts and 45 provincial/ territorial acts governing the use of water in Canada.

Following their initial work to identify 65 targeted substances, the "big three" have since cooperated on a Supplier's Forum focussing on the supplier's role in helping to ensure the early reduction of 29 of the 65 targeted substances.

The MVMA initiative helped to trigger a comparable effort on the part of the Automotive Parts Manufacturers' Association, again a voluntary pollution-prevention agreement with the goal of verifiable reduction or elimination of substances used, generated or released by the industry.

A similar initiative is under way in the drycleaning business. It involves Environment Canada, the Ontario Ministry of Environment and Energy, the Drycleaners and Launders Institute and the Korean Drycleaners Association. As a means of finding a viable way to reduce the use of all non-aqueous solvents in the fabricare industry, the key focus of this effort is to demonstrate the Green Clean processes and technologies. A pilot Green Clean depot has been in place in Toronto for a number of months and negotiations are under way with several other Ontario cleaners to begin offering customers a Green Clean option.

In another initiative many of the companies and associations involved with the breakdown of a multistakeholder effort to accelerate the reduction and elimination of toxic chemicals, the ARET process, regrouped to meet an industry challenge to voluntarily reduce or eliminate emissions into the environment. In the ARET challenge "invitation," voluntary action was defined as neither removing the requirements for emitters to meet existing regulations nor precluding the possible introduction of new regulations while offering a quicker, more flexible approach for environmental goals. Although the federal government has welcomed this initiative as a practical way to move forward, the overall experience may have polarized a community that was trying to learn to work with business on the toxics elimination issue.

It would appear that while not mutually exclusive, as the Economic Instruments Collaborative experience attests to, the trend toward voluntary action by industry does not often involve a multistakeholder process. In some cases they may simply be trying to avoid such interaction, while in others cases a cooperative approach was tried, but failed.

Levering change

Work under way to develop new international standards, although couched more in the language of environmental management systems rather than sustainable development, will inevitably force the bulk of small, medium and large corporations to adopt environmental practices that put them on the pathway to sustainability.

The Canadian Standards Association (CSA) is providing the secretariat for the Environmental Management Committee of the International Organization for Standardization. CSA has engaged representatives of Canada's business, consulting and interest groups as well as government to assist in developing guidelines for auditing, labelling, performance evaluation, life-cycle assessments, product standards, risk assessment and emergency planning and preparedness, among other things.

Although SMEs face considerable economic barriers (e.g., a lack of capital for new environmental management equipment) efforts are under way to begin this transition at least on the information and training level. The Canadian Chamber of Commerce, in partnership with the NRTEE, produced and distributes *A Small Business Guide to Environmental Management.*

Other trade associations, such as the Canadian Manufacturing Association, have developed special programs for their constituencies. Under the recently announced Environmental Industry Strategy, these associations and groups may be able to help SMEs to identify environmental problems associated with their operations and to prepare a viable plan of action to correct them by adopting environmental technologies.

The other side of the cost in moving toward environmental management is the profit opportunities following from such a move. A whole new sector of industry, described as environmental industries, has emerged out of the global opportunities anticipated as more and more countries move toward stronger environmental regulations and sustainable development.

Box 48

The four generations of environmental technology

	Point of Application	Characteristics	Examples
REMEDIATION TECHNOLOGIES	symptoms damaged resources or environments	after the fact costly range from low tech to high tech	soil remediation toxic site clean-ups water treatment
ABATEMENT TECHNOLOGIES	pollutant capture or treatment at end-of-pipe	captures or treats pollutants before release consumes capital, energy and resources generates a waste stream fairly costly	flue gas desulphurization sewage treatment plants catalytic mufflers
POLLUTION PREVENTION TECHNOLOGIES	industrial process design product design or composition	changes product or process to reduce or prevent pollution more cost effective than abatement	chlorine-free paper cyanide-free electroplating lead-free gasoline industrial process design
SUSTAINABLE TECHNOLOGIES	alternate product or service	reduced waste stream multiple benefits environmental/ economic/social/ resource efficiency	efficient lighting recylced paper renewable energy bio-cosmetics and drugs

Developed for IISD's *Earth Enterprise Tool Kit* by Brian Kelly, now Director of Environment and Sustainable Development, Ontario Hydro.

The environmental industry

The best current estimate of Canada's "environmental industry" puts it at roughly 4,500 firms employing about 150,000 workers and generating $11 billion in annual sales. Growth is at approximately 6%, or roughly three times the rate of growth of the overall Canadian economy. SMEs account for most of the firms in this sector, with a large number, roughly two-thirds of Canada's environmental firms, in the service sector. The other third is made up of manufacturing firms which generate about $6 billion in sales. The service sector accounts for about $5 billion.

Less than 20% of the output of Canada's environmental industries is currently exported and, of that figure, over 80% is exported to the US market. Canada currently runs a trade deficit in environmental goods and services of roughly $1 billion per year. Such data illustrate both the necessity of, as well as the market opportunities for, strengthening Canada's environmental export performance.

Much of the focus of the environmental industry sector is determined by the kind of environmental legislation now in existence and, in many cases, anticipated in less developed countries. This is primarily abatement and remediation-based, though it is moving toward pollution prevention. As the mix of regulation and voluntary initiatives moves towards sustainable development, pollution prevention and sustainable technologies will become more commercially attractive.

Four generations of technology (Box 48) have been described in IISD's *EarthEnterprise Tool*

Kit. It suggests that sustainable technologies and the products and services they provide will produce a number of benefits simultaneously rather than focussing on just one objective. They reduce the need for the environment-economy tradeoffs that characterize the remediation and abatement approach – principally by capturing the economic advantages of energy and resource efficiency. The phrase "ecoefficiency" conveys the notion, but, in this view, true sustainability also involves economic and social dimensions.

Under Canada's new Environmental Industry Strategy, the federal government is providing additional resources for the range of programs and supporting initiatives that have sprung up in response to the needs of the environmental industry sector. The three main elements of the Strategy include delivery of federal support in a direct, easily accessible, service-oriented, cost-effective way; more funds to promising new research and develop-ment initiatives to develop and commercialize innovative environmental technologies; and improved access to domestic and global market opportunities for Canadian environmental companies.

The relationship between health, environment and economy places an important responsibility upon the medical profession ...As a profession, we must continue to balance our vision of individual patient health, important as that is, with the acknowledgement of the environmental determinants of the health of the community.

– Canadian Medical Association, *Health, The Environment, and Sustainable Development.*

In looking ahead to the growth expected in the environmental industry sector, an unparalleled challenge exists for Canada and the Canadian business community to demonstrate our commitment to sustainable development and the competitiveness that its adoption should create – at home and globally. Clearly, this is a challenge that can draw Canadians together toward sustainability.

2.7 Other decision makers

There are many other decision makers operating outside of government, business, and Aboriginal communities. Professional associations, women's and youth groups, educators, and environmental and social activist groups are all involved in initiatives that could help to promote Canada's transition to a sustainable future.

Professional associations

Many professional associations across Canada have undertaken significant sustainable development initiatives. In some cases, the impetus has come from the national level; in others, it has begun at the provincial level. The key factor seems to be a "champion" within the organization, whose energy and dedication are fundamental to the success of the initiative.

Professional associations of accountants, architects, engineers, planners, lawyers and health practitioners are all working in some way toward promoting environmental responsibility and sustainable development. The Canadian Institute of Chartered Accountants, for example, promotes corporate accountability through better reporting on environmental performance. The Canadian Institute of Planners has played an important role in the Healthy Communities movement; professional engineering associations are re-examining their professional practice

guidelines to ensure they reflect principles of sustainable development; and the Canadian Bar Association has prepared a study on law reform options to support sustainable development. Architects have also taken some interesting steps to promote more sustainable development (Box 49).

Universities and colleges

In the period leading up to the Earth Summit, Canadian university presidents met with government officials, the business community and NGOs to discuss the role of universities in improving the capacity of countries to address environmental and development issues. The result of the meeting was the Halifax Declaration, which offered some general direction for universities to follow in responding to the need for sustainable development. In addition, an action plan was developed describing specific activities that universities could be undertaking at the local, national and international levels.

Currently, nearly 40 programs at the undergraduate and graduate levels at Canadian universities relate to environmental studies, environmental sciences and sustainable development. The NRTEE's Task Force on Education recently brought together representatives of these university teaching programs from across Canada. They discussed some of the key issues regarding environmental and sustainable development education at the post-secondary level. The workshop's report provides some useful information about relevant teaching programs across Canada. Another initiative is that of the Association of Canadian Community Colleges (ACCC) (Box 50).

In addition, the Canadian Centre for Sustainable Development Research was formed in October 1993 to "further the process of sustainable development through support for interdisciplinary research and application of that research to societal needs." The University of British Columbia's Sustainable Development Research Institute is responsible for organizing the work of this group. The Centre's role is to promote greater collaboration between institutes and with government, industry and NGOs; to promote the need for sustainable development research within universities and the wider community; and to help disseminate the work of researchers studying sustainable development issues.

Labour unions

Many labour unions are actively involved in sustainable development initiatives. For example, industrial unions are active in waste management issues, public employee unions are active in health issues, and

Box 49

Architecture and landscape architecture

Over the past several years, the Royal Architectural Institute of Canada (RAIC) has held a number of round tables under the auspices of its Architecture and Environment Committee to share information and ideas about environmental issues. The Committee is also engaged in advocacy. It has met with representatives of both the forest sector and government in British Columbia to consider the use of wood in buildings and is investigating the possibility of wood certification based on forest practices. Also being looked at are ways to encourage development of a building-labelling program, Building Environmental Performance Assessment Criteria (BEPAC). This kind of labelling would require audits of energy efficiency, water conservation, embodied energy of building materials, greenhouse gas emissions from mechanical systems, etc.

The Canadian Society of Landscape Architecture is also concerned with sustainable development. It works to create wetlands, restore habitats and re-establish indigenous tree species, and, in a more proactive approach, it also works with other professionals to ensure that development activities result in minimal environmental impacts.

Some 2,000 landscape architects are members of the Society for Ecological Restoration (SER), which now has an Ontario chapter. The mission of the Society is to promote ecological restoration as a means of sustaining the diversity of life on Earth and re-establishing an ecologically healthy relationship between nature and culture. The Society defined ecological restoration as the process of re-establishing, to the extent possible, the structure, function and integrity of indigenous ecosystems and the sustaining habitats that they provide.

teachers unions are involved in educational issues. Activities range from in-house to broad public outreach, from community work to international work, and from lobbying and advocacy to hands-on activities.

The Canadian Labour Congress (CLC) has officially endorsed sustainable development and has focussed on three issues: union organization in the workplace, pollution prevention and climate change. Much of its work has centred on advocacy, in particular on federal government regulatory mechanisms, and on education, both through its member organizations and public outreach. The CLC's Environment Committee produced a Policy Statement on the Environment in 1991 that was endorsed by the CLC Executive Council.

The traditional approach was to view natural resources as common property subject to opportunistic exploitation; the change that we are starting to see reflects the view that these resources...are now subject to a public trust to ensure access and enjoyment for future generations.

– The Canadian Bar Association, *Sustainable Development in Canada: Options for Law Reform*, 1990.

Scientific organizations

Canada's success in responding to the challenge of sustainable development will also depend on the quality of the research upon which our decisions are based. Yet most relevant research is not even seen as sustainable development research, but is still focussed on the individual components of sustainability, including environmental studies, green industry and global change. Canada's three principal federal research councils are all involved in some way in promoting sustainable development (Box 51).

There are, of course, many examples of how new technologies are helping Canada move toward sustainability. One of these is the "electronic highway," that gives Canadians ready access to information from their homes and places of work. This can become an effective tool for information sharing and networking (Box 52).

Peace

Like other groups involved in the peace movement, the Canadian Peace Alliance does not use the word "sustainability," but it sees its activity as essential to the transition to sustainability in Canada. It believes warfare and the preparation for war significantly affect the environment. The Peace Alliance has recently prepared submissions for Canada's defence policy and foreign policy reviews. The Alliance's emphasis is on demilitarization and redistribution of funds to increase development assistance. The Canadian Peace Alliance's Citizens' Inquiry into Peace and Security highlighted

BOX 52

ACCC Environmental Citizenship Program

Initiated in September 1993, the Association of Canadian Community Colleges Environmental Citizenship Program was first pilot tested using Environment Canada's "Environmental Primers" as the basis for course and project content. The success of the pilot project was enough to convince its steering committee members that the program could become a catalyst for improving college and institute environmental performance. All member institutions were therefore invited to identify an Environmental Citizenship representative. Response to the request was positive and enthusiastic: the initial goal of involving 120 institutions by the project's third year was surpassed within four months of the invitation. Nearly 150 colleges and institutes in 600 communities are now on board. Colleges and institutes, with their community-based educational mandates and orientation toward practical and applied fields, are in a pivotal position in this transition toward a sustainable future.

the connections between security in all its aspects – economic, environmental, social and political – and sustainability.

Development NGOs

Like other NGOs around the world, Canadian development NGOs are re-examining their mandates and roles. It is clear that traditional forms of aid and assistance are not adequate to solve the problems of growing poverty and global ecosystem destruction. New strategies of development are needed. Development NGOs are turning their attention to policy development and policy advocacy in both national and international forums. Increasingly, sustainability is an important part of that work.

In the recent parliamentary foreign policy review, the Canadian Council for International Cooperation (CCIC), a coalition of 125 development NGOs, recommended that the pivotal goal for Canadian foreign policy is the promotion of global justice and sustainability. At the global level, CCIC is continuing work started in the UNCED processes to build agreements between existing environmental and development networks about how they work together to develop credible alternative policies, to share experience and to influence international forums.

CCIC is also starting a working group on sustainable livelihoods as a contribution to the World Summit on Social Development. In winter 1995, it will run a workshop on environmental policies and practice for member organizations. About 15 members work together in a CCIC round table on multilateral advocacy to share experience and strategies. UNCED follow-up is a major part of the agenda.

Development NGOs are working with environmental NGOs across the country in environment and development (E&D) working groups attached to CCIC provincial councils or Canadian Environmental Network provincial networks. For instance, the British Columbia E&D working group was active on the forestry issue during UNCED and continues to be involved. Many of these working groups have had

BOX 1

Research Councils

All research programs funded by federal granting councils are covered by the federal government's regulations pertaining to the Environmental Assessment Review Process, which requires that each project with a potential negative environmental effect be reviewed for its "environmental effects and those social effects that are directly related to the environmental effects."

National Research Council (NRC)

The laboratories of the NRC provide a broad range of skills to address opportunities in the environmental technology field. The Council has placed priority on collaborative projects with industry, particularly with respect to clean process and product technologies. They are primarily aimed at the adaptation, improvement, development, transfer and application of technology, and ensuring that technology diffusion will occur through the environmental industry firm. The Industrial Research Assistance Program provides technical advice and support to firms to improve their scientific and technical capabilities.

Social Sciences and Humanities Research Council (SSHRC)

SSHRC has supported a number of projects which have contributed to a better understanding of the concept of sustainable development. These include multidisciplinary projects in environmental ethics, land-use planning, resource management and ecosystem studies. Research in the latter area given a stimulus through the Tri-Council Eco-research Program, which was supported through Green Plan funds. Unfortunately the third phase of this program was cancelled as a result of recent federal budget cuts.

The Council also participates in the International Group of Funding Agencies for Global Change Research, an informal partnership of national agencies funding global change research in the natural, social and economic sciences.

Natural Sciences and Engineering Research Council (NSERC)

NSERC fosters the discovery and application of knowledge through the support of university research and the training of scientists and engineers. The Council promotes the use of this knowledge to build a strong economy and improve the quality of life of all Canadians. No funds are released for projects that could have an adverse effect on the environment.

Although the concept of sustainable development is applied to all programs, it is the particular focus of the Strategic Grants Program in the area of Environmental Quality. Research in this area centres on systems, processes and technologies aimed at deriving a better understanding or means of improving how we define and protect the state of the environment in Canada.

representatives at the United Nations Commission on Sustainable Development.

Generally speaking, development NGOs are eager to ensure that the Canadian debate on sustainability is set in a global context. It makes no sense to try to achieve national sustainability in an unsustainable global system. Global sustainability will ultimately require a more equitable sharing of the earth's carrying capacity. For instance, someday we are going to have to answer the question, "how do we share the globe's carrying capacity for CO_2?" We could divide the available carrying capacity by population or by GNP or by need. Regardless of how we do or do not share the carrying capacity, it is likely that it will affect Canadian behaviour and choices. Canadian development NGOs are active in many ways trying to prepare Canadians for such choices.

Environmental NGOs

There are thousands of environmental groups in Canada whose interests range from policy concerns at all levels to local environmental issues. Each contributes in some way to sustainable development in Canada. Some groups' interest is limited to environmental protection issues, while others operate in a broader sustainable development framework. Many of these groups are members of provincial or regional networks; and these provincial networks are joined together in turn through the Canadian Environment Network (CEN), which has about 2,000 member organizations, and coordinates activities and discussions among them.

Environmental groups in Canada are active in a variety of areas, including research (to better define environmental problems), education (to promote better understanding of the issues throughout society) and advocacy (to push for practical solutions to these problems). As governments have opened up their decision-making processes, environmental groups have been confronted with increasing demands for their input to consultative processes. They will continue to be important players in putting issues on the public agenda and raising awareness about stresses on the environment.

The WEB

The WEB/Nirv Centre is a global communications system designed to serve the needs of the environmental, peace, international development, social justice and social services communities. WEB enables users throughout Canada and in most countries around the world to communicate with one another and share information through electronic mail, computer conferences and a user directory. Many computer conferences related to sustainable development take place on WEB including United Nations documents and related discussions. WEB is working with the Foundation for International Training to establish a women's network that will share information and prepare input for the 1995 World Conference on Women in Beijing. WEB is creating a Community Economic Development Research and Information Clearinghouse to link community economic development practitioners in Ontario and has recently secured funding to link all environment groups in Ontario. WEB also feeds information to other networks – school-based networks, free nets, library networks – so that information is widely accessible.

Women and sustainability

The Sustainable Development Research Institute at the University of British Columbia sponsored a conference on Women and Sustainable Development—Canadian Perspectives, held in Vancouver in May 1994 as part of the Canadian preparatory process leading up to the 1995 United Nations International Women's Conference in Beijing.

Four hundred women came together to articulate their vision for sustainable development, identify the barriers preventing the realization of that vision and recommend policy options for the future. Part of the aim of the workshop was to link female researchers with women in NGOs, the private sector and government to build bridges between research, policy and action.

Conference follow-up will include an electronic directory of Canadian women who are sustainability activists and of regional events that will test and refine the policy options articulated at the conference.

Women

Women's groups and individual women have taken active roles in sustainable development efforts. In the past year much activity has focussed on the Women and Sustainable Development Conference that took place in Vancouver in May 1994 (Box 53). There was also considerable activity related to the 1994 United Nations Conference on Population and Development and the 1995 Fourth World Conference on Women.

Women's involvement in sustainable development-related issues is certainly not new. The Women's International League for Peace and Freedom (WILPF) has been addressing issues of disarmament, human rights and development for years. To mark its 75th anniversary in Canada, WILPF has prepared and published the Canadian Women's Budget, a 60-page book that analyzes Canada's defence and tax budgets compared to funds devoted to social programs. It then recommends changes that would redistribute funds to social and environmental programs.

BOX 54

Environmental Youth Alliance (EYA) in British Columbia

Environmental Youth Alliance-Vancouver organized the youth component of Vancouver's inner-city community "Stewardship Project," which is converting a dumpsite to parkland. Environmental Youth Alliance-Victoria has three local projects that are also being linked through the West Coast Youth Environmentalist Network with South American countries. A biodiversity project focussing on clearcutting has organized youth seminars in British Columbia to provide information on alternative lifestyles and consumption patterns, to encourage and initiate local hands-on projects, and ultimately to develop a Declaration of Youth on the preservation of biodiversity to be taken to the press and hopefully to the United Nations. A second "Lifecycles" project focusses on rehabilitation of spaces in cities and encourages medicinal and organic food gardening in urban areas. EYA is also organizing a "Say Why" alternative radio project for youth to focus on alternative lifestyles and culture.

Youth

Youth are a proactive group of people in society who are involved individually and in groups in almost all aspects of sustainable development. As the "future generation" that inherits the earth from its current stewards, youth are certainly aware of environmental degradation and inequity between the North and South. Youth are becoming increasingly well-organized at the community, regional, national and international levels. They played an important role in Rio where they presented a national position paper (*Canadian Youth Declaration on Environment and Development*), and have continued to be active in Canada through such organizations as the Environmental Youth Alliance (Box 54), Environment JEUness (ENJEU) in Quebec, Student Action for a Viable Earth Tour, Canada World Youth and others.

Seniors

Organizations representing seniors in Canada are working on issues such as health, human rights, living standards and education. Although they may not call these sustainable development initiatives, they are in fact important pieces of the sustainable development puzzle. In addition to the activities of seniors' organizations, individual seniors are very active in almost all aspects of Canadian society that are involved with sustainable development. Individual involvement seems to be particularly strong in initiatives focussing on peace, healthy communities, health care and environmental issues.

Seniors are working together at the national level through networks such as One Voice, but a tremendous amount of seniors' activity also occurs at the community level. Two examples out

of thousands of Canadian initiatives include the Seniors Outreach Services, which has organized sustainable vegetable gardening and harvesting by seniors at an old mill site, and the Sunshine Coast Wildlife Seniors Group, which is undertaking animal rehabilitation and sharing the knowledge through intergenerational sessions with Boy Scouts and Girl Guides.

Disabled

Much of the work of organizations for disabled people focussed on human rights and health, two important components of sustainable development. The Council of Canadians with Disabilities, for example, is an advocacy group promoting accessibility for, identifying and meeting the needs of, and equalizing opportunities for, the disabled population of Canada. Their work significantly contributes to the social-equity aspect of sustainable development.

Disabled Peoples International has created a Task Force on Environment and Sustainable Development which lobbies around the issues of disabled peoples and sustainable development. Much of its work focusses on two aspects of sustainable development: how the lack of sustainable practices can cause disability (e.g., the results of misuse of toxins, lack of worker security in corporations and war, and malnutrition) and how to integrate the disabled into any sustainable development initiatives.

Foundations

A sector of Canadian society that has yet to receive adequate attention in this document is charitable foundations. Foundations play an important role in supporting the work of NGOs. As the movement toward smaller government continues in Canada, the role of foundations in supporting such groups will become increasingly important. NGOs will have to adapt to a new reality and Canadians will have to recognize that if they want their special interests adequately represented they will have to help that happen, either through a renewed commitment to volunteerism, or through direct financial support. The choices foundations make about who and what to support could certainly have an impact on Canada's transition to sustainability.

Between 1985 and 1991, capital expenditures on pollution abatement and control in Canada increased four times...from 0.7% to 2.8% of total investments.

3

International dimensions

Recalls the international context for sustainable development.

Considers current roles of international environmental, development and economic organizations.

Reviews some of Canada's international commitments in the area of sustainable development.

Recognizes the experiences of other countries in national sustainability planning.

The success with which we manage our relations with the rest of the world will have a decisive impact on our ability to promote sustainable development at home and abroad. Our ability to shape international regimes and institutions will also enable us to share our adjustment burdens with others and build a supportive climate in which our domestic efforts can flourish.

As such, a successful national strategy must have an international dimension. American economic, environmental and social policies have a powerful influence on Canada. For example, because more than 90% of Canadians live within easy driving distance of the United States an increase in Canadian gasoline or carbon taxes to reduce CO_2 emissions without a similar increase in the United States could cause more Canadians to cross the border for better prices, with a loss of economic activity in Canada and possible negation of the desired environmental benefit.

European fishing fleets have contributed to the depletion of fish stocks off Canada's East coast, at immense cost to the communities that have relied on that resource for several hundred years. Airborne nuclear waste from the former Soviet Union threatens the natural food supply and health of Aboriginal peoples in Canada's Arctic, while other airborne toxins from the southern reaches of the hemisphere pose similar problems for Canadians in other parts of the country.

As a country with the second largest land mass in the world, borders on three oceans and the world's longest coastline, Canada is one of the most internationally exposed countries in the world. Approximately 30% of our GDP, three million jobs, and the prosperity of many of our communities depend directly on exports.

Maintaining Canada's standard of living – one of the highest in the world (Box 55) – depends not only on responsible resource stewardship at home, but also on enabling the free flow of trade in an environmentally-enhancing and sustainable way. Consumer preferences, standards, economic instruments, domestic regulations, subsidies and environmental policies of our trading partners can have an immediate and important effect on Canada's ability to serve foreign markets, and thus to generate the employment and economies of scale on which our status as a major industrial power ultimately depends.

At the same time, Canada has formidable assets for enhancing sustainable development at home and extending it to the international community. With a leading share of many of the world's critical natural resources, distinguished scientific and research capabilities and a reputation for effective environmental diplomacy, Canada can do much to protect its environmental interests and enhance the global good. Although rarely compelled to use unilateral measures, we have not hesitated to act when necessary, as with the Arctic Waters Pollution Prevention Act of 1970 and the recent initiatives to protect Atlantic groundfish stocks.

BOX 55

Global Inequities

"More than a billion people – one-fifth of the world population – live on less than a dollar a day. Western Europe and the United States achieved this standard of living more than 200 years ago. Despite tremendous advances during this century, the imbalance between rich and poor persists and widens, among nations and within nations.

According to the Worldwatch Institute, it is this chasm of inequity that is a major cause of environmental decline: 'It fosters overconsumption at the top of the income ladder, and persistent poverty at the bottom... people at either end of the income spectrum...damage the Earth's ecological health – the rich because of their high consumption of energy, raw materials, and manufactured goods, and the poor because they must often cut trees, grow crops, and graze cattle in ways harmful to the Earth merely to survive from one day to the next.'"

– Environment Council of Alberta, *Ensuring Prosperity: Implementing sustainable development*, 1995.

Between 30 to 60% of urban land in Canada is used for highways, roads, drive ways and parking lots.

More often, we rely on legislation, lobbying, and public diplomacy in bilateral relationships with major powers, such as in the decade-long quest to reduce American sources of acid rain. But above all, Canada has found solutions in building strong, effective multilateral institutions. That preference for multilateral institution-building has acquired added force in recent years because of the increasing transboundary dimensions of many environmental problems and the globalization of the economy.

...a 5 ha parcel of land... could sustain consumption by one Canadian indefinitely... If we allotted each person on the planet an equal share (of productive land), everyone would receive 1.7 ha, requiring Canadians to reduce their resource throughput consumption by two-thirds.

– Canadian Council of Ministers of the Environment, *1993 Environmental Scan*

Canada's strategy for supporting sustainable development at home and abroad should also focus on international institutions. First, we need to ensure that there is a strong array of multilateral environmental and social organizations to balance the powerful set of economic institutions created at Bretton Woods – notably the International Monetary Fund (IMF), the International Fund for Reconstruction and Development (IBRD) and later the GATT. Second, we need to promote the integration of the programs and staff of these institutions. In the short term, established economic institutions could be made more supportive of environmental and social concerns.

Finally, once the move to greater equality and mutual support is under way, emphasis could be placed on making these institutions (or their replacements) more effective by endowing the best adapted among them with greater resources, scientific and technical capacity, professionalism, and the capacity for timely action.

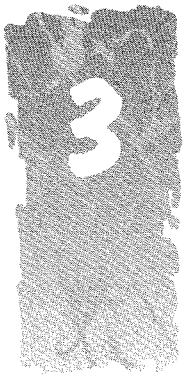
Strengthening environmental institutions relative to their economic counterparts is very much in Canada's national interest. With about 3% of the world's GNP and share of international trade, Canada is at best the seventh-ranked economic power in the world. But with about 10% of the world's forests and fresh water, it is arguably the first-ranked environmental power.

Integrating environmental, social and economic considerations requires attention to a number of international issues, including exchange rates, monetary and fiscal policy and technology transfer, but also ecological and social concerns such as equity across generations as well as national borders.

Given the critical importance of trade to Canada's economy and deficit, however, trade and environment issues are key to a medium-term strategy. In particular, strengthening the claims of the environment should be done in a way that does not pose new barriers to Canadian exports, and that enhances the longer-term access to, competitiveness and demand for Canadian goods and services worldwide.

Making multilateral institutions operate more effectively does not mean building new bureaucracies on top of the overlapping layers of bodies that have grown up during the past century. Rather, it means streamlining them – restructuring or even eliminating ineffective agencies and concentrating our scarce resources on effective ones. It also means focussing more on the organizations where Canada has real influence.

Defining the details of the international dimension of a national strategy for



sustainable development thus requires starting with an assessment of how the existing array of international institutions meet these criteria of equality, integration and effectiveness.

3.1 Sustainability institutions

During the past century, the world has witnessed three great bursts of multilateral institution building: the League of Nations formed from 1919 onward, the United Nations born in 1945, and the North Atlantic network that has emerged since 1949. Although these systems contained from their inception functional agencies dealing with social and economic issues, the environment was more or less unaddressed. It was only with the 1972 Stockholm Conference on the Human Environment that the UN system created the United Nations Environment Program (UNEP), which still suffers from a secondary status even today.

UNEP

The mission of the United Nations Environment Program is to provide leadership and encourage partnership in caring for today's environment without compromising that of future generations. After the 1992 Earth Summit, UNEP reorganized its program and administration to meet the challenge of Agenda 21. It shifted its emphasis from monitoring activities to enhancing capacity building in developing countries, thus becoming more proactive in seeking solutions to environmental problems.

To date, UNEP's status as a program and its location in Nairobi have made it difficult for it to secure visibility and support in major countries, and to form good working relationships with the major economic and trade institutions.

One of Canada's central objectives could be to integrate the environmental, social and economic programs, institutions and agencies, of the UN, whose 50th anniversary has placed its reorganization at the top of the international policy agenda. This gives us a vital short-term opportunity to advance our objective of making the UN system more integrative, effective and dynamic.

It will not be possible for the community of nations to achieve any of its major goals – not peace, not environmental protection, not human rights or democratization, not fertility reduction not social integration – except in the context of sustainable development that leads to human security.

– UNDP, *Human Development Report*, 1994

UNDP

The United Nations Development Program (UNDP) has long had a pioneering role in encouraging economic development in poorer countries of the South. The presence of powerful funding institutions, such as the World Bank, has resulted in no major institutional strengthening of UNDP. It has been given a role in the management of the new Global Environment Facility, which could serve to strengthen cooperation among international organizations.

Among UNDP's recent successes has been the awareness it has created of a comprehensive concept of development, through its annual publication of the *Human Development Report*. First published in 1990, it ranks countries by a Human Development Index (HDI) that goes beyond economic growth indicators to include the core social criteria of

adult literacy, education and life expectancy as well as equity and gender issues.

Since the Report's inception, Canada has ranked first or second in the world on the combined index (but somewhat less when gender equality is taken into account). Another objective for Canada, which would make the Index more valuable, would be for UNDP and UNEP to incorporate a "Sustainability Index" into the overall HDI, thereby integrating social and environmental indicators with economic ones.

In an increasingly interdependent world, no country's environmental policy can remain too far out of step with that of its major trading partners without imposing economic costs.

– Canadian Council of Ministers of the Environment, 1991 *Environmental Scan*

Commission on Sustainable Development

The major institutional legacy of the Earth Summit was the creation of the UN Commission on Sustainable Development (CSD) which has 53 member states, including Canada. Its primary responsibility is to review and monitor the progress of the implementation of Agenda 21 and the other agreements reached at UNCED, but it also works on improving dialogue and information exchange both within the UN system and with outside agencies.

Canada continues to play an active role in the follow-up to UNCED and in the work of the CSD itself, strongly supporting strengthening its linkages with other UN agencies and other organizations. But the CSD has already been somewhat weakened by a lack of financial resources and by bureaucratic constraints inherent within the UN. Canada could use moves to reform the UN as an opportunity to strengthen the CSD, particularly its policy and implementation roles. The CSD should also actively identify the post-Rio issues and help to mobilize political will, especially among its own members, to address them.

Global Environment Facility

The Global Environment Facility (GEF) was established in 1990 as a three-year pilot program to help developing countries and economies-in-transition address global environmental problems in four areas: protection of the ozone layer; mitigation of climate change; conservation of biological diversity; and stopping the pollution of international waters.

In 1992, the GEF was designated as the interim financial mechanism for the Conventions on Climate Change and Biodiversity. UNCED named the Facility as the principal mechanism for dealing with global environmental issues and agreement was reached in 1994 on a restructured GEF.

In the coming years, Canada could usefully employ its influence at the GEF in three ways. First, it could focus the GEF's interest in biodiversity and international water pollution on particular Canadian, but also global concerns – forestry and over-fishing. Second, it could promote more visibility for the Facility to raise public support so as to replenish and expand it in the future. Third, Canada could urge the development of an informal caucus to ensure that major potential future donors (particularly in Asia) will provide the necessary expanded funding for replenishing the GEF. Fourth, Canada could expand the concept of international waters to include coastal zones, estuaries and large lakes. And fifth, it could urge that the GEF move to a more integrative approach regarding its designated issues, research and funding.

3.2 Existing commitments

Canadian diplomacy in the above institutions and numerous other international organizations should be guided, but not confined, by our existing international commitments. Indeed, much of our effort should be devoted to the long-term objective of supporting and strengthening those integrated international conventions that address Canadian priorities, and to the interim goal of using the Biodiversity Convention to move toward greater integration.

Canada's international commitments to implement and enforce newly acquired international treaty obligations to protect the environment require a broadened federal role in environmental matters domestically.

– Canadian Bar Association, 1990.

Canada's general approach to strengthening such conventions should be to concentrate on issues that involve global "public goods" or the "global commons;" those that are most threatened by current unsustainable practices; and those that address intergenerational equity. Such criteria can only help to strengthen the Biodiversity and Climate Change Conventions and the Montreal Protocol, among others.

Agenda 21

Agenda 21 is the global plan of action that was developed by 179 States at the 1992 Earth Summit. It outlines a vast work program for the 21st century that aims to reconcile the need for a high quality environment with the need for a healthy society and economy for all peoples and regions of the world. It strongly emphasizes the need for an integrative, holistic approach to environmental, social and economic development and encourages partnerships at local, national and international levels to achieve the goals of sustainable development.

This 600-page document is divided into 40 chapters under four comprehensive sections. Each chapter sets out a variety of objectives and suggested actions for achieving them. Overall, Agenda 21 provides a guide into the next century for business and government policies, and for personal choices. Given Agenda 21's scope it was emphasized that individual governments, businesses and NGOs would have to take on the responsibility for developing their own plans of action. This has been done in a variety of ways throughout the world (Chapter 3.5), but the lack of adequate resources has constrained implementation of Agenda 21 to date.

Biological Diversity

Negotiations for the Convention on Biological Diversity were completed in time for it to be signed by over 150 countries at UNCED in June 1992. It has since been ratified by over 50 countries and came into force in December 1993. The first Conference of the Parties, the decision-making body, was held in December 1994.

The Convention has three main objectives: the conservation of biological diversity; the sustainable use of its components; and the equitable sharing of benefits arising from the use of genetic resources. Countries will be encouraged to conserve local biological diversity in the knowledge that, if used sustainably, this resource can provide financial returns and, more importantly, will prevent its disappearance forever.

Canada became the first industrialized country to ratify the Convention and

Canada ranks within the top five per capita waste producers in the world.

immediately began developing a response to it. Each signatory is required to develop national strategies for the conservation and sustainable use of biodiversity. The Canadian Biodiversity Strategy, described in Chapter 2, establishes a framework for action within each jurisdiction and a framework for Canadians to participate in the conservation of biodiversity. Once the Strategy is in place, Canada should undertake to host a conference of the Convention signatories, with a view to increasing support for this instrument and its immediate implementation.

Climate Change

Canada signed the Framework Convention on Climate Change (CCC) at the Earth Summit in June 1992, and ratified it in December of that year. The Convention came into force in March 1994 and the first meeting of the signatory parties was held in March 1995.

The CCC's goal is to stabilize greenhouse gases in the atmosphere at levels that will not dangerously upset the global climate system. Because most of the world's greenhouse gas emissions presently come from developed countries, the Convention recognizes that those countries should take the lead in fighting climate change and its adverse effects.

The Convention requires that developed nations as well as economies-in-transition (e.g., Eastern Europe) adopt national policies and take measures to limit emissions of greenhouse gases. In addition, it requires them to protect greenhouse gas sinks, such as forests and oceans. The aim is for these nations to reduce their emissions of CO_2 and other greenhouse gases to 1990 levels by the year 2000 (Box 56). At the March 1995 meeting it was obvious that Canada had fallen far short of its goals.

Developed countries must help developing countries deal with the requirements of the Convention by providing money and technical assistance to help them measure the flow of greenhouse gases; by assisting countries particularly vulnerable to the effects of climate change to meet their adaptation costs; by providing environmentally sound technologies; and by supporting the development of such technologies in these developing countries.

Montreal Protocol

The Montreal Protocol on Substances that Delete the Ozone Layer was negotiated in Montreal in 1987 and commits parties to a reduction of CFC and halon emissions through controls on their production and use. These two chemicals have been determined to have the most damaging effects on the earth's protective ozone layer.

Two subsequent amendments to the Protocol (London, 1990 and Copenhagen, 1992) have resulted in the addition of new ozone-depleting chemicals to the controls regime and a quickening of the phase-out schedule for CFCs and halon.

Because Canada has been at the forefront of international activity to address the problem of ozone layer depletion it was all the more disturbing to learn that it can expect a 10% increase of UVA/UVB exposure because of our failure to take fast enough preventive and remedial action. This is not just an environmental and economic issue, it is a major health and social issue.

3.3 UN conferences

Various UN conferences are held each year, providing countries with opportunities to discuss issues of international concern and to reach conclusions on how to address them. Canada participates in many such

conferences and plays its fair part in developing and implementing the resultant action programs. But we should become more focussed and avoid new, expensive commitments that might detract from aggressively acting on existing priority conventions and protocols and moving on key forestry, oceans and fishery objectives. Moreover, Canada should ensure that future conferences are less narrow and sectorally oriented while becoming more integrative and holistic – the cornerstones of sustainability.

Integrating environment and development in future international law instruments is the post-Rio challenge for governments and institutions around the world.

– Document and Information Committee, *Assessment of Agenda 21*, 1993

Population and Development

The International Conference on Population and Development (ICPD) was held in Cairo in September 1994, following two previous population conferences held in 1974 and 1984. In preparation for the conference, representatives of 160 countries were involved in negotiations on a comprehensive, 20-year Programme of Action to address issues that have an immediate impact on population growth. These included sustainable economic growth, sustainable development, gender equality and empowerment, reproductive health care, over-consumption issues (Box 57), female and infant mortality, and internal and international migration.

Like most OECD countries, but unlike the majority of Third World countries, Canada does not have a national population policy. Canadians do not perceive any "population problem" despite the highest population growth of any OECD country and concerns that we have already surpassed a sustainable population/consumption level. Accordingly, Canada has only addressed population, demographic and comsumption issues in an *ad hoc*, piece meal and inconsistent way.

Habitat II

The 1976 UN Conference on Human Settlements (Habitat I) was hosted by Canada in Vancouver. The UN has decided to hold Habitat II on the 20th anniversary, 1996, in Turkey. The conference will adopt a general statement of principles and commitments and a related global plan of action. The themes of Habitat II are sustainable human settlement development in an urbanizing world and adequate shelter for all. To date the themes do not adequately address environmental issues, such as the exploding mega-cities along the coasts of many countries and their impacts on coasts, marine environments and the marine food chain.

The process leading to the conference will be firmly rooted at the national level and will involve a wide array of actors. Each participating country must produce a national report that incorporates the conclusions of the consultative process and includes national housing indicators and a plan of action.

Canada Mortgage and Housing Corporation, our lead federal agency for this process, is co-ordinating Canada's domestic participation. A broad-based consultation group, including all levels of government, the private sector, NGOs and the academic community, has been set up to this end. Expert consultations have been taking place so as to provide research and inputs into pre-conference deliberations and the Canadian delegation.

Social Development

A UN World Summit for Social Development was held in Copenhagen in March 1995. The aim of the summit was to focus attention on the global social development crisis and to agree on a number of concerted national and international initiatives to address it. The summit concentrated on three core issues: the enhancement of social integration, particularly of the more disadvantaged and marginalized groups; alleviation and reduction of poverty; and expansion of productive employment. Global concerns, as well as integrative and cross-cutting themes, were also to be taken into account. Overall the summit failed to take a real "sustainability" approach to issues and tended to ignore the environmental dimensions.

Debt relief can be an important aspect of freeing up funds for sustainable development.

– *Report of Canada to the United Nations Commission on Sustainable Development*, 1994

3.4 Economic institutions

Achieving an integration of environment and economy will require a major Canadian effort to make the world's international economic institutions more ecologically sensitive in their legal mandates, internal procedures, professional awareness and capabilities, and work programs.

This means continuing Canada's recent efforts to "green" the International Monetary Fund, the International Bank for Reconstruction and Development, the regional development banks (notably the Caribbean Development Bank where Canada is a leading donor), new bodies such as the Bank for European Reconstruction and Development, and older entities such as the Commonwealth Fund for Technical Cooperation.

Above all, it means forging an improved environment-economy link in those global bodies that govern the world trade system and that provide high level political guidance to the global economic system as a whole. Canada will be in a stronger position to urge reform once it has reformed or "greened" its own domestic and national institutions.

G-7/G-8

The G-7/G-8 system consists of the annual Summit of leaders of the world's major market democracies (with Russia participating in the political agenda); regular G-7 ministerial level forums for trade, foreign policy, and finance; and newer G-7 ministerial level forums for environment and for employment. In recent years, the G-7 Summit has provided only fragmentary discussion of environmental issues and direction on managing the trade-environment linkage. In large part this is because most leaders still treat environmental and social issues as peripheral to economic issues.

Heads of state will have to devote more serious attention to environmental matters in the future at the annual Summits. This could include the institutionalization of the environment ministers' forum, a joint work

Greenhouse gas emissions of various industrialized countries in 1990

United States	20.0	EEC	9.1
Canada	16.4	Japan	8.6
Australia	15.9	Italy	7.1
Germany	12.4	Sweden	6.5
United Kingdom	10.4		

(tonnes of CO_2 per person according to IEA, 1993)

program, and dialogue among G-7 environment, trade and finance ministers on issues of mutual interest. As Canada will be hosting the 1995 G-7 meeting in June in Halifax, it has a unique opportunity to forward these objectives.

OECD

The Organization for Economic Cooperation and Development has a long history of dealing with environmental concerns. Because of its interdisciplinary and consensus-oriented character, it is well placed to explore the many facets of the relationship between trade and the environment.

A Joint Session was formed in early 1991 by the Trade Committee and the Environment Policy Committee, with a mandate to contribute to improving the integration of trade and environment policies. In June 1993, the Council at the Ministerial Level endorsed the Joint Expert's procedural Guidelines for improving the Mutual Supportiveness of Trade and Environmental Policies and Agreements, and approved a further work program of ten substantive items:

- methodologies for conducting environmental and trade reviews of policies and agreements;
- the effects of trade liberalization on the environment;
- process and production methods;
- the use of trade measures for environmental purposes;
- life-cycle management and trade;
- harmonization of standards;
- trade and environmental principles and concepts;
- economic instruments, environmental subsidies and trade;
- environmental policies, investment and trade; and
- dispute settlement.

The OECD has the further advantage of being the first influential international economic organization to allow NGOs to attend as observers. The participation of NGOs has been left up to the national delegations to control, and currently only the United States and Austrian governments have included NGOs as members of their delegations. Increased access to information and participation by the relevant constituencies is absolutely necessary in the promotion of sustainable development, and the resolution of difficult issues such as those surrounding trade and environment.

GATT and the WTO

The results of the recent Uruguay Round of Multilateral Trade Negotiations are an important step toward recognizing and

BOX 5.7

Consumption patterns of developed and developing countries

Products	Year	% share in world Dvlpd	Dvplg	Per capita consumption (kg) Dvlpd	Dvplg	Ratio Dvlpd/ dvplg
Cereals	1987	47.6	52.4	716.7	246.6	2.9
Milk	1987	71.7	28.3	319.5	39.4	8.1
Meat	1987	63.8	36.2	60.6	10.7	5.7
Round wood	1988	45.5	54.5	887.6	338.6	2.6
Sawn wood	1988	77.9	22.1	213.2	19.2	11.1
Paper & paperboard	1988	81.3	18.7	147.8	10.6	13.9
Fertilizers	1987	59.6	40.4	70.1	14.8	4.7
Cement	1987	52.0	48.0	450.9	129.6	3.5
Copper	1987	85.5	14.5	7.4	0.4	20.6
Iron & steel	1987	80.2	19.8	469.3	36.1	13.0
Aluminium	1987	85.6	14.4	15.5	0.8	19.1
Inorganic chemicals	1983-85	87.1	12.9	162.5	8.0	20.3
Organic chemicals	1983-85	84.8	15.2	274.1	16.4	16.7
Cars (per unit)	1986	91.5	8.5	0.283	0.012	23.6

Source: Report prepared for UNCED by the Indira Gandhi Institute of Development and Research, Bombay.

In 1991, Canada generated about 5,800 kg of hazardous waste for each million US$ of GDP... while Japan generated only 226 kg per million US$ of GDP.

incorporating environmental concerns, compared with the previous General Agreement on Tariffs and Trade regime. In contrast to that regime, the 1993 agreement devotes direct attention to environmental considerations in several areas: the new World Trade Organization, agriculture, sanitary and phytosanitary measures, technical barriers, subsidies, dispute settlement, and the Working Party on Trade in Services.

The new WTO will build on the work done by the former Working Group on Environmental Measures and International Trade, through a new Trade and Environment Committee. Analysis will focus on the relationship of environmental measures with trade effects (such as packaging, labelling, recycling programs and environmental taxes) to trade rules, trade measures for environmental purposes, provisions for transparency, dispute settlement, and market access issues. The Committee's mandate allows it to deal with all GATT/WTO trade and environment issues, including those related to goods, services and intellectual property. The Committee's status and work program will be reviewed in 1996.

The GATT/WTO are at a severe disadvantage from the perspective of sustainable development because of their tendency to be dominated by trade policy experts to the exclusion of environmental and social inputs. Rather than allowing NGOs to participate in GATT meetings, apart from a recent Secretariat-hosted conference, the GATT expects national delegations to consult at home and incorporate any relevant environmental or social perspectives into national positions. Some observers note that GATT has not been successful in incorporating either social or environmental concerns into its deliberations due to this mechanism.

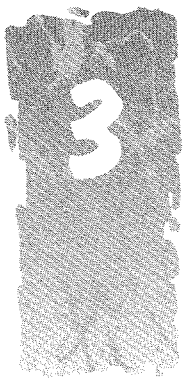
The creation of the new WTO provides an opportunity to remedy this situation. Canada should promote the importance of sustainable development in key trade disputes and mediations and help build a WTO that also addresses environmental and social considerations. More attention needs to be focussed on the trade implications of environmental agreements.

NAFTA, NAAEC and CEC

Although not an issue until the very end of the 1988 debates on the Canada-US Free Trade Agreement, the environment was on the agenda by the time the North American Free Trade Agreement (NAFTA) was being negotiated. NAFTA is the first major trade agreement to address environmental issues directly, or indeed to identify the promotion of sustainable development as one of its core concerns.

NAFTA's preamble includes sustainable development as a primary objective of the Agreement, with a broad exception for specific trade obligations set out in some international and bilateral and conservation agreements. Two sections on standards protect the rights of governments to determine the level of environmental protection that they consider appropriate; and a chapter on investment contains an important provision that would formally discourage a government from lowering its own environmental standards for the purpose of encouraging investment and creating a pollution haven. Provisions related to dispute settlement also make it more environmentally sensitive.

Passage of NAFTA in the United States was conditional on the successful negotiation of a "side deal" to protect the North American environment from any negative effects of trade liberalization. During the spring and summer of 1993, the governments of



Canada, the United States and Mexico negotiated the details of a North American Agreement on Environmental Cooperation (NAAEC). Among other things, it established the Commission on Environmental Cooperation (CEC), a new institution to oversee and strengthen cooperation on the development and continuing improvement of environmental laws and regulations in the three countries. Canada could encourage the move towards a sustainable development law, which is an advanced step from natural resource law (exploitative) and environmental law (mitigative).

The CEC comprises a Ministerial level Council, a central Secretariat and a Joint Public Advisory Committee (JPAC). The Council will oversee the implementation of the Agreement, serve as a forum to discuss environmental matters, address questions and disputes arising from the Agreement, and work to improve environmental laws and regulations. The JPAC comprises five non-governmental representatives of each country and will advise the Council of Ministers. Public participation will be an important characteristic of the NACEC and the Secretariat (located in Montreal) will be available to members of the public wishing to file complaints.

The CEC could provide an interesting model for the new WTO. Indeed, the flexibility of the CEC and its capacity to adapt to expanding membership to include NGOs, women and indigenous peoples, might well be tested in coming years.

3.5 Learning from other countries

Many countries have had extensive experience with various kinds of conservation and sustainability planning initiatives, and Canada could learn something from their experiences.

In 1984, the International Union for the Conservation of Nature (IUCN) published a framework for preparing National Conservation Strategies based on its *World Conservation Strategy*. Toward the end of the 1980s, a few countries began to work on national environmental policy plans, and the World Bank started to fund National Environmental Action Plans, notably in African countries. The OECD released guidelines for country environmental surveys and strategies in 1992, but it was not until the agreements at UNCED that many countries started to work on national sustainable development strategies. Unlike the participatory approach of Canada's *Projet de société*, most NSDSs are government-led and the assumption is that they will be integrated with official processes of environment and development policy making.

In addition to the Netherlands, the United Kingdom, Sweden and Australia, whose NSDSs have already been published and distributed, countries like New Zealand and Norway are also making progress. Others are moving forward in this direction but have not yet published accessible reports at the national level. The United States has made substantial and often innovative progress at the state and municipal levels, but federal or national strategies for sustainable development have yet to be published. Other countries have made significant progress with various components of a sustainable development strategy, such as Switzerland's work on a national strategy to control global warming.

United Kingdom

In 1990, the United Kingdom published a comprehensive strategy on the environment, *This Common Inheritance*, which has been updated annually and was complemented in 1994 by the publication

Between 1970 and 1985, the number of motor vehicles in Canada increased by 70%...compared to a 22% increase in the population of Canada.

of several post-Rio reports. These include *Sustainable Development: The UK Strategy*, which notes that effective national strategies containing real commitments, targets and substantive measures to achieve them are essential. The UK Strategy benefited from broad consultation during the preparation phase. Although it "is the Government's strategy," it does identify the role that will need to be played by other bodies, seeks their active participation, and finds that "the decisions, choices and behaviour of individuals in their homes and working lives are perhaps the most significant of all."

The UK Strategy acknowledges that "judgments have to be made" and that "the planning system... has been a powerful instrument for protecting those aspects of the environment whose value is not adequately reflected through a free market." Four specific principles are identified as necessary for facilitating collective action on sustainable development:

- decisions must be based on the best scientific information and analysis of risks;
- when uncertain, precautionary action may be necessary to reduce potentially serious risks;
- priority should be given to the ecological impact of using non-renewable resources and to the problem of irreversible effects;
- the "polluter pays principle," bringing cost implications home to the people responsible, should apply.

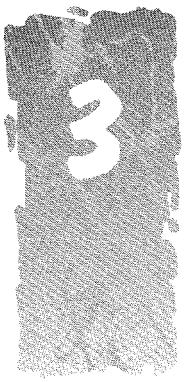
The Netherlands

Another approach was taken in the Netherlands, which started planning for sustainable development even earlier than the United Kingdom. Because a new law was usually passed for each environmental problem that arose, the Dutch had some 35 environmental laws by the beginning of the 1980s. Policy makers concluded that this fragmentation had proved counterproductive and in the mid-1980s they decided to abandon the sectoral approach in favour of an integrated approach to managing environmental problems. This enabled those involved to focus their attention on sources of pollution, rather than their multiple effects. It also helped to prevent solutions developed for one sector from causing unforeseen problems in another.

After the publication in 1989 of the first integrated survey of the state of the Dutch environment, *Concern for Tomorrow*, the Dutch Ministry of Housing, Physical Planning and Environment released *To Choose or to Lose: National Environmental Policy Plan* (NEPP), which was signed by four ministers, including the Minister of Economic Affairs.

NEPP adopted a target group approach, including agriculture, transportation, industry, energy, refineries, construction, waste utilities, consumers and retail distribution. This approach facilitated tailor-made solutions but also involved some painful choices. It led to a change in the relationship between the federal and other levels of government. Local authorities became involved much more and at a much earlier stage in drawing up policies they would actually put into practice. This arrangement was undoubtedly easier to manage in a small, homogeneous country "used to consultation and joint planning."

NEPP was a policy document setting out basic principles and approaches, whereas its legislated revision, *NEPP 2 – The environment: Today's touchstone*, emphasized the implementation of environmental policy. Signed by five ministers in December 1993, it has accelerated the shift from top-down regulation to self-regulation, including voluntary agreements or covenants that



have already been signed with the printing and packaging, base metals and chemical industries.

The Dutch strategy proposes to achieve sustainable development "within one generation" by making substantial use of quantified targets and time frames to measure progress and by changing the way decisions are made. It also emphasizes the need to identify responsibility for incorporating creativity into the design and use of policy instruments, and to reshape socio-economic structures. It recognizes that the Netherlands is dependent on international cooperation and action.

An innovative aspect of this "ecoscope approach" has been further developed by the Dutch Friends of the Earth, whose *Action Plan Sustainable Netherlands* outlines the "environmental space" morally available to Dutch citizens now and in the future. Another Dutch initiative, the "Ecooperation" program has resulted in the recent signing of Bilateral Sustainable Development Agreements with Bhutan, Benin and Costa Rica. Stressing equality and reciprocity, the agreements facilitate a cooperative process linking Dutch trading practices and foreign policy to its domestic sustainable development strategy.

Australia

Australia published its *National Strategy for Ecologically Sustainable Development* in the wake of the Earth Summit in 1992. It states, among other requirements, that all government departments and agencies must report annually on the extent to which their actions have met ecologically sustainable development guidelines, and they have integrated economic, social and environmental considerations into their charters and corporate plans.

All levels of government are called upon to work toward the introduction of pricing and charging structures that adequately reflect the full economic and environmental costs of waste disposal and ensure that taxation regimes foster sound environmental practices. An original feature of the Australian report is the way in which it outlines not only the challenges and objectives of over 30 sectoral, intersectoral and other issues, but also provides a strategic approach for each of these issues.

4

Choices for the future

Breaks with the past by focussing on choices for the future using basic human needs rather than sectoral interests.

Takes an integrated approach that helps to bring various stakeholders together in a functional way.

Encourages people to consider a variety of choices and their consequences in a fair way, weighing the pros and cons themselves and beginning to accept the difficult tradeoffs involved.

4

Each section of this chapter starts with an overarching goal of sustainable development that most stakeholders will readily agree with. There are, however, many views within society – and thus the *Projet de société* – on how to reach these goals. That is why this is not a traditional strategy but rather a guide that outlines some of the choices that we should make before they are made for us.

The "Choicework Tables" that appear in this chapter are designed to help people consider the consequences and comparative advantages of a variety of choices. A few choices are illustrated for each goal, but space is left to encourage readers to work through this section and fill in some of their own choices and corresponding consequences (see Box 58 for an explanation of "choicework").

Far from being comprehensive or definitive, this chapter is designed to provoke discussion by challenging conventional wisdom and opening up new perspectives. The Choicework Tables illustrated below are not static, but rather are meant to evolve in both their form and substance as stakeholders adopt and adapt them to their own constituencies.

Instead of selling the public on pre-packaged policy positions, engaging the public draws people into the process of deliberation and policy formation. Instead of top-down communication, there is a complex process of debate, discussion and interaction between public and leaders.

– Yankelovich and Immerwahr, 1994

In order to increase the chances of reaching more innovative solutions, the "blinders" of sectoral bias have been reduced by organizing this chapter around basic human needs. By adopting a sectoral approach to sustainable development, one might easily revert to the traditional perspectives that reflect the 20th century mandates of our educational systems, many resource industries and most government departments and agencies. Many longstanding employees will act as if their jobs depend on maintaining the status quo, not realizing that only by evolving into 21st century institutions and businesses will their livelihoods, families and communities be protected.

This emphasis on basic human needs should not be interpreted as ignoring the claims of other species to their share of the Earth's carrying capacity. The unprecedented impact of the human species on the planet's resources, however, demands that we focus on the greatest threat to sustainability for all: human beings, particularly those who consume high levels of material goods.

Although the basic needs approach suffers from overlap, it has the advantage of treating issues in an interdisciplinary way that helps to bring various stakeholders together in a functional way. Energy, for example, is a major component of a Canadian lifestyle, but Canadians are not interested in energy *per se*. They are concerned about services like heat, light and mobility.

Box 58

Choicework

Sorting out choices, weighing their pros and cons, and beginning to make the difficult trade-offs is called "choicework" to connote both the process of wrestling with choices and the fact that this is a very arduous task for the public and even for many experts. To encourage people to think in a new way, to work things through and to open up other perspectives for integrated decision making, they must be involved in weighing alternatives and considering the consequences of various courses of action. Using debate and dialogue to discover, not just to persuade or advocate, choicework also involves identifying and overcoming the obstacles to implementing the choices that have been made.

Some stakeholders believe, for example, that electricity utilities or bus companies will not be part of the solution until they are integrated into energy servicing or mobility consortia that are not constrained by outdated regulatory agencies or protected by closed markets and institutional forces.

The following Choicework Tables lay the groundwork for a more valuable, time-consuming phase, that of involving, engaging and thus empowering all stakeholders involved. In contrast to the public relations approach, which seeks to engineer consent by persuading people that the expert's choice is the right one, choicework seeks to ensure that all choices and their consequences are presented fairly so that people can make up their own minds. Needless to say, this is a crucial step when it comes to implementing such choices because people will be more prepared for the changes involved.

In order to make it easier for people to come to grips with hard choices, this approach emphasizes the values implicit in choicework rather than the technical considerations involved. They do not try to quantify either the timing or financial aspects of each choice, and instead use a relative scale, which avoids the problems of numbers which do not reflect social or environmental costs.

In an expanded computerized version based on the results of an outreach program, more detailed information on each choice could be found in accompanying charts or brought up on to the screen. Software could also be developed to show the potential of each choice, or combination of choices, to contribute to sustainability in both the short and long terms. More sophisticated systems could even be developed to estimate the effect of each choice on prices, taxes or other choices.

GOAL 1

Ensure that Canadians always have safe air to breathe while maintaining socio-economic activities that do not threaten global climate security.

The Choicework Tables could also be used to identify areas of conflict and levels of consensus in order to show where immediate progress can be made and where more consensus building is needed. This could also lead to a preliminary analysis of the gaps in existing work, including implications of transition strategies for specific decision makers.

An attempt at using choicework was made in 1994 by Canada's Climate Change Task Group, which compiled a catalogue of 76 measures that include basic information on jurisdiction, type of measure, readiness to implement, estimated impact and degree of stakeholder support (Table 1). Although much of the information provided was subjective because formal positions could not be taken until costs and benefits were identified, it clearly shows how a complex subject can be presented in a way that is conducive to reasoned public consideration.

4.1 Air

Many air quality problems have been reduced at the local level in Canada, partly because technological fixes, such as unleaded gasoline and smokestack scrubbers, have been introduced in response to the direct impacts and highly visible nature of "traditional" forms of air pollution. The indirect risks and lower visibility of CO_2, however, have contributed to dramatic increases in this and other greenhouse gases.

Using a gasoline-powered lawnmower for one hour can generate more air pollution than driving 350 km in a new car.

Choicework: Mitigation measures for Canada's national program on climate change

	Juristiction					Type			Ready		Impact		Support		
	Fed	Pro	Mun	Uti	Pri	Vol	Reg	Eco	Imm	Lng	Imm	Grd	Hi	Lo	?
1. Residential															
National New Building Initiative															
National Building Energy Efficiency		•	•				•		•			•	•		
Energy Efficient Mortgages	•							•	•			•	•		
National Home Energy Rating System	•	•		•		•			•			•	•		
National Building Training Program	•	•				•			•			•	•		
National Retrofit Initiative															
Low Income Efficiency Retrofit Program	•				•			•	•			•	•		
Building Retrofit Standards	•			•	•		•		•		•		•		
Enhanced Financing Mechanisms	•				•			•	•		•		•		
Home Energy Rating Systems	•					•			•		•		•		
Green Communities Program	•					•			•		•		•		
Renovation/Retrofit Training	•					•			•			•	•		
2. Commercial															
Accelerate District Heating	•		•					•	•			•	•		
National New Buildings Initiative															
Energy Code for Buildings		•	•	•	•		•		•			•	•		
EE Mortgages	•				•			•	•			•	•		
Training for Professionals	•					•			•			•	•		
National Retrofit Initiative															
Building Retrofit Standards	•				•		•		•		•		•		
Financing Mechanisms	•				•			•	•		•		•		
Retrofit Training Program	•					•			•			•	•		
Federal Building Initiative Expansion	•				•	•			•		•		•		
Energy Innovator Expansion	•					•			•		•		•		
3. Industrial															
Efficiency Indicators	•					•			•		•		•		
Benchmarking/Best Practices	•					•			•			•	•		
Energy Innovators Program	•					•			•		•		•		
Electric Drivepower Challenge	•					•			•		•	•	•		
Boiler and Kiln Efficiency Standards	•					•			•			•	•		
Tax Incentives for EE Investments	•	•						•	•		•				•
4. Appliances and Equipment															
Standards	•	•					•		•		•		•		
Labelling	•	•		•		•	•		•		•		•		
Golden Carrot Program	•			•				•	•			•			•
5. Transportation															
National Green Transportation Strategy	•	•	•				•	•		•	•				•
Vehicle Efficiency															
National I/M Program		•					•		•		•		•		
Gas Guzzler Tax		•						•	•			•		•	
National Feebate Program	•	•						•	•			•		•	
Vehicle Scrappage		•						•	•			•			•
Fuel Efficiency Premium		•						•	•		•			•	
Fleet Procurement and Management Program	•					•			•			•	•		
Improve Fuel Economy Standards	•						•		•		•			•	
Gasoline Tax/Price Increase	•	•						•	•		•			•	
Incentives for Alternative Transport	•							•	•			•			•
Vehicle Emissions Labelling	•					•					•				•
Advanced Vehicle R&D	•					•			•			•	•		

Table 1 continued

Choicework: Mitigation measures for Canada's national program on climate change

	Jurisdiction					Type			Ready		Impact		Support		
	Fed	Pro	Mun	Uti	Pri	Vol	Reg	Eco	Imm	Lng	Imm	Grd	Hi	Lo	?
Urban Transport															
Increased Urban Density			•			•				•		•	•		
Telecommuting and Alternate Work	•	•	•			•			•		•		•		
Cycling and Walking			•			•				•		•	•		
Increase Transit Ridership	•	•				•		•		•		•	•		
Ridesharing		•				•		•	•		•		•		
Full-cost Road Pricing		•						•		•		•	•		
Full-cost Parking			•					•	•		•		•		
Inter-City Transport															
High Speed Rail	•	•						•		•		•			•
Passenger/Freight Competitiveness	•	•					•	•	•			•			•
Regulate Highway Speeds		•					•		•		•				•
6. Energy Supply and Production															
Electric Utilities															
Electric Utility Challenge Program	•			•		•			•		•		•		
Integrated Resource Planning		•		•		•	•		•			•		•	
Utility Efficiency Improvements				•		•			•		•		•		
Demand Side Management				•		•			•		•		•		
Electricity and Heat Co-generation				•		•				•		•	•		
Generation Fuel Switching				•		•				•		•		•	
Availability of Existing Nuclear and Hydro				•		•			•		•			•	
Non-utility Generation		•		•		•			•		•			•	
New Low Emission Generation				•		•			•			•		•	
Oil and Gas															
CO_2 Reduction Upstream Oil and Gas		•			•	•			•		•		•		
CH_4 Upstream Oil and Gas	•	•			•	•			•		•		•		
CH_4 Reduction Downstream Gas	•			•		•				•	•		•		
IRP for Gas Utilities		•		•		•			•			•	•		
Renewable Energy															
Renewables Government Policies	•	•				•			•			•			•
Renewables Market Stimulation	•	•				•			•			•			•
Renewable Infrastructure	•	•				•			•			•			•
Renewable Utility Adoption		•		•		•	•		•			•			•
Increased R&D	•							•	•			•			•
7. Non-Energy Sources and Sinks															
Industrial															
Landfill Methane	•	•	•			•			•		•				•
Coal Mine methane	•	•			•	•			•			•			•
Ozone Dep Substances HFCs	•					•	•			•		•			•
Aluminum PFC	•	•			•	•			•			•			•
Adipic Acid					•	•			•		•		•		
CO_2 Utilization	•	•				•				•		•			•
Forestry															
Tree Planting and Urban Forestry	•					•			•			•		•	
Wood Products Substitution	•					•				•		•			•

In many parts of southern Canada, for example, too much ground level ozone – the main component of urban smog – has prompted officials to advise people to stay indoors on certain days. Despite the danger that climate change poses for plant and animal communities that may not be able to adapt quickly enough, however, attention remains focussed on threats to food production for human needs.

Although Canada is committed to fighting climate change, most policies, programs and prices continue to favour inefficient transportation systems, energy-intensive industries and other processes that generate unnecessary levels of greenhouse gases. For some people, however, this raises the question of what countries, if not Canada, would have energy-intensive industries and where would their markets be?

Fortunately, the problems of global warming and ozone depletion are hitting home much sooner than expected. Colder winters and hotter summers may not yet be proven to be direct results of climate change, but there is agreement that decreases in stratospheric ozone levels lead to increased skin cancer and other problems. Although ozone-depleting substances have received more focussed attention, most of it has also been based on technological fixes that do not address the more fundamental issues of consumption patterns and human numbers.

GOAL 2

Provide access to potable water and economical supplies of water for other purposes while maintaining the integrity of our aquatic ecosystems for other uses and species.

Because of the international implications of protecting the earth's atmosphere, Canada has made numerous commitments to reduce its contribution to this problem and to help other countries do likewise. These commitments, if honoured, would result in more sustainable economies in Canada and also respect our moral obligations to future generations and people living in more vulnerable regions of the world.

This provides additional arguments for invoking federal responsibilities to address air quality problems in Canada, which are primarily linked to the inefficient and inequitable use of energy but also result from out-dated industrial processes and wasteful consumer habits in North America.

Because air quality issues have rarely been considered in relation to economic forces, and consumers are only now beginning to pay for water costs, most would laugh at the thought of having to pay for air. But air quality is becoming a marketable value as air pollution levels continue to cause environmental problems, such as freshwater fish and forest dieback, and health problems caused by indoor air pollution.

Increasing the prices of commodities that contribute to air pollution (such as energy, tobacco and VOCs) to reflect more of their economic, environmental and social costs would ensure more sustainable development and reduce health care costs. The challenge, however, is to move not only our economy towards full cost pricing but also the economies of our major trading partners.

4.2 Fresh and salt water

Because many of the real costs of consuming fresh water and disposing of polluted water in Canada are hidden in property and other taxes, or are simply not being paid, Canadians are among the largest per capita water wasters in the world. The most undervalued function of water is its role in the hydrological cycle which keeps our forests, farms and aquatic ecosystems healthy or causes erosion and carries pollution, depending on how it is managed.

Consumers would be encouraged to use water resources in a way that would better serve all sectors of society if full-cost accounting were applied to water and thus hydrological systems, such as the wetlands that purify water naturally and the aquifers that store it.

Like many other resources, however, water has suffered from being managed by a specialized profession, which has concentrated on the quality and quantity of the water itself rather than on the ecological, industrial and social systems that it supports. This often results in a capital-intensive approach to water treatment and sanitation rather than a knowledge-intensive approach that includes prevention and working with natural processes instead of replacing them with artificial ones, such as large reservoirs and dams.

Canada's considerable experience in the development of hydro-electricity is used around the world, but most environmental impact assessments of such projects rarely address the more fundamental social and economic issues involved in protecting rural societies from the excessive demands of those living in urban areas or the need for electricity in the first place.

In addition to our generous freshwater heritage, Canada also has the longest coastline in the world, but it has yet to benefit from effective coastal zone management programs. Many Canadian communities depend on marine resources and coastal ecosystems for their economic survival and cultural traditions. This goes far beyond the traditional fisheries to include aquaculture, tourism, recreation and transportation as well as offshore mining and energy resources.

Municipal networks supply the majority of Canadians with their water...but in 1991, this sector accounted for only 11.3% of all water withdrawn in the country.

Unfortunately, the coastal and marine environment continues to be degraded by a variety of land-based activities, which are responsible for 70% of the pollutants in the ocean. These include sewage, sediments, plastic, metals, pesticides and other chemicals generated by agriculture, human settlements and industry. Reduced or altered flows of water and nutrients caused by large dams can also have dramatic effects on coastal ecosystems, particularly fish stocks.

Marine sources of pollution include normal shipping operations, accidents and illegal dumping. Habitat destruction and over-fishing result in ecosystem imbalances (including loss of aquatic biodiversity) that cause considerable harm to marine resources and the coastal communities that depend on them.

Canadians need to make careful choices about how to protect these essential resources that all too often fall victim to the tragedy of the commons. However, as shown by the recent dispute with the European Union over the management of straddling groundfish stocks on the Grand Banks, Canadian initiatives in this field also have the potential of improving resource management in other parts of the world.

Fresh water

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Remove GST and PST from water conservation equipment and services	months years x	$	$ e s	Minor encouragement of water conservation	Plumbers, retailers	F P	?
Change building codes to ensure individual or unit metering of water consumption	months decades xxx	$ ss	$$ eeee sss	Would reduce consumption of water and ensure fairer distribution of costs	Plumbers, property managers	F P M	?
Open sewage treatment and water supply markets to well-regulated private companies	months decades xxxxxx	$ e ss	$$$ eeee sss	Would internalize costs into market economy and ensure better management of resources	Waste treatment, fertilizer and water companies	F P M B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

Salt water

Some examples of choices that could be considered	Timing: Duration / Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Establish conservation areas in all 29 marine regions	years decades xx	$$ s	$$ ee ss	Increased long-term production levels at expense of short-term fishing interests	Fishing communities, tourism industry	F P B C	?
Enforce regulation of quotas and techniques in all fishing areas	months decades xxx	$ e s	$$$ eee sss	Increased tension with other fishing fleets	DFAIT and other countries	F P B C	?
Convert fisheries industry from resource mining to sustainable harvesting methods	years decades xxxxx	$$ e ss	$$$$ eeee ssss	Higher long-term employment levels and conservation of resources	Fishing communities	F P B	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

4.3 Food

Farmers are under increasing pressure to deal with unfair trade practices, land degradation, air and water pollution, urban sprawl, uncertain commodity prices, inequitable financing, agribusiness concentration and declining rural communities. Yet the largest shift in household expenditures between 1969 and 1992 in Canada was from spending on food, which declined by 6.3 percentage points, to personal taxes, which increased by 7.5 percentage points.

GOAL 3

Ensure a sustainable system of food production, distribution, processing, consumption and recycling that promotes healthy diets and strong economies, both at home and around the world.

Various forms of subsidies, policies and practices contribute to these problems by skewing the behaviour of players in the food chain. Direct subsidies, such as farm income safety nets and fuel excise tax exemptions, are giving way to indirect subsidies such as inspection, regulation, marketing, and research provided by government, as well as supply management pricing, and energy prices that do not reflect environmental and social costs.

The gradual removal or attenuation of these subsidies could improve the sustainability of the food supply system by encouraging less intensive use of land and increasing the value of local resources for inputs. Higher prices for fuel and chemical inputs would encourage the adoption of alternatives such as minimum tillage, integrated pest management and fertilizing with processed sewage and agricultural wastes, but may bring fragile land into production to maintain output.

Full-cost pricing of irrigation and drainage systems could remove some marginal land out of annual crop production and into permanent cover or wildlife habitat. Full-cost transportation pricing would make foods imported from distant sources less competitive with locally produced, stored and processed products, helping to maintain the value of suburban land for farming and to sustain local jobs and rural communities.

Improving the sustainability of the food system also involves changing the processing, distribution, retail and food service industries that are dependent on low energy prices and subsidized waste disposal. Using agricultural and food processing wastes to produce industrial products, such as fuel ethanol and fibres, would improve the overall economic viability of sustainable agriculture.

A more sustainable food system would also focus on the potential for reducing health care costs through improved diets, notably by increasing the consumption of high-fibre, unprocessed food as well as low-fat foods. Family or community-share enterprises producing crops, livestock, fish or game for home or local use could also contribute to a more sustainable food system.

As the collapse of the Atlantic cod fishery attests, reliance on management programs based on maximizing yields can fail. More effort is thus needed to cultivate fish stocks, protect marine biodiversity, and prevent damage and waste from fishing methods and equipment. In addition, regenerative fishery policies and programs that go beyond aquaculture are needed to restore natural fishing capacities and communities.

As a major exporter of food, Canada should also help ensure that international food

Food

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Revise Canada Food Grades to relax visual criteria unrelated to safety issues	months years x	$	$ eee sss	Enables more organic produce to receive Grade A labels; reduces rejects and waste	Small farmers, consumers	F P B	?
Facilitate use of composted sewage and organic residues as fertilizer	years decades xxx	$$ e ss	$$$ eeee sss	Would reduce waste management problems and improve soil fertility	Farmers, municipal services	F P M	?
Reverse decline of household expenditures on food	years decades xxxxxx	$$ ee ss	$$$ eeee sss	Would see people spend more income on food and less on other commodities and services	Farming communities, local business	F P M B	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

markets are gradually replaced by more sustainable local systems that recognize the global limits to consumption levels and human numbers. This would include ensuring that exporting nations do not use deleterious and unsafe production methods to cut food costs and prices, and helping importing countries to increase their productivity in order to become more self-reliant.

4.4 Habitat: Human and natural

Canada is one of the most urbanized countries in the world, with 76% of its population living in cities and towns. But our human settlements have an "ecological footprint" that extends far beyond their physical boundaries. They are the primary consumers of raw materials and users of natural capital from all over Canada and the world. Our human settlements also produce many waste products that are re-introduced to the environment, with detrimental effects on nature and the future of humankind.

The impact of the way Canadians live on the future of other people and species around the world is even more troubling. Data on global consumption patterns indicate that the average Canadian consumes over 20 times as much aluminum and copper as the average citizen of a less developed country, and well over 10 times as much wood and paper products.

As inequitable and unsustainable as this is in our increasingly global village, it pales in comparison to the impact on other species, which are being destroyed at unprecedented rates in order to maintain existing consumption levels by expanding into new markets.

GOAL 4

Provide adequate **shelter** and a sense of community for all Canadians while conserving the **natural habitat** upon which people and all other species depend.

Although the exploitation of our natural resources has contributed until now to our economic prosperity, we are rapidly depleting our natural capital, driven by the desire to increase our standard of living. In addition to changing our own consumption patterns, we must also work to ensure that our neighbours and other countries also respect sustainability.

Households are the basic social unit in Canadian society, and the livability of our homes is an important determinant of our overall health and quality of life. Our homes are major consumers of natural resources in the building stage, of energy and water in the occupancy stage, and major generators of waste in the construction, renovation and demolition stages.

In fact, Canadians are the largest per capita consumers of energy and water, and the greatest producers of waste in the world. For the socio-economic benefits of housing to continue indefinitely, the residential sector will have to help ensure the sustainability of the resources on which it depends.

Sustainable community development is also essential. This involves urban and regional planning, particularly around such issues as energy and resource efficiency, quality of life, regulatory reform, more efficient urban infrastructure and healthier indoor living and working environments.

Development standards dictate the density, form and land-use mix of our communities and also define acceptable and unacceptable systems and technologies. But overly rigid standards and excessive regulation stifle innovation; thus the need for more

Human settlements

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Negotiate covenants with realtors and banks for lower mortgages on more sustainable housing	months years xx	$	$$ eeee sss	Increases market value of energy efficient houses near public transport	Realtors and banks, utilities	F P M B C	?
Revise building codes to promote greater use of wood and recycled wood products	months years+ xxx	$$ ee s	$$ eeee sssss	More use of wood as a carbon sink and higher employment in woodworking industry	Forestry workers, carpenters	F P M B	?
Invest in a national retrofit program to improve efficiency of housing stock	months years xxxxx	$$$$ ee	$$ eeee ssssss	Increased employment throughout the country and lower CO_2 emissions	Labour unions, unemployed people	F P M B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost, eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit, eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

Between 30 to 60% of urban land in Canada is used for highways, roads, driveways and parking lots.

Natural habitat

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Ensure that game ranches, aquaculture and similar facilities do not threaten native biodiversity	months years+ x	$$ ss	$ eeee ss	Places unfair burden on activities of rural residents	Hunters and wildlife groups	F P M B C	?
Focus on the protection of endangered species in Canada	years decades xxx	$$$ ss	$ eeeee ssss	Risks protecting only species of public or commercial interest	Naturalists	F P M B C	?
Expand the number and size of conservation areas under public and private control	years decades xxxxx	$$$ ss	$$ eeeee sss	Focus on habitat protection and conservation would receive broad public support	Wildlife groups, naturalists and local residents	F P M B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

flexibility in the approvals process without compromising health and safety.

Better use must also be made of the existing infrastructure. Economically productive communities must be planned so that they do not demand transportation systems that consume vast amounts of non-renewable resources and contribute to air pollution. Greater savings and more employment need to be achieved through investments in sustainable infrastructure programs such as combined heat and power, district heating and integrated commercial-residential developments designed to reduce the need for transportation.

Some scientists estimate that as much as 25% of the total number of species on Earth could vanish by the first decades of the next century. Of the species evaluated in Canada, 255 have been designated extinct, extirpated or under some threat of extinction.

– Draft Canadian Biodiversity Strategy, 1994

The development of sustainable human settlements depends upon meeting economic objectives and maintaining ecological integrity. It must also consider the importance of a variety of social factors, such as housing affordability and social equity. Communities must examine ways to plan and manage their operations to minimize impacts on the natural environment while enhancing the quality of life.

Loss of natural habitat has had the greatest impact on biodiversity, particularly in southern Canada. Many of Canada's endangered species (Box 59) are concentrated in three areas – southern British Columbia, the southern prairies and the Quebec City-Windsor corridor – all of which are characterized by intense development pressures. Conserving biodiversity in these areas will require the active participation and support of private landowners, building on existing stewardship efforts.

Achieving the goal of sustainable human and natural habitats will require new approaches, particularly during these times of fiscal restraint. Market forces and taxation will continue to influence our choices, but if we are to conserve Canada's natural capital, the interrelationships between sustainable housing, human settlements and the natural environment must be respected. The comprehensive nature of these problems calls for a systemic response, one that touches all levels and aspects of our human settlements and recognizes the many indirect consequences of our lifestyles.

Partnerships are the key to finding effective solutions that respond to changing community needs, and participation is also critical to the successful implementation of programs at the local level. Community-based groups can be particularly effective instruments for achieving sustainability at the municipal level, where most sustainable development will occur.

4.5 Human relationships

In addition to a healthy environment and a reasonable livelihood, human beings need other, less tangible things. The vision in Chapter One includes some of the very qualities that make us human: "respect, love, laughter, prayer, social contact, a sense of community, and opportunities to learn and grow in understanding."

Human relationships

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Shift indirect subsidies from cars to public transport, biking and walking	months years xx	$ s	$ eeeeee ssss	Encourages reduced use of cars and improves health through more exercise	Bicycle groups and public transport agencies	F P M C	?
Facilitate community and private child care close to workplaces	years decades xxx	$ ee	$ e ssssss	Acknowledges changing family patterns and invests in future generations	Single parents and daycare workers	F P M B C	?
Modify social contracts and legislation to enable shorter working weeks	months decades xxxx	$$$ e s	$$ ee sssss	Less stress and income for some but more employment and less stress for others	Unemployed and over-worked people	F P B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost: $** = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits: $$$$$$** = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

These needs, met for the most part through relationships with family, friends, colleagues and neighbours, are important pieces of the sustainable development picture. The presence in our society of poverty, violence, loneliness, mental illness, alcohol and drug abuse, suicide, stress, unhappiness, etc., are all factors that reduce our ability to be productive, to respect others and to feel fulfilled – they are significant deterrents to achieving a high quality of life.

GOAL 5

Ensure that people *respect* one another for their differences and human values and are able to reach their full potential without compromising the opportunities of others.

If sustainability is to be achieved, our current emphasis on *quantity* of material consumption will have to be replaced by a greater emphasis on achieving a high *quality* of life. Although few people would deny the importance of human relationships, many aspects of contemporary society make them increasingly difficult to enjoy.

We are living in an increasingly competitive world, one in which the pace of life, aided by technological developments, is getting faster and faster every day. By and large, our society is one that values competitiveness and individual success over co-operation and community mindedness. Many of the subtler human needs described above, which most people would like to achieve, are increasingly difficult to value openly, let alone achieve.

With jobs increasingly difficult to come by and to keep, the stress associated with employment is increasing. It is no doubt greatest for those out of work, but many are also affected by the fear of not knowing whether their job will last. Although physical working conditions have improved over time, employees are under more pressure to perform to a high level, to be innovative and to be more flexible.

With the number of well paid union jobs decreasing, and generally poorly paid service jobs increasing, many people need to work more hours in order to make ends meet. This not only leads to physical strain, but social strain on personal and family lives. In other cases, reduced staff sizes mean that individuals who do have jobs are asked to do more. This creates a situation in which many people have no work, while those with jobs are increasingly overworked.

This work-related stress is often compounded by the difficulties of raising a family without adequate support. Long working hours, single parent families and inadequate access to child care have all increased family stress. The faster pace of life has meant that family members spend less time together sharing experiences, showing understanding and passing on values. Inadequate care and support of children is a contributing fact or to social problems of crime, mental health, and violence.

FOCUS

Endangered wildlife in Canada, 1994

Category	Birds	Land mammals	Marine mammals	Fish	Plants	Amphibians, reptiles	Total
vulnerable	22	16	6	38	29	7	118
threatened	9	5	3	12	30	3	62
endangered	14	5	6	3	23	4	55
extirpated	1	3	2	2	2	1	11
extinct	3	1	1	4	–	–	9
Total	49	30	18	59	84	15	255

Functional family units, whether traditional or alternative, are important for education, social values, personal growth, financial support and reducing violence, but they can also contribute to other sustainability issues. In addition to the health costs associated with living alone, such as alcohol and other drug related problems, poor diets and lack of exercise, the increasing number of single-occupied dwellings (replete with all the amenities) threatens to erode any progress in improving the energy efficiency of appliances, cars and houses.

"Well off middle aged man willing to swop stress, forthcoming heart attack, rat race, lots of garbage and high cholesterol for peace of mind, togetherness, contemplation, love and time off. Sounds like a good deal, doesn't it?"

– Norwegian Advertising Agency, Sustainable Consumption Campaign

The nature of community has also been changing. Canada is becoming an increasingly urban society, as small rural villages and rural farms lose their economic viability and individuals are forced to move to cities to look for work. Suburban development has led to more physical and emotional comfort for some, but it has been an alienating experience for others. The use of automobiles and lack of community-based merchants has decreased contact with community members.

Access to educational opportunities is something that most people would like to have, but the cost of education continues to rise. Governments can no longer support the higher education that many have grown accustomed to in Canada. Perhaps even more serious is concern over the public school system at the primary and high school levels, where teachers are faced with larger class sizes, fewer in-class resources and increasing social problems.

The media has had an important role to play in our view of work, family and community life, but most significant has been its impact on increasing the demand for material consumption. Television has had a tremendous influence on North American society, and increasingly the world. Some corporate advertising and many television programs continue to promote unhealthy and unsustainable lifestyles that include tobacco addiction, alcohol dependency, reliance on processed foods and increased mobility.

4.6 Health

Most Canadians now recognize that health goes far beyond the absence of disease. It encompasses physical, mental and even social well-being. Contemporary visions of health include not only equitable access to a good health care system, but also safe and supportive communities, adequate income and housing, and meaningful lives.

GOAL 6

Create a healthy environment and an affordable **health** care system that will improve the physical and mental well-being of all Canadians.

In other words, we not only need healthy environments, but healthy workplaces, lifestyles and communities if we are to be healthy individuals. In short, the rather narrow links between health and the environment must be replaced by much broader links between health and sustainable development.

Health

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Assign priority to programs on family planning and sexually transmitted diseases	months years+ xx	$ s	$$ ee sssss	Reduces unwanted pregnancies and spread of AIDS	Health workers	F P M C	?
Enable certified health claims on food labels, *advertising and* menus	years decades xxx	$ e ss	$$$ ee ssss	Opens up preventative health care to *other profes*-sions and markets; reduces health costs	Nutritionists, food industry	F P B C	?
Shift funding from specialized medical cures to preventative health care programs	years decades xxxxxx	$ s	$ ee sssss	Emphasizes preventative health care by lower paid professionals	Nurses and other health workers	F P M B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

Like water quality, air quality affects human health directly. Contaminated soils also affect health, especially when toxic substances get into the food chain. Dangerous working conditions, workplace exposure to chemicals and other hazardous substances, and inadequate training can all threaten the health of employees. People who spend hours in stressful environments, either at the workplace or driving there, are also not as productive as they could be, which hampers the competitiveness of Canadian industry.

The fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity.

– *Ottawa Charter*, 1988

In addition to healthy natural and workplace environments, our health depends on the conditions in which we live in our homes and communities. Inadequate income often leads to poor living conditions and nutrition, but unhealthy eating habits also affect those in higher income brackets. High-fat, low-fibre and fast food diets not only lead to poor nutrition but also detract from sustainable development by promoting lifestyles that lead to increased consumption of energy and other natural resources at the expense of community-based goods, services and cultures. The opportunity to prepare and eat more meals in the home also enables all kinds of families to contribute to social and human development.

Safe homes, streets and communities not only help to reduce stress but also physical injury. Communities able to carry on their cultural traditions will be healthier than those deprived of this opportunity to build self-esteem and a feeling of belonging and responsibility. The example of some Indigenous communities in Canada illustrates the effects of poor housing conditions, unresolved land claims and denied rights to self-government.

Many communities are now taking on more health-related decisions themselves, which seems to have produced some very tangible results and may be an important choice to consider in planning for the future. Do we have an appropriate balance between hospital-based cures and community-based health care? What would a more affordable health care system look like in Canada? Would preventative health care programs save more lives than capital investments in hospitals and highways?

Addressing these questions and challenges inevitably moves the debate far beyond the traditional health care sector, especially if one considers the health of not only human communities but also of the other species with which we share this planet. Changes to environmental protection practices, social programs, workplace environments and land-use planning are just some of the choices that we might consider.

4.7 Security

National security, traditionally understood to mean the protection of our territory and national interests from external forces, has been the distinct responsibility of the Department of National Defence (DND). With the end of the Cold War, however, much more attention now needs to be given to other forms of security, in recognition of the fact that the biggest threats

Security

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Ban hand guns and assault weapons; improve controls of guns and ammunition	months years xx	$$ s	$ ee sssss	Reduced availability of guns and ammunition	Police associations and urban residents	F P M C	?
Reduce reliance on offshore energy supplies through conservation and renewables	years years+ xxx	$$ s	$$ eeee ssssss	Greater geopolitical security; higher energy efficiency; more jobs	Construction and service industries	F P B C	?
Involve DND in control of greenhouse gases as well as other threats to national and global security	months years xxxxxx	$ s	$$ eeeee sss	Reduced levels of greenhouse gas emissions; greater global security	Green industries	F P B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

to the security of Canadian lifestyles are now internal. If Canadians are to feel less danger, fear or worry, we must address some of these imminent threats to our individual and collective security.

Internal threats to security include crime, violence (including family violence), contamination of our food or water supply, and job security. More of our military budget could be invested to ensure secure supplies of energy, food, air and water as well as more stable employment, safer neighbourhoods, better health care and governance.

GOAL 7

Develop a society in which people feel secure and safe in their homes, communities and workplaces.

Before we can do this, however, we must create an understanding of these security threats. For example, energy security includes, but is not restricted to, ensuring that Canada does not need to go to war to protect its energy supplies or those of its allies. Investments in decentralized sources of renewable energy supplies, including demand management techniques, may be far superior from a security point of view than subsidizing (if only through credit ratings and loan guarantees) offshore drilling, centralized generators and vulnerable transmission lines.

The resilience of Canada's food supply is also closely linked to its dependence on fossil fuel supplies and their derivatives. Transportation has also been long overlooked for its impact on personal security. Governments continue to sanction urban sprawl and build billion-dollar highways despite the fact that higher densities and greater use of public transportation systems could reduce traffic accidents and respiratory diseases, saving many more lives at much less cost.

The reduction of social violence through better control of drugs, guns or the media, could also become an important national security issue. Greater attention to reducing social inequities, such as the number of children living in poverty, could also have substantial security payoffs.

However, not all security threats are internally driven or controlled. Global security continues to be compromised by intercontinental transportation and inefficient consumption of fossil fuels. This problem extends beyond the graphic example of oil spills to include the less visible problems of climate change, which may have the potential to cause more damage globally than the effects of all armed conflicts combined.

The Canadian Forces' structure, organization and disciplined, flexible military skills gives them an inherent secondary capability to respond to a wide range of public emergencies, including environmental disasters.

– *Green Plan*, 1990

One of the greatest emerging challenges to our security may be the environmental and social deficits in other countries that lead to massive refugee problems and contribute to growing political and religious tensions over population and immigration issues.

Many things can be done, beyond building a stronger defence force, to enhance our sense and level of security. The difficulty is in deciding what will contribute most to sustainable development

in Canada, what will bring us the greatest benefit for the least cost, and what should be undertaken first.

The future role of DND will have to be carefully considered. Whether DND needs to continue doing the kind of work it currently does, whether it could be reoriented to undertake work on some of these other security-related issues, or whether it needs to be completely re-thought should all be considered. In the meantime, it is important to consider that as one of the largest federal employers and purchasers, DND has considerable potential to improve its operations through better energy efficiency and pollution prevention programs.

4.8 Mobility

Compared to European countries, Canada's geography, historical development and low energy prices have resulted in a fossil-fuel based transportation system that is currently unsustainable. According to the Transportation Association of Canada, our overwhelming dependence on private cars contributes to urban sprawl, loss of farmland, overconsumption of fossil fuel as well as air and noise pollution.

The social costs of decaying urban centres in both large and small communities, exacerbated by suburban shopping malls, also pose considerable challenges to local and regional development. Other consequences include deaths and injuries from unnecessary accidents, increased alienation, unsafe streets and social inequities.

The inefficiencies caused by traffic congestion and the increasing costs of infrastructure maintenance are becoming economic, environmental and social liabilities for urban areas in Canada. When combined with the indirect subsidies of air travel, this results in a degradation of inter-city rail service and the neglect of rural needs, which all affect our ability to compete internationally.

Our unprecedented mobility today is not only unsustainable but historically and globally inequitable. Our grandparents rarely moved around the country, let alone between continents, and the vast majority of globetrotting tourists come from G-7 countries. In the Netherlands, personal mobility levels are being questioned by groups such as Friends of the Earth, whose *Action Plan Sustainable Netherlands* suggests a 70% reduction in passenger car miles alone.

Such measures would be very unpopular and difficult to implement but it is important to realize that substantial savings in CO_2 emissions will only be possible through major changes in mobility levels and modes. Canada's geography and climate tend to increase our demand for mobility, underscoring the need for even more efficient transportation policies in order to compete globally.

GOAL 8

Ensure levels of **mobility** and communication that support basic human needs without denying future generations similar opportunities.

Some stakeholders believe that the degree and efficiency of personal mobility for the vast majority of urban residents could actually be increased by transferring some movement of people and goods from private vehicles to various forms of public transport, including rental cars. This could mean greater mobility within cities for a wider group of people,

Between 1930 and 1990, automobile passenger-kilometres in Canada increased by over 10 times... while air passenger-kilometres increased by over 1,000 times.

Mobility

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Replace vehicle registration fees with "feebates": rebates for efficient vehicles; fees for inefficient vehicles	months years xx	$ ss	$ eeee sss	Would increase efficiencies and ensure that the polluter pays	Car dealers	P	?
Negotiate covenants with insurance industry to facilitate car pooling and sharing and pay-at-pump insurance	months years xx	$$ ss	$$ eee ssssss	Higher vehicle occupancy; more jobs in car leasing industry; fairer distribution of insurance costs	Commuters and insurance industry	F P B	?
Reduce the deficit through dedicated increases in excise taxes on fossil fuels	months decades xxxxxx	$ sss	$$$$$ eeeeee ssss	Would take advantage of concern over deficit to reduce CO_2 emissions and respect UNCED commitments	Public transport and car servicing industry	F	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

particularly the elderly, disabled and children, by improving schedules and services of public transport, while reducing traffic congestion, and thus improving the circulation of those vehicles remaining on the roads.

The safety and efficiency of inter-city traffic could also be improved by reducing urban sprawl and thus traffic on rural highways, and by making public transport more viable. Shifting some freight from trucks back to rails, with computerized inventories and local delivery systems, would not only be more efficient and generate better jobs but would also make highways safer and less expensive to maintain.

Because of the long lead times involved in building transportation infrastructures and the long-term implications of land-use planning decisions, the highest priority should be accorded to reviews of the sustainability of new investments in transportation. This would include decisions on the expansion of highways or airports and the abandonment of rail service. Generally speaking, highway investments should be restricted to maintenance operations, and investments to increase airport capacities should be redirected to high-speed rail.

The employment and deficit-reduction implications of increasing transportation sustainability could be considerable. Shifting traffic from private vehicles to public transportation would be accompanied by similar shifts in the manufacturing sector as some autoworkers move towards making more buses and trains. Increased employment in the servicing of public transportation (including the organization of car and van pools) could offset decreased employment in the manufacturing of equipment. Another, often ignored, aspect would be an increase in the productivity of employees in general, thanks to more efficient transportation.

Although ground transportation is primarily a provincial responsibility, there are many ways that the federal government can promote more sustainable transportation systems, including the removal of indirect subsidies of heavy trucks and parking (Box 60). Further increases in excise taxes on liquid fuels, bringing them closer to European prices rather than the lower prices in the United States, would be an effective way of reshaping our transportation systems.

BOX 60

Annual government subsidies *($US millions)*

	US	Canada
second-home mortgage	200	?
coastal flood insurance	350	?
inland waterway systems	350	?
timber rights	400	?
mining royalties/patents	680	–
surplus crops and irrigation	830	?
mining depletion allowances	1,800	–
heavy trucks	3,900	?
employer-subsidized parking	7,000	?

(Estimated by Friends of the Earth US)

4.9 Closed-loop systems

At the heart of sustainability concerns is the environmental impact of human numbers and activities. Current patterns of economic growth are based on an ever accelerating use and disposal of natural resources. This so-called physical "throughput" begins with resource depletion (e.g., cutting down forests, catching fish) and ends with waste

Closed loops

Some examples of choices that could be considered	Timing Duration Impact	Costs: $, Environ., Social	Benefits: $, Environ., Social	Some consequences	Partnerships	Responsibilities	Consensus levels
Ensure that all government purchases of products and services respect sustainability criteria	months years xx	$$ ss	$ eeeee sss	Provides larger markets for green products and services while recognizing social concerns	Green industries and labour unions	F P M B	?
Ensure that companies assume life-cycle costs of products and services by shifting from purchasing to leasing patterns	years decades xxxx	$ e ss	$$ eeee sss	Less consumption of material goods but more design and servicing jobs	Small business and industrial designers	F P M B C	?
Introduce full-cost accounting through ecological tax reform and international harmonization programs	years decades xxxxxx	$$ e ss	$$$$ eeeee ssss	Less use of higher priced raw materials and more efficient extraction-based industries	Small business	F P B C	?

Legend

Timing: Time it would take to implement choice. **Duration:** Period during which the impact is felt. **Impact:** x = low impact; xxxxx = high impact. **Cost:** $ = low monetary cost; eee = medium environmental cost; ssssss = high social cost. **Benefits:** $$$$$$ = high monetary benefit; eee = medium environmental benefit; s = low social benefit. **Consensus:** ✓ = low consensus; ✓✓✓✓✓ = high consensus. **Responsibilities:** F = federal; P = provincial; M = municipal; B = business; C = civil society.

outputs or byproducts of industrial processing (Box 61). Often, these waste products take the form of pollutants that are ecologically damaging and affect resource productivity.

Environmental sustainability means maintaining the source (regenerative) and sink (assimilative) capacities of natural systems. It refers to the capacity of ecological processes to meet the demands imposed on them by society without cumulative or irreversible depletion. When human population and economic activity were small relative to the biosphere and resource base, their impact on "sources and sinks" was localized. This is no longer the case. We live in an era where natural resources have become limited by and, in turn, are limiting development.

GOAL 9

Design closed-loop systems of resource use that maintain the source and assimilative capacities of ecological systems.

When the 1972 report of the Club of Rome, *The Limits to Growth*, called for a transition from growth to global equilibrium, it was dismissed almost out-of-hand. One criticism of the report was that it oversold the problem of potential resource depletion, paying insufficient attention to price elasticity gained by improved efficiency, recycling and increased exploration. What went into industrial processes was most important and few seemed to think about where the wastes went. Many observers now believe that a more serious constraint to throughput growth is the capacity of air, water and soil to assimilate waste products (especially CO_2).

A longer term, pro-active approach must focus on maintaining the sources and sinks on which human life and livelihood depend. Some of the key policy issues and tradeoffs that must be considered are listed in Box 62.

What constitutes environmental sustainability or carrying capacity for a particular ecosystem may be defined only in broad, relative terms of social acceptability. Objectives for ecosystem management must incorporate economic and equity goals, as well as an assessment of resource potentials and constraints. The emphasis, of course, will vary with types of ecosystems, whether natural or managed, and the communities or constituencies involved. In all cases there is a need to apply the precautionary principle, safe minimum standards, and, where possible, "no regrets" policies that yield both economic and environmental benefits.

Ecological economists argue that society cannot afford further net loss of natural capital. In order to maintain current source and sink capacities, a significant redesign of public policy seems necessary. The policy transition toward environmental sustainability must employ and link both supply and demand-based initiatives.

Industrial, commercial and domestic waste has become an expensive consequence of a consumer society that has not internalized life-cycle or disposal costs in the prices of goods and services. The increasing amount

BOX 61

Generation of municipal waste (kg per capita in 1987)

United States	720	United Kingdom	350
Australia	680	Germany	350
Canada	600	Italy	350
Japan	410		

(Source: UNDP, 1994)

of waste generated not only increases the burden of waste management but also seriously misuses resources and often poses significant health risks. Better control of the entire life cycle of all products will not only result in higher employment levels and greater energy efficiency, but also less pollution and lower health costs.

A great deal of the complicated reduce, reuse and recycle hierarchy could be assumed by industry. More efficient use of natural resources would also increase Canada's competitiveness in global markets. For example, rather than working out specific legislation for the recovery of waste oil, manufacturers could be incited to recuperate it through a system of their own design, such as that of the Canadian Petroleum Producers Institute. This would increase the cost of lubricating oil, but the employment levels associated with its distribution, use and recycling would also rise.

BOX 42

Some eco-management policy issues

What is the current state of the environment for a given natural or managed ecosystem?

- What is the nature and severity of current problems and conflicts?
- Is the resource or ecosystem, under current conditions of use, self-maintaining?
- If not, what conservation/rehabilitation measures are necessary?

What is the full state of benefits and costs associated with resource use and ecosystem maintenance (including rehabilitation?)

- How will these vary if we move to less intensive levels of use?
- Who gains and who loses as a result of changing policies?

How do we (re)define sustainability or carrying capacity and over what space and time scales (1 year/100 years)?

- What are the new management goals, guiding principles and rules of thumb?
- Which viewpoints are taken into account, and what processes are used to resolve differences?

How will further changes be monitored and managed?

Charges for the use of waste sinks such as the atmosphere, rivers and landfills would also result in changes to manufactured products. Disposable appliances, for example, could be replaced by more durable products that would be designed to be repaired rather than thrown out. This would have the advantage of creating additional skilled employment in the design and production sectors of the manufacturing industries as well as in the repair and installation sectors. Waste is also an excellent choice for a green tax because it would encourage people to produce less waste while penalizing large consumers of material products instead of frugal or low-income consumers.

As in other areas, market instruments appear to be the most effective approach to waste management. Rather than attempting to regulate the multiple forms and sources of waste now produced, resource prices that reflect all of the costs involved would reduce the waste management problem in a much more efficient way. Underpriced natural resources would become more expensive but also more acceptable to foreign markets increasingly concerned about the environmental (if not social) pedigrees of Canadian exports.

Major ways of reducing the throughput pressures on environmental sources and sinks, as well as societies in all parts of the world, include

- stabilizing population;
- reducing high rates of per capita consumption of material resources; and
- more resource-efficient design of products and processes.

5

Transition tools

Focusses on various transition tools, including integrated decision making, economic instruments, education and accountability.

Encourages people to concentrate less on the multitude of specific problems and more on those aspects of governance and management that transcend all sectors and problems.

Recognizes that sustainability will not be achieved in a single step, but rather through a series of intermediate steps or changes during a period of transition.

5

Rather than focus on traditional economic or social sectors, whose specialization and compartmentalization led to unsustainable development in the first place, or concentrate on symptoms of unsustainability, such as ozone depletion, water shortages and toxic wastes, this chapter takes a systemic approach by looking at those aspects of governance that transcend all sectors and problems.

According to the Canadian Council of Ministers of the Environment's *1993 Environmental Scan*, Canada has been quite successful at controlling issue-specific symptoms (such as air and water pollution) and dealing with surface causes (such as CFCs and harvesting practices). But most pollution control policies were developed for local or specific environmental problems and fail to deal with sustainable development. Canada has only now begun to address the root causes, which cut across all environmental and developmental problems (Box 64).

...statistical evidence indicates that real trend reversals have not been attained when they require substantive structural changes in basic production processes...or when they involve major alterations of consumption patterns or other significant impacts on lifestyle...

– National Center for Economic Alternatives, *Index of Environmental Trends*, 1995

Where governments and institutions have begun to look at these underlying causes, there is an opportunity to learn from, and build on, their creative efforts, some of which are highlighted in the following pages. Provincial and territorial sustainable development strategies, for example, have identified a variety of tools or mechanisms for implementing transitions to sustainability. These provide a strong base from which to consider national transition tools (Box 63).

The transition tools discussed in the following sections are closely linked. Positive steps in one area should support changes in another. Sustainable economic systems are not likely to emerge without new forms of governance and better education, just as appropriate science and technological development will depend on appropriate economic signals and improved accountability, particularly where public funds are being invested.

Provincial transition strategies

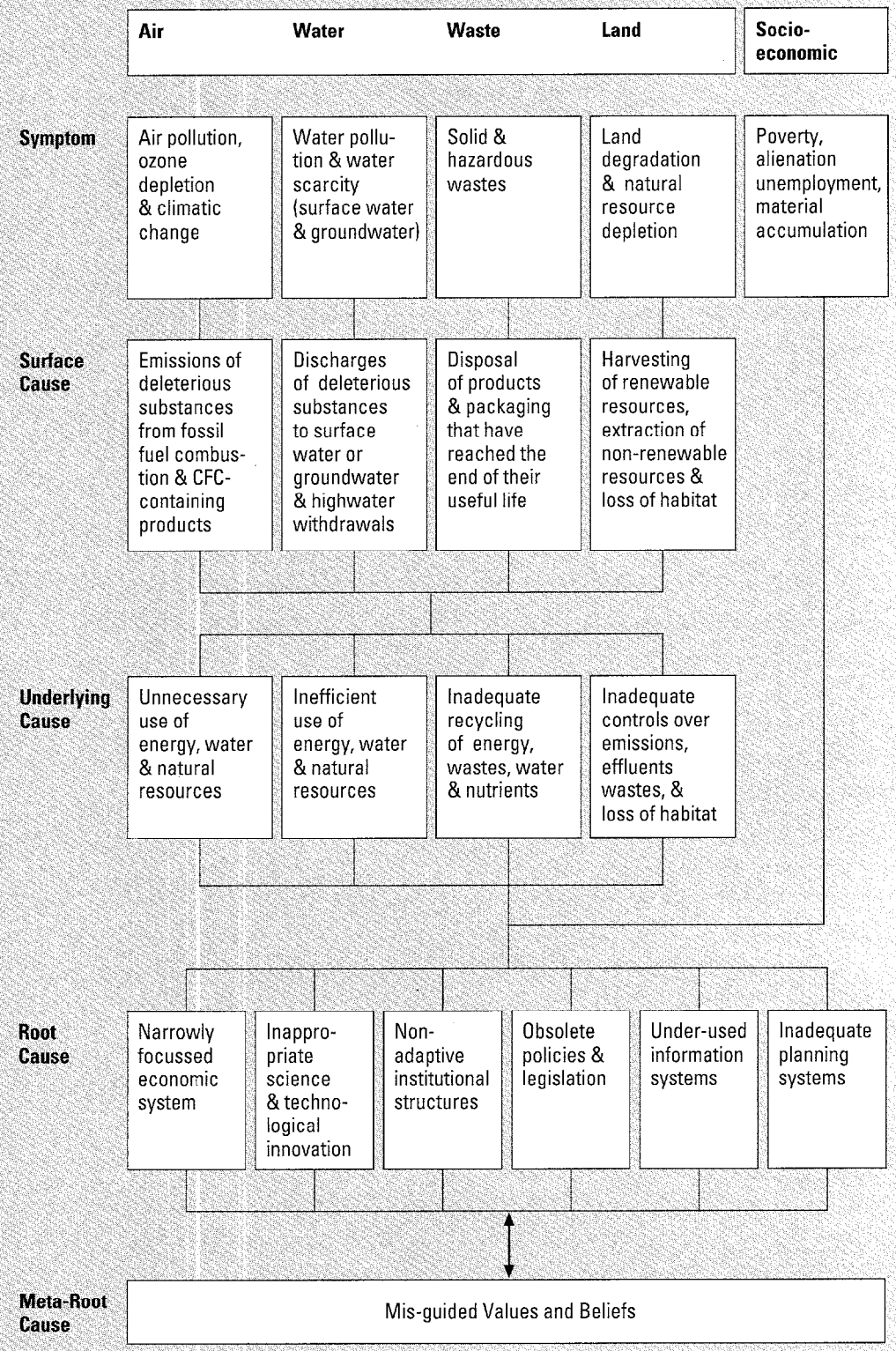
Provincial sustainable development strategies present a variety of tools or mechanisms to implement the kinds of changes being called for, including

- integrated resource management and land-use planning
- monitoring and information management
- environmental assessment
- research
- consensus building and partnerships
- education
- business opportunities
- regulation and effective enforcement
- economic tools
- government commitment
- demonstration projects
- interdepartmental and interjurisdictional cooperation

5.1 Institutional change

Despite considerable work on the environment, very little attention has been paid to implementing sustainable development in federal states. New legislation or taxation policies and spending programs that

BOX 4



Symptoms and causes of environmental degradation. Source: *1993 Environmental Scan*, CCME

embrace sustainable development by taking an integrated approach will undoubtedly encounter considerable jurisdictional tension in a confederation like Canada, particularly if sustainability criteria are incorporated into transfer payments.

The difficulties involved in introducing sustainability strategies into governments and other institutions that have been operating for decades with sectoral mandates should not be underestimated. This problem is not restricted to the federal government, but also applies to provincial governments and many other institutions that were established long before the advent of a more interdisciplinary approach to management. Yet sustainability will only be achieved by ensuring that agencies and departments work together instead of at cross-purposes. Such a comprehensive approach is one of the biggest challenges for a sustainable development strategy.

More dynamic changes will be required in Canadian institutional structures than in the U.S. because, although Canada is further down the road in terms of gaining acceptance for sustainability, it remains behind the U.S. in changing its structural capacity.

– Patricia Scruggs, *Guidelines for State Level Sustainable Development*, 1993

A weakness of some sustainable development strategies is their exclusive emphasis on solutions to environmental problems, and thus their reliance on environment departments, despite the fact that other departments often have much greater responsibility for sustainable development. The changes that sustainable development involves pose a significant challenge (if not threat) to many national and international organizations. Thus, some of their employees may resist such changes. In Manitoba, considerable effort has been made to adopt sustainable development as a government-wide initiative. This has resulted in some interesting changes to the institutional structure (Box 65).

There are many overlapping jurisdictions where greater cooperation is necessary. The case of Energuide, Environmental Choice and the *Ontario Energy Efficiency Act* labelling is just one example. Yet the redundancy, dispersed power and enforced bargaining that results from shared federal-provincial responsibilities may in some cases be beneficial because it tends to increase the responsiveness of the political system by providing citizens with various avenues of recourse and allows for some competition between governments.

The disadvantages of overlapping jurisdictions are more familiar: counterproductive activities when one level of government ignores what another level is doing or actively undermines it; higher costs; lack

BOX 65

Institutional change in Manitoba

In Manitoba, the Premier is Chair of the Round Table on Environment and Economy, and many members of the Cabinet Committee on Sustainable Development are also members of the Round Table. In addition, Deputy Ministers from 15 departments make up an Interdepartmental Planning Board, and senior managers from 18 departments make up a Sustainable Development Technical Advisory Committee (TAC). Much of the support for this Committee comes from the government's Sustainable Development Coordination Unit located in the Executive Council. It supports the activities of the Round Table, coordinates provincial sustainable development initiatives, provides management support to the Cabinet Committee and chairs the TAC.

A discussion paper regarding a sustainable development act has also been prepared. In order to make provincial laws and policies consistent with the principles of sustainable development as defined, the act would be a tool for ensuring that sustainable development is embodied in the mandates, management systems, structures and operations of the public sector.

of accountability; and issues falling through jurisdictional cracks. Some of the higher costs include those involved in determining who to deal with, the uncertainty and delays that arise when relying on federal-provincial co-operation, and increased compliance costs when dealing with more than one level or set of regulations.

One of the real institutional challenges that we need to address is finding ways of increasing the decision-making powers of First Nations, particularly regarding lands and resources. Devolution of authority, self-government agreements and co-management structures established under comprehensive claim agreements are just some of the approaches that need to be pursued (Box 66).

A sustainable future for Canada will also depend on our ability to empower communities or local governments to make more of the decisions that affect their local interests. There is strong support in Canada for the idea that national sustainability will only come through building sustainable communities. If communities are to adopt sustainable practices, they must be empowered to make the kind of changes that will allow this to happen. The roles of different levels of government in this transition to sustainability need to be seriously considered.

Effective institutional change will depend on democratic decision making that balances the concerns of technicians, bureaucrats and politicians with those of the public. As Yankelovich has noted, it would be naïve to underestimate the scope of the challenge: success requires not only changes in existing institutions, such as the media and the nation's elite professional training systems, but also in the creation of new institutions. This implies dismantling some old institutions, which, during a period of fiscal restraint, may be a blessing in disguise.

We must find innovative and sensible ways of making Canada a leader in sustainable development. Together, we must find ways of changing how we think and particularly how we act.

– Hon. Sheila Copps, Deputy Prime Minister and Minister of the Environment, *Hansard*, 16 February 1994

5.2 Integrated decision making and planning

Very little progress has been achieved in introducing integrated decision-making approaches because of the institutional and personal obstacles involved. Many of our institutions were formed decades ago and continue to be run by officials whose education and specialized training did not prepare them for the flexibility and cooperation needed for interdisciplinary approaches to problem solving.

Although Canada has made considerable progress in developing multistakeholder and

Box 66

Co-management at work: Beverly and Qamanirjuak Caribou Management Board

What some have called the flagship of interjurisdictional co-management is the Beverly and Qamanirjuak Caribou Management Board that resulted from the B-Q Agreement signed in Winnipeg in 1982. The B-Q Caribou Management Board involves representatives from Dene, Cree, Métis and Inuit communities with provincial (Manitoba and Saskatchewan), territorial (Government of the Northwest Territories) and federal (Department of Indian Affairs and Northern Development and Environment Canada) representatives.

One of the most significant accomplishments is the development and implementation of a 10-year Caribou Management Plan based on public meetings, written consultations and a special-user assembly in Arviat, N.W.T. Other accomplishments include territorial hunting regulation amendments from user recommendations, cooperative herd data collection with user participation, a curriculum-based school program embodying caribou management and biology, youth contexts and scholarship programs, an allocation priority list, a forest fire management plan, "Caribou News," and habitat protection measures.

A good measure of the Board's credibility and effectiveness was a unanimous vote to extend the agreement another 10 years from 1992 to 2002.

consensus-based approaches to decision making (Box 67), such approaches have yet to be integrated into traditional systems. Consequently, our understanding of the needs of sectors or constituencies other than our own is limited, and we understand even less about the interrelatedness of issues.

One way of encouraging people to think and consider issues in a more integrated way would be to focus on human needs such as shelter or food or health (as described in Chapter 4), rather than on traditional sectors such as energy or transportation. This process would allow people to move away from the conflictual approach that emphasizes competition between different sectors.

Cooperative, integrative approaches would better respond to user needs. Although this would be a major challenge to those institutions that have been developed to protect specific sectors, it could help to accelerate the streamlining of governments and institutions necessary to reduce expenditures and encourage sustainable development.

As a government, we intend to innovate, to look at old problems with fresh eyes... to measure the long-term outcomes and consequences of our policies and programs.

– *Creating Opportunity*, 1993

This kind of shift away from sectoral issues to a more integrated consideration of needs can be seen in new approaches to planning, such as coastal zone management and ecosystem management. These approaches recognize that successful management of a resource requires considering the needs of all users in an integrated way, and recognizing the impacts that one activity has on another. An example of a new institution designed to take a more integrated approach to land-use planning is British Columbia's Commission on Resources and Environment (Box 68). By their very nature, such integrated approaches to decision making and planning need to be more anticipatory and participatory.

Integrated decision making can reduce conflict through better information, understanding, support and compromise. It minimizes some of the negative impacts that can result from decisions made in isolation. There is also an enormous potential for increases in efficiency and cost-effectiveness as we move to more integrated decision making.

Box 67

Consensus processes: Guiding principles

In 1993, Canadian Round Tables agreed on the following set of principles for consensus processes:

1. Purpose driven: People need a reason to participate in the process.
2. Inclusive not exclusive: All parties with a significant interest in the issue should be involved in the consensus process.
3. Voluntary participation: The parties who are affected or interested participate voluntarily.
4. Self design: The parties design the consensus process.
5. Flexibility: Flexibility should be designed into the process.
6. Equal opportunity: All parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.
7. Respect for diverse interests: Acceptance of the diverse values, interests, and knowledge of the parties involved in the consensus process is essential.
8. Accountability: The parties are accountable both to their constituencies and to the process that they have agreed to establish.
9. Time limits: Realistic deadlines are necessary throughout the process.
10. Implementation: Commitment to implementation and effective monitoring are essential parts of any agreement.

5.3 Regulatory alternatives

Sustainable development continues to be impeded by overlapping and competing laws and regulations, complex negotiations and lengthy court challenges that rarely

address sustainability issues. Jurisdictional disputes in Canada have been analyzed from the perspective of industry, intergovernmental relations, cost and environmental protection, but very little attention has been paid to sustainable development. The 1988 regulatory reform process acknowledged that regulation entails social and economic costs, but only recently were environmental costs included as factors.

As problematic as harmonization of environmental standards and reporting might be within Canada, such a task pales in comparison with the effort necessary to harmonize sustainable development factors. Existing laws might all have to be amended, because it is unlikely that they could be interpreted broadly enough to ensure sustainable development. Given the thousands of laws and regulations that would be affected, a legislative approach would do little to promote fast-track transitions to sustainability.

This has led to greater interest in alternatives to regulation, as well as to alternative forms of regulation. Alternatives to regulation include public ownership, insurance schemes, taxation, expenditure, persuasion, loans and loan guarantees, user changes, and modification of private law rights and procedures. Alternative forms of regulation include information controls, marketable rights and other supplier controls, production process controls, and price controls.

Public ownership has been used in Canada for a variety of purposes, including controlling sensitive industries, promoting national interests or security, and moderating undue hardships during transition periods. Insurance schemes can provide effective ways of internalizing social and environmental costs into the prices of goods and services, but this could also be done through performance bonds and restoration funds.

Very few concrete steps have been taken to reduce greenhouse gas emissions in any North American jurisdiction, compared to how much is needed to meet targets. Unprecedented, innovative policy measures would have to be taken immediately for energy consumers and producers to meet their proportional share of the stabilization target.

– British Columbia Energy Council, 1994

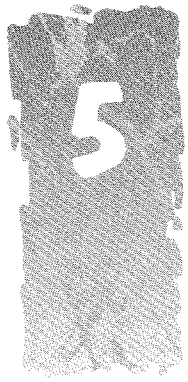
Taxation is not limited to tax payments. It also includes tax deductions and credits, as well as a variety of charges, levies and fees. Government expenditures through grants and contributions directly affect specific operations; whereas procurement policies can have significant ripple effects if suppliers are obliged to change production processes or employment practices to be eligible for government contracts.

Box 68

Commission on Resources and Environment

The Commission on Resources and Environment (CORE) was established in British Columbia in 1992. Its mandate is to work with local bodies and provincial ministries to develop regional land-use and resource management plans and a provincial land-use strategy. In carrying out its mandate, CORE must try to ensure socially, environmentally and economically sustainable land use in B.C.; encourage effective public participation in decision making; and respect Aboriginal interests.

These principles were outlined in a Land Use Charter that CORE developed in 1992, and which the provincial government subsequently adopted. A set of draft land-use goals has also been prepared by CORE and presented to government. CORE is currently working on a number of discussion papers that propose strategic policies and indicators to achieve these goals. In addition, CORE is facilitating a number of regional negotiation processes to develop region-specific land-use plans. The first of these, the Vancouver Island Land-Use Plan, was made public in 1994.



Promotion of voluntary action can be pursued through various forms of partnerships and multistakeholder approaches, or elaborated in codes practice or covenants. Loans and loan guarantees (a form of subsidy) as well as user charges are designed to modify specific behaviour by lowering or raising the cost of certain goods and services; and the modification of private law rights can affect civil procedures.

Information controls include disclosure requirements for the transportation of hazardous wastes and health warnings on cigarette packages. Controlling suppliers is usually done through licensing the number of people entitled to use common resources, notably in broadcasting, transportation, forestry and fisheries. Production process controls have often been used to protect workers or the environment by limiting the use or quantity of certain resources or substances, such as water or toxic chemicals.

The challenge is to define and implement full-cost accounting in a way that minimizes adverse effects on individuals and groups, or on our international competitiveness.

– Ontario Round Table on Environment and Economy, 1990

Direct controls of the price, quantity and characteristics of goods and services can be achieved through minimum-maximum wages and prices, quotas (an indirect way of price control) and standards. Usually related to size, appearance, content, quality, durability, safety and purity, standards can be based either on technical characteristics of the product itself or on how it actually performs.

5.4 Greening the economy

Driven by a vision of economic growth based on bountiful natural resources, many government policies traditionally subsidized forestry, fisheries, agriculture and fossil fuels, while allowing the resulting wastes to pollute the air, soil, fresh water and oceans. Such subsidies directly contributed to fiscal deficits by increasing government spending. They continue to shield the economy and consumers from the real costs of basic human needs.

"Grossly artificial underpricing" that borrows from our children has resulted in today's enormous environmental, social and financial deficits. With the collapse of most centrally planned economies around the world, there is increasing pressure, indeed responsibility, to ensure that market signals direct the transitions needed to achieve sustainability. For prices to reflect the real costs of goods and services, economic instruments will have to be used to internalize the environmental and social costs that are now borne by current public budgets or deferred to those of future generations.

A good place to begin would be to remove the indirect subsidies that contribute to unsustainable rates of resource consumption yet remain hidden from consumers in unrelated taxes (Box 69). The resulting increases in the prices of many but not all forms of energy, for example, would need to be compensated by decreases in revenue from income and corporate taxes. In order to maintain universal access to basic goods and services, such changes would have to be tempered by measures to accommodate low-income groups and others who would suffer short-term hardship.

By reducing indirect subsidies of fossil fuels, renewable energy sources would become more attractive and could lead to higher

employment levels in communities throughout the country, rather than in offshore sites or other countries. Similar gains in employment and environmental protection could eventually result from replacing many agricultural subsidies with higher prices for local food products and lower taxes.

Integrating cost with price does not "raise" the over-all expenditures of consumers, but rather places them where they belong, so that the consumer and producers can respond intelligently.

– Paul Hawken, 1993

In these and other cases, special efforts would be needed during the transition phase to ensure that displaced oil workers or disenfranchised farmers are compensated for their losses. If governments interested in reducing the fiscal deficit recoil at the idea of cutting indirect subsidies to the energy sector (estimated to reach $4 billion per year) they could consider other measures, such as increasing gasoline taxes.

A full evaluation of the impacts of current government subsidies is needed to determine whether they are promoting or discouraging sustainable practices. Subsidies could be used in this transition period to encourage a shift to more sustainable practices, whether in agriculture, transportation or any other sector.

Taxation, affecting every sector of society, has a very powerful, but largely invisible, influence on the behaviour of producers and consumers. The most effective way to integrate the economy with social and environmental goals would be to repeal the *Income Tax Act* and replace it with a sustainability tax act (Box 70). Reforming taxation to promote sustainability would send the right signals.

This would involve shifting current taxes on income, goods and services to sustainability taxes that would maintain or lower overall taxation levels, but direct them in a way that would reduce rather than subsidize the inefficient use of resources. Such an approach would also promote long-term, community-based employment opportunities rather than short-term profits that weaken Canada's economic stability and international competitiveness.

According to the Conference Board of Canada, a gasoline or motor fuel tax would lead to less driving and more walking, the use of more fuel-efficient vehicles and public transportation, and the development and use of non-fuel vehicles (such as electric cars). The Board goes on to note that a carbon tax applied to the sale of fossil

BOX 69

Subsidies

According to Canada's International Institute for Sustainable Development, some analysts have suggested that financially and environmentally counter-productive subsidies cost between $5 and $10 billion per year. About $4 billion per year subsidizes fossil fuels; Pollution Probe estimated the net subsidy of automobile travel in Canada at almost $5 billion per year; the Guelph Round Table on the Environment and the Economy estimates the total of such subsidies at $30 billion per year! Agricultural subsidies include crop, dairy and livestock products as well as irrigation, fertilizer and transportation subsidies. Significant long-term benefits related to jobs, competitiveness and higher efficiencies would only be threatened if major trading partners maintain their own subsidies.

BOX 70

Sustainability taxes

According to the World Resources Institute, replacing marginal tax rates on income and profits with sustainability taxes would reduce the burden on the economy, releasing about 50 cents of each dollar of revenue shifted. Up to 20 cents on the dollar could also be gained from the net environmental benefits. This suggests that if substantial new revenues are needed to reduce the fiscal deficit, sustainability taxes, such as increased gasoline taxes, would be better than raising income or corporate taxes.

fuels would likely be very cost-effective if supplemented by fiscal offsets, such as a reductions in the GST and income taxes, or an increase in government spending on environmental initiatives (Box 71).

Some observers point out that taxes on environmental problems would also garner broader public support than taxes on income or goods and services. A precedent for such taxes is the federal tax on automobile air conditioners that contain CFCs. A 1989 survey of OECD member countries identified over 50 environmental taxes, including modest levies on water pollution and noise, as well as fees on fertilizers and batteries.

America subsidizes the logging of its ancient forests. Britain subsidizes company cars. Germany subsidizes coal mining. Each country has its green madness, often as economically perverse as it is environmentally damaging.

– Frances Cairncross, 1992

Much higher taxes on non-renewable energy sources, pesticides, solvents and other goods and services that constrain sustainable development, intended to reduce consumption, could also be dedicated to reducing the deficit. As the taxation base of unsustainable activities is reduced, revenues will decline, ideally in step with the deficit. Some research has shown, however, that people would be less supportive of environmental taxes if they were to go to general revenue rather than to an environmental fund.

Box 71

Gasoline taxes

Next to the United States, Canada has the lowest gasoline taxes of any OECD country. If they were to be doubled to equal those of the United Kingdom but still remain far below those of the Netherlands, France, Denmark and Italy, new and additional federal-provincial revenues of about $8 billion could be used to reduce fiscal deficits or personal income taxes.

As Olewiler noted in 1990, "if society wants to minimize the costs of meeting some environmental target," environmental taxes are the preferred instrument because "the private sector is very clever at finding ways to reduce taxes." By shifting income taxes to sustainability taxes, individuals would shift their ingenuity and drive from evading taxes to conserving energy and reducing waste. Taxes also have the advantage of being able to be imposed quite quickly, with more or less immediate results in terms of behaviour and revenue generation.

One must wonder if Canada can continue to maintain contradictory policies and competing bureaucracies that simultaneously subsidize agricultural production on marginal lands, for example, while paying for habitat protection on wetlands. Similarly, one might ask if we can afford to subsidize the price of fossil fuels while trying to reduce CO_2 emissions. In this case, the oil industry and Bank of Canada economists could be asked to choose the least inflation-generating option: gradual reduction of indirect fossil-fuel subsidies or some form of carbon or energy tax.

In order to compete effectively in international markets, Canada must increase all aspects of its economic and ecological productivity. Unless we increase the productivity of our natural resource and other industries – not just our labour force – more of our jobs will be lost to other countries.

The concept of productivity should extend to overall productivity, which depends on the efficiency, competitiveness and

The James Bay hydro-electric project has flooded an area of land about the size of Cape Breton Island.

self-sufficiency of industries. The efficiency with which Canada uses its natural resources may be similar to that of the United States, but it is far worse than that of other major trading partners. Although the effects of some investments in increased productivity may not become apparent for many years, such decisions must be made now in order to ensure brighter prospects for future generations.

Many lessons could be learned from the forestry industry in Canada, which has started to forge its own transition from mining forests to cultivating their resources and keeping jobs within the region, instead of exporting raw materials. Much more will need to be done, however, for both the Atlantic groundfish industry and the Pacific salmon industry. Investments are long overdue in labour and knowledge-intensive, regenerative fishing techniques and programs designed to restore and maintain resource levels, and the local communities that depend on them.

Most studies indicate that energy sustainability would create more jobs that are often better and safer than those which currently exist. A recent study prepared for British Columbia indicates that an efficiency scenario would not only generate more direct and indirect jobs than a traditional supply scenario, but the money saved by conserving energy could also be used to create further jobs. Other benefits in choosing the efficiency scenario would include much higher levels of unskilled and semi-skilled local labour, longer job duration and better distribution of jobs throughout the province.

More information on land degradation, water pollution, loss of biodiversity, social inequity and violence will not necessarily provide the impetus for change. We also need to understand the power of process in affecting personal and social change.

– Judy Pinn, *Women from the edge*, 1994

Many new jobs will be knowledge-based as opposed to product- or resource-based. Much of this knowledge will be used to increase the productivity of resource-based industries and the efficiency with which goods and services are produced, distributed, consumed, reused and recycled.

Fortunately, just as a diverse ecosystem is better able to withstand disruptions, so too is a diverse economy, composed of many small businesses that rely on regional production and consumption. Such companies, and the community-based jobs they create, can better adapt to cyclical downturns and changing international markets, and are also less vulnerable to fragile, energy-intensive transportation systems.

5.5 Education, values and behavioural change

Although most people recognize that the world is faced with many serious problems, they continue to make decisions based on "unsustainable" world views. If sustainable development is to become a reality, considerable attitudinal change will be required. Some of the key values or beliefs that need to be reconsidered in this light include the meaning of success, prosperity, economic growth, competitiveness, standard of living, quality of life, winning and losing, and the role of human beings in nature.

Prosperity, for example, has long been associated with material consumption rates that are not sustainable. More appropriate measures of satisfaction, progress and development must be found. This will require a re-examination of what

people have been conditioned to value as important: can prosperity and frugality go hand in hand?

Some have argued we do not need a *new* set of values, but rather a return to some of the values that many of our elders still hold and many of us learned as children. The seven virtues we know as prudence, justice, temperance, fortitude, faith, hope and charity, need to be re-emphasized over the seven sins of pride, covetousness, lust, anger, gluttony, envy and sloth. A re-awakening to these virtues could be extremely helpful in forging many transitions to sustainability.

Preventative, rather than reactive, measures are likely to provide the most success in education, particularly for children and youths. However, because values are absorbed and reinforced throughout life, there is a need for other mechanisms to ensure a social climate and institutional structures that will encourage individuals to be more receptive to changing values and beliefs. We need to find ways to discuss and debate ethical issues in an increasingly divided society so that we can make more collective and informed choices.

A social marketing strategy, like the proposed SustainABILITY campaign, could help facilitate sustainable development. It emphasizes the need to go beyond simply creating an awareness of issues by enabling people to understand the consequences in their own lives (Box 72). This could encourage them to re-examine their values and eventually change their behaviour.

Of course, the potential of this kind of campaign will be reduced considerably if the forces promoting unsustainable lifestyles continue to outweigh it. If a positive learning campaign is to be launched, it should be accompanied by a concerted effort to reorient unsustainable advertising and media programming. As people adjust their values they will begin to reject the marketing of unsustainable lifestyles. However, changes will occur much faster if both sides of the problem are dealt with at once.

Although many Canadians seem to know intuitively what is wrong with our current society, most feel incapacitated, unable to see what they can do about it. Part of the education process is to give people the tools they need to take action and to build their communities. Different tools will be needed by different constituencies. Strategically, we should focus on those communities ready to make change in order to help them move forward, but we cannot ignore those that are more resistant to change.

Box 72

SustainABILITY

Fostering Responsible Citizenship to Achieve Sustainable Development is the full name for the proposed national social change program known as SustainABILITY. The program was originally conceived of and promoted by the NRTEE and ParticipACTION, and it is designed to engage Canadians in transforming our society into one that is environmentally sustainable.

The specific aims of SustainABILITY include

- creating broad public awareness of sustainable development, its advantages, and the need to redefine our society as one that is environmentally sustainable;
- portraying the individual and collective choices involved in transforming our society to one that is more sustainable;
- facilitating the change of attitudes, values and behaviours needed to integrate the environment into all our economic decision making; and
- providing tools and methods at the community level to foster sustainable development.

Social marketing, a process that uses a wide variety of communications tools to increase the acceptability of a social idea, is planned to achieve the aims of SustainABILITY. After a formal six month development phase, SustainABILITY presented a proposal to the Government of Canada in December 1994. A longer, more detailed document is now being prepared to supplement the proposal.

Individuals, governments and institutions all need to learn about sustainable development. Our values and understanding of issues affects our decisions and behaviour. It is everyone's responsibility to understand how to work with others, how to think of the longer term, and how to see the interconnectedness and incompatibilities of the choices and decisions we make. What are needed are *uncomfortable* partnerships, which challenge people to see other points of view and to learn about new ways of operating and making decisions.

Beliefs and values will change through consistent efforts to encourage tolerance of differences and new ideas, to value creative thinking, to welcome questions about the status quo, and to promote consideration of a wider range of alternatives in decision making (Box 73).

5.6 Scientific and technological innovation

People have long been interested in technological innovation, which has done much to improve the quality of many lives. Scientists have played a key role in alerting people to the environmental and health threats that have emerged in recent years. As well, technology has played a large part in society's ability to address many of these concerns.

The development and inappropriate use of some technologies, however, has been the cause of serious environmental and social problems. People's awe or fascination with technology has often prevented them from fully evaluating the risks and benefits of a technological innovation before applying it. In addition, there is almost always someone who stands to gain from the use of new technologies and someone who stands to lose. However, insufficient attention has been paid to the latter.

In the case of the East coast fishery, some believe that large draggers were causing considerable damage to the ocean floor and harvesting fish at an unsustainable rate. Although this new technology was an economic boon to some, it might have been more sustainable to rely instead on smaller fishing vessels. Whatever the truth in this case, there are no forums in Canada in which to discuss technology. This is of particular concern given the increasing number of technological innovations that raise significant ethical questions.

Box 73

Inviting ideas in a process of change

CityPlan, a participatory planning process, was launched by the City of Vancouver in fall 1992. After an "ideas fair" involving about 10,000 people generated over 4,000 submissions about the city's future, key themes were identified and the city prepared a workbook of ideas and issues. Citizens were invited to fill in the workbook and thereby make the difficult choices and tradeoffs themselves. The completed workbooks were used to develop approximately six alternative visions for the city's future. Inviting the public to think creatively about what they would like their city to be like in 20 years not only generated a real interest and better sense of understanding on the part of the public, but also increased the range of ideas and alternatives considered by the city planning team.

Individuals and societies need to re-establish some sense of control over the technologies they use. Conscious choices need to be made at the beginning of research and development work, which tends to be driven by existing institutions, professions and individual careers. In some cases, highly specialized scientists working in narrow disciplines fail to make important links between the environment, the economy and society. It is very difficult to achieve strong interdisciplinary research in institutions based on old disciplines, hierarchical decision making and competition.

This underscores the need to make information about these critical research

and development decisions available to the public. Canadians should know what percentage of their tax dollars goes to research on alternative energy sources versus fossil fuels, for example, or on cancer research versus research on reproductive technologies. More open public debate about science and technology expenditures would also require communities and NGOs to have better access to scientific data, which is important in order to make informed judgments and to provide credible policy alternatives. All too often this data is in an inaccessible format or is too costly to acquire.

There remains a real need for good scientific and technological innovation in Canada. It must, however, be guided by a strong public sense of direction. If the local coastal economies in Atlantic Canada, or the northern communities in Ontario and British Columbia are to be sustained, new harvesting technologies that allow more efficient use and regeneration of natural resources will be needed. There is an opportunity for Canada to take advantage of markets in other countries, particularly for environmental technologies, and to fulfil its responsibility to share knowledge and assist others in making transitions to sustainability.

Box 16

Canada's Commissioner of the Environment and Sustainable Development

The federal government's response in October 1994 to the Standing Committee on Environment and Sustainable Development's recommendation that Parliament appoint a Commissioner of the Environment and Sustainable Development included three main components.

- The Auditor General Act will be amended to create a Commissioner of the Environment and Sustainable Development, who will monitor and report to Parliament on the government's performance in integrating the environment into its decision making, and raise the profile of the environment and sustainable development in the work of the Office of the Auditor General.
- The government commits to openness, transparency and leadership in its pursuit of sustainable development.
- The government commits that it will integrate the environment when developing new policies, programs, laws and regulations and will continue identifying barriers and disincentives to sound environmental practices.

The Government also proposed to amend the Auditor General's Act as follows:

- to include a definition of sustainable development;
- to make the Commissioner responsible for monitoring and reporting annually to Parliament on the performance of federal departments in meeting their sustainable development goals and objectives;
- to ensure that environmental considerations are taken into account in all Auditor General Reports to Parliament (the Auditor General will now be permitted to report up to five times annually);
- to require Ministers to table in Parliament no later than two years after the amendment of the Act, their sustainable development strategies; and
- to include the role of receiving and forwarding petitions from the public.

5.7 Accountability

Accountability means being held responsible for actions as an individual, an organization, a corporation or a government. Accountability can help build the confidence necessary for more cooperative or consensus-based decision making between different sectors of society, something that the *Projet de société* is trying to promote. If sustainability is to be achieved, our accountability as individuals and corporate entities must go beyond traditional accountability to one's organization or constituency and extend to future and past generations, to people living on other continents and even to other species.

Accountability requires much greater transparency in our marketplaces and institutions so that business people and other leaders can be held responsible for their actions. Some progress has been made, for example, in developing environmental assessment procedures and institutions that enable us to consider the environmental impact of a project and the measures to alleviate them before a decision is made. Project proponents are then held accountable for the conditions under which they are allowed to proceed.

Unfortunately, environmental assessment processes do not apply to government policies or programs, which can often have more far-reaching effects.

Recently, however, some governments have appointed Auditors General or Commissioners for the Environment to hold departments accountable for the decisions they make and how they might affect the environment. It will undoubtedly be more difficult once their mandates are enlarged to include all aspects of sustainable development, though some are moving in this direction (Box 74).

Two vital aspects of accountability are access to better indicators and the ability to report on measurable progress or regression. Regarding environmental indicators, federal and provincial reports on the state of the environment are becoming commonplace, and more and more municipalities are considering preparing their own environmental reports.

Work is under way to harmonize state of the environment reporting across jurisdictions in Canada, but less progress has been made on the challenge of expanding these reports to include more socio-economic indicators, such as those found in the *Human Development Reports* of UNDP. Some effort was made by the City of Toronto to combine a number of social, economic and environmental indicators in their innovative *State of the City* report (Box 75).

Some form of full-cost accounting will be needed to internalize social and environmental factors into traditional economic accounts and indicators. Statistics Canada has started working on resource and environmental accounting, but much more remains to be done if such accounts are to be internalized into the traditional measures of GNP. Considerable progress could be achieved by removing indirect subsidies that disguise the real cost of basic goods and services, notably energy, food, water and waste sinks. Until then, the GNP will remain a false indicator of economic progress because it will not incorporate sustainability criteria.

Much more attention needs to be paid to developing and monitoring sustainability indicators. Incorporating UV readings in daily weather reports is a good start in this direction and this could be followed by other indicators of more interest to stockbrokers and corporate directors. Such indicators should not only be statistically measurable, but also easily understood and accepted by their intended audience. Good sustainability indicators would provide more than just glimpses of human activities: they would compel people to understand the linkages within and among human and natural systems. Because they imply connections and interactions, causes and effects, they should lead to different criteria for decision making and measuring progress towards sustainability.

Finland has removed sales tax on 'green' products and introduced a carbon tax on fossil fuels.

Box 75

Toronto State of the City Report

In 1993 a State of the City Report was prepared for Toronto by the Healthy City office. This report took the concept of state of environment reporting to a new level by attempting to report on the state of the city's environment, social structures and economy in a single report. Coordinated through the Healthy City Office, it documents conditions and trends under a variety of different categories, including community health, economic life, the environment and education.

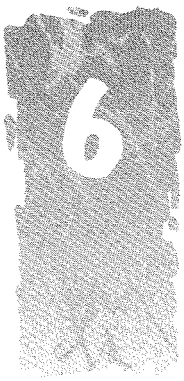
6

Implementation: A collective endeavour

Recognizes that implementation must be a collective endeavour: identifying and overcoming the many obstacles to sustainability, forging new partnerships and monitoring progress.

Stresses the importance of working first on issues whose early resolution will build confidence and trust for the more difficult challenges ahead.

Shows that sustainable development does not require new funding but rather a reallocation of existing financial flows, involving shifts in both the revenues and expenditures of governments, corporations and individuals.



6.1 Identifying and overcoming obstacles

Although there is a great deal of work under way to move Canada toward sustainability, much of it is taking place in isolation. Key opportunities for synergy continue to be overlooked. As well, it is inadequately recognized that most problems will not be resolved until their interconnectedness is understood.

This guide to sustainability is designed to facilitate more cooperation and coordination between different sectors and divergent interests. It describes initiatives already under way, demonstrates the need for links, and shows the kinds of choices that Canadians must begin to make. It also outlines some key transition tools that can be used to implement sustainable development throughout most sectors of society.

We believe that people can solve complex problems through collective action and their own common sense, and that understanding interconnections between resource issues can often solve many problems at once.

– Rocky Mountain Institute, 1994

The next steps would be to encourage those governments, First Nations, businesses and non-profit organizations who have not yet done so to develop their own strategies and to begin to make the choices that will allow them to move toward sustainability.

In developing and implementing these strategies, attention must be given to identifying and addressing key roadblocks or constraints, building new partnerships, establishing priorities, targets and timelines for action, as well as developing effective monitoring and evaluation techniques for measuring success.

If we are to be successful in implementing sustainability strategies, new institutional thinking will be required to enable people at all levels to participate in a genuine dialogue about the critical issues that we must resolve together. Although the electronic highway may be one useful forum for this kind of debate, decisive leadership from governments will also be important.

As the introductory chapters of this guide clearly show, a considerable amount of work has already been done in Canada on sustainable development strategies. Like similar efforts in the past, notably the Conserver Society Project and the more recent *Green Plan*, there have been varying degrees of acceptance of the visions outlined and often disappointing levels of implementation.

It might seem that no amount of good scientific analysis (a characteristic of the Conserver Society Project), top-down, political pressure (such as that behind the *Green Plan*), or bottom-up, consensus-based commitment (a feature of many local strategies) will suffice to ensure the actual implementation of sustainable development transition measures.

What is needed to move ahead is not just a scientifically rigorous, politically acceptable and community-based plan (in itself a tall order), but a strategy that will deal effectively with those forces that pose the greatest obstacles to its implementation.

Rather than developing a plan requiring substantial funding to undertake projects and build new institutions, this guide focusses on the need to redefine the existing development model, which has created our social, environmental and economic

North Americans account for only 7% of the world's population but generate half of its waste, and most of its toxic waste.

deficits. Only a more sustainable model will enable such deficits to be reduced, giving future generations better prospects than they now face. This will require identifying the counter-productive forces that need to be coopted and the obstacles that need to be dismantled or overcome.

This means working with individuals, values, laws, economic instruments, education systems and other forces that are not easily changed. These obstacles will differ between different sectors and different communities, but every transition strategy will have to identify and address them.

6.2 Forging new partnerships

One of the main needs identified by the *Projet de société* is "cross-sector consensus-building and coordination in the transition to sustainability." Although there is still a need to work toward sustainability at the level of the individual business, community or sector, these separate efforts will have to reach out to ensure that they are coordinating their work with that of others and making a conscious effort to bridge some of the traditional barriers between interests or sectors.

In some instances, partnerships can readily become win-win situations. One of the goals of this guide is to facilitate cooperation where mutual interests exist by describing many sustainability initiatives in Canada. A more difficult but more rewarding kind of partnership is that represented by the *Projet de société* itself.

Encouraging a broad range of stakeholders to work together creates a respect for the diversity of interests and approaches that exist. It promotes collaboration and consensus-building and reveals how common fundamental needs are and how the choices that individuals make affect the ability of others to make their own choices.

The choicework process in Chapter 4 shows how to move away from the sectoral approach to decision making and to think about the interconnectedness of issues and the consequences of choices. It is not clear how best to approach this new way of decision making, beyond understanding that it must be much more comprehensive and democratic. Because choicework is a more divergent, integrating approach that pays more attention to implications, it should lead to more partnerships and cooperation between different interests and thus better long-term decisions.

The most important part of the Sustainable Development Strategy will, therefore, lie in the way it is carried forward, and in the arrangements proposed for developing a fruitful partnership between all the different sectors of society in the cause of sustainable development.

– *Sustainable Development: The UK Strategy*, 1994

Because this guide is based on the premise that all sectors of Canadian society have a role to play in moving toward sustainability, it does not include a list of recommendations for any single stakeholder. Governments have a large role to play in the transition to sustainability; but this guide has been developed by stakeholders for stakeholders, be they governments, First Nations, businesses or non-profit organizations.

Although the time has passed for asking governments to solve all our problems, there is a danger in leaving critical decisions in the hands of any one sector or interest. That is why the *Projet de société* is trying to provide a broadly agreed upon sense

of direction as to where and how Canada should be moving, without assigning specific priorities or responsibilities.

The concept of a covenant or a compact helps to illustrate what must happen to implement this kind of decentralized strategy (Box 76). A covenant is an agreement between any number of people or groups to do, or not to do, a certain thing. What this guide proposes is that stakeholders take it upon themselves to commit to doing something that will contribute to the vision of sustainability that it outlines.

There is no higher authority watching over us. As a multistakeholder body, it is up to each of us to pledge to meet part of the challenge. Canadians have a lot to lose if we do not manage to move the sustainable development agenda forward in a coherent, committed way. The *Projet de société* provides a forum through which all sectors of society can make a solemn agreement to act.

We must continue research into problems and solutions, and monitor our progress. We must adopt innovative strategies and techniques and fashion flexible policies and institutions ready to adapt in the light of new scientific information, new problems and technological opportunities.

– Business Council on National Issues, *Towards a Sustainable and Competitive Future*, 1992

6.3 Targets, monitoring and priorities

Setting targets and priorities is a delicate task, but one that can be facilitated if, by addressing the intersectoral transition tools identified in Chapter 5, it disarms those stakeholders trying to advance their specific concerns. Because transition tools cut across sectors, the focus then becomes not which sector is a priority, but which transition tool will work the best. The choice of which tool to focus on first will likely be based on existing windows of opportunity or which tool will give the most return on investment.

It will also be important to work first on some issues whose early resolution will build confidence for the more difficult choices ahead. Just as there is a need to mix practical action with longer-term strategic planning, so too is it important to have some early successes in implementation to build support for the more difficult transition steps ahead.

Timing is a very critical factor in an implementation strategy. Advantage must be taken of any windows of opportunity that may currently be open, considering, for example, the current government's mandate, concern over unemployment, and the loss of major resource bases such as the East coast groundfish stocks. It also may mean taking advantage of ongoing review forums examining key issues such as social programs, economic instruments or science and technology policy.

Box 76

Covenants

Covenants are voluntary agreements, concluded between a number of actors, that have the status of binding contracts. They can play a valuable role as implementation tools by providing a concrete program within a more general legal framework, and by enabling laws to be implemented through the issuance or cancellation of permits whose conditions form part of the covenant. They allow for greater speed, flexibility and efficiency because the initiative for developing and monitoring their measures is transferred to industry.

Oil dependent countries paid over $50 billion in 1991 to protect the Kuwait oil fields during the Persian Gulf War.

Although it is important to have some quick successes at the beginning, it is equally important to embark on some of the longer-term transitions now, so that they are not left until too late. Some steps toward sustainability may be very difficult to undertake, but it must be emphasized that the longer they are deferred, the more dramatic the changes required will be and the harder it will be to make them.

Sustainability strategies or plans, such as those now being legislated for federal departments, will also need constant monitoring, evaluating and updating. Individual governments, sectors and interests will have to evaluate their own success at making the transition to sustainability in order to update, improve and re-focus their initiatives.

There will also be a need to monitor the larger national picture and to provide some kind of evaluation of how Canada is doing as a nation and how its transitions might be modified to reflect new trends and needs. There may be a role for an organization like the *Projet de société* in such an effort.

One of the key tasks at this point is to build commitment across Canada to sustainability transitions. It could come through a process where sectors and interests are engaged in a discussion of the vision, principles, choices, and transition tools outlined in this document. They could also improve this guide by providing more information about key sustainability initiatives under way, adapting some of the choicework to their own needs or expanding the discussion of transition tools.

There may also be an opportunity through this elaboration and commitment-building process to define a number of key priorities to address at various levels. If it were possible to build consensus around a number of concerns that need to be addressed at the national level, an organization like the *Projet de société* could also provide a forum to facilitate the necessary work.

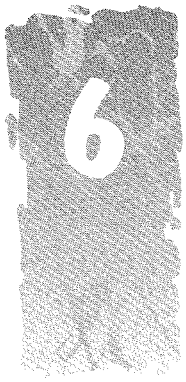
6.4 The bottom line

Unlike most environmental protection programs and many sustainable development proposals, this guide does not call for or require new funding, but rather a reallocation of existing financial flows. This will involve changes to both the revenues and expenditures of governments, First Nations, businesses, non-profit organizations and individuals.

Far from suggesting that transitions to sustainability will cost billions of dollars per year, it identifies substantial opportunities for *reducing* Canada's financial, environmental and social deficits as an integral part of the transition.

There is no magic involved here, only the recognition that sustainability involves a radical change in our accounting and pricing systems, one that requires much more transparency and honesty. Although most energy, food and water prices will increase, personal income and corporate taxes will tend to decrease as governments gradually get out of the subsidy business and allow market forces to reflect more of the costs involved, notably the environmental and social costs that are currently hidden in other accounts or deferred. This is good news for business as more revenue flows will shift from the public to the private sector.

One of the many challenges we face is how to engage the typical economist, accountant and stockbroker in applying sustainable development in an equitable manner. By adopting truly sustainable



models, Canada will eventually be able to reduce its deficits to more responsible levels, and then concentrate its resources on improving economic health, environmental stability and social equity at home and abroad. In fact, sustainability offers considerable potential for increasing long-term employment, improving health care and reducing the deficit without raising personal income or corporate taxes.

Sustainable development will involve modifying some other characteristics of Western society. Average lifespans may no longer continue to lengthen as attention turns to improving quality of life rather than extending it by technology and spiralling health costs. Mobility levels may also decrease as it becomes more expensive to fly across continents (or drive to the mall), but there will be more human and family contact as telecommunication costs decrease and employment patterns become more local and regional rather than national and international.

Foreign aid programs will eventually be replaced with more equitable trading practices and more regional self-reliance. Prices of luxury products flown in from around the world will sharply increase, but local economies should improve.

There will, of course, be costs, but most of them will be short-term social costs that can be paid with political courage and public will, bolstered by attitudinal and behavioural change. The burden of these costs could be mitigated by prevention and planned shifts in consumption patterns and employment which reflect social equity principles.

The capacity to act takes many forms, and the options available are limited only by our fear, our lack of imagination, or a belief that specific "politically correct" strategies must be followed. While there exists a capacity to act, there is the possibility of change.

– Marilyn Waring, *If Women Counted*, 1988

The more dramatic human costs associated with the ecological and social collapse that results when the carrying capacity of a resource or a country is exceeded, be it the fisheries crisis in Newfoundland or the tragedy of Rwanda, can and must be avoided.

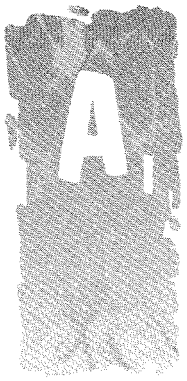
Sustainability presents humanity with an enormous challenge, one that we cannot ignore. Although it may lead us to question our beliefs and ways of living, it also represents a rare opportunity. It invites an exciting and vigorous re-evaluation of our social and economic institutions, priorities, decision-making processes and values.

This may appear to be an overwhelming and daunting task, but we need only remind ourselves that we have no other choice. We must, in this generation, solve the dilemma of how to leave a world of natural beauty and opportunity for our children and their children to enjoy.

A

Annexes

Annex I: Bibliography
Annex II: Sustainability initiatives and contacts
Annex III: List of acronyms



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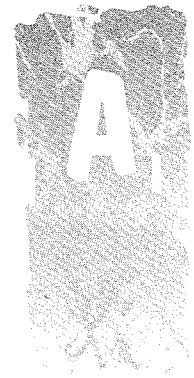

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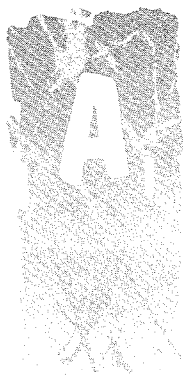

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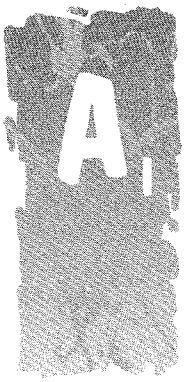

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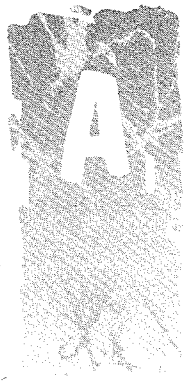

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Regional

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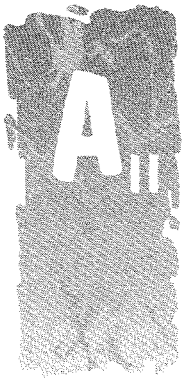


Annex II: Sustainability initiatives and contacts

In preparing this report, the *Projet de société* consulted with many individuals, governments and organizations across Canada. For further information about organizations and initiatives specifically noted in the report, please refer to the following contact list. It represents only a small sampling of the work currently being undertaken in Canada to implement the principles of sustainable development, but we hope it will provide some initial contact points for those interested in finding out more about these initiatives.

National

Federal government:

Agriculture and Agri-Food Canada. Contact: Michael Presley, Chief, Environmental Strategic Policy, Environment Bureau, Agriculture and Agri-Food Canada, Room 670, 930 Carling Avenue, Ottawa, Ontario K1A 0C5. Tel. (613) 943-1611 (ext. 2245), Fax (613) 943-1612.

Auditor General of Canada. Contact: Cameron Young, Principal, Audit Operations Branch, Office of the Auditor General of Canada, 240 Sparks Street, Ottawa, Ontario K1A 0G6. Tel. (613) 995-1925.

Biodiversity. Contact: John Herity, Director, Biodiversity Convention Office, Environment Canada, 351 St. Joseph Blvd., 5th Floor, Hull, Quebec K1A 0H3. Tel. (819) 953-4374, Fax (819) 953-1765.

Canada's Model Forest Program. Contact: Richard Baerg, Canadian Forest Service, Natural Resources Canada. Tel. (819) 997-1107.

Canada Mortgage and Housing Corporation. Contact: Jack Smugler, Senior Officer, International Relations Division National Office, CMHC, 700 Montreal Road, Ottawa, Ontario K1A 0P7. Tel. (613) 748-2468, Fax (613) 748-2302.

Canada Ports Corporation. Tel. (613) 957-6787.

Canadian International Development Agency. Tel. (819) 997-5456.

Canadian Environmental Protection Act (CEPA) Review. Contact: Ruth Wherry, Senior Policy Advisor, CEPA Office, Environment Canada, Place Vincent Massey, 5th floor, 351 St. Joseph Boulevard, Hull, Quebec K1A 0H3. Tel. (819) 997-1342, Fax (819) 997-0449.

Canadian Heritage, Department of. Tel. (819) 997-0055.

Consulting and Audit Canada. Contact: Ted Manning. Tel. (613) 947-2335. OR, Gord Clifford. Tel. (613) 995-8247, 9th Floor, Tower B, 112 Kent Street, Place de Ville, Ottawa, Ontario K1A 0S5. Fax (613) 943-1097.

Cultural Resource Management Policy. Contact: Sharon Jeannotte, Acting Chief, Strategic Planning and Coordination, Canadian Heritage, Jules Léger Building, Terrasses de la Chaudiere, 25 Eddy St., 12th floor, Hull, Quebec K1A 0M5.

Efficiency and Alternative Energy Program. Contact: Natural Resources Canada, Tel. (613) 995-0865.

Environmental Citizenship Initiative. Contact: Environment Canada, 25 Eddy Street, 3rd floor, Hull, Québec. Tel. (819) 953-9449.

Federal Committee for Environmental Emergencies. Contact: Sam Baird, Manager, Departmental Emergencies Secretariat, Environmental Emergencies Branch, National Programs Directorate, Environmental Protection Service, Environment Canada, Place Vincent Massey, 17th floor, 351 St. Joseph Boulevard, Hull, Quebec K1A 0H3. Tel. (819) 997-4277, Fax (819) 997-1529.

Federal Buildings Initiative. Contact: Rick McKenzie, Director, Energy Ventures Division, Natural Resources Canada. Tel. (613) 996-4079.

Fisheries and Oceans, Department of. Tel. (613) 993-0600.

House of Commons. Contact: Marian Campbell, Environmental Projects Officer, Office of the Environment, Room 390, Wellington Building, House of Commons, Ottawa, Ontario K1A 0A6. Tel. (613) 943-1564, Fax (613) 943-0479.

House of Commons Parliamentary Standing Committee on Environment and Sustainable Development. Tel. (613) 996-1595.

Indian and Northern Affairs Canada. Indian and Inuit Programs. Contact: John Graham, Director General, Lands and Environment Branch, Land and Trusts Services. Tel. (819) 997-8212.

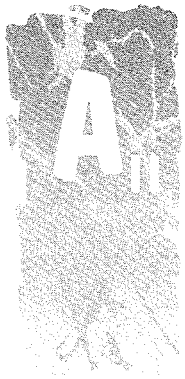
Indian and Northern Affairs Canada. Northern Programs. Contact: Hiram Beaubier, Director General, Natural Resources and Environment Branch, Northern Affairs Program. Tel. (819) 997-9381. OR, Leslie Whitby, Director, Environment and Renewable Resources Directorate, Natural Resources and Environment Branch, Northern Affairs Program, Room 615, 10 Wellington Street, Hull, Quebec K1A 0H4. Tel. (819) 997-2728.

International Joint Commission. Contact: Philip Slyfield, Secretary, Canadian Section, 100 Metcalfe Street, 18th floor, Ottawa, Ontario K1P 5M1. Tel. (613) 995-2984, Fax (613) 993-5583.

International Organization for Standardization, Environmental Management Committee. Contact: Canadian Standards Assocation, 178 Rexdale Boulevard, Etobicoke, Ontario M9W 1R3. Tel. (416) 747-4000.

National Capital Commission. Contact: Louise Kingsley, Senior Officer, Environmental Assessment and Planning, National Capital Commission, 161 Laurier Avenue West, Ottawa, Ontario K1P 6J6. Tel. (613) 239-5591, Fax (613) 239-5393.

National Office of Pollution Prevention. Contact: Environment Canada. Tel. (819) 953-9086, Fax: (819) 953-7970.



National Research Council. Contact: Terry B. Kimmel, Business Development Office, National Research Council, Institute for Environmental Research and Technology, Building M-12, Montreal Road, Ottawa, Ontario K1A 0R6. Tel. (613) 990-6618, Fax (613) 957-8231.

Natural Sciences and Engineering Research Council. Contact: Tel. (613) 995-6295.

Parks Canada. Contact: Sharon Jeannotte, Acting Chief, Strategic Planning and Coordination, Canadian Heritage, Jules Léger Building, Terrasses de la Chaudière, 25 Eddy Street, 12th floor, Hull, Quebec K1A 0M5.

Program on Energy Research and Development. Contact: Office of Energy Research and Development, Natural Resources Canada, 14th floor, 580 Booth Street, Ottawa, Ontario K1A 0E4. Tel. (613) 995-0478.

Public Works and Government Services. Contact: Michael Dawson, Corporate Policy, PWGS, 15 A1, Phase III, Place du Portage, Hull, Quebec K1A 0M2. Tel. (819) 956-0885, Fax (819) 956-4962.

Science and Technology Review. Contact: Secretariat for Science and Technology Review, Industry Canada, 11th floor, East Tower, 235 Queen Street, Ottawa, Ontario K1A 0H5. Tel. (613) 943-7034.

Social Sciences and Humanities Research Council of Canada. Contact: A. Fox, Director, Policy, Planning and International Relations Division, SSHRCC, 350 Albert Street, Ottawa, Ontario K1P 6G4. Tel. (613) 992-5125, Fax (613) 992-1787.

Statistics Canada. Contact: Michael Bordt, National Accounts and Environment Division, Statistics Canada, Tunney's Pasture, 21A R.H. Coates Building, Ottawa, Ontario K1A 0T6. Tel. (613) 951-8585, Fax (613) 951-3618.

Transport Canada. Contact: Pierre Renart, Director, Government Relations and Environmental Affairs, Policy and Coordination Group, Transport Canada, 26th floor, Tower C, Place de Ville, Ottawa, Ontario K1A 0N5. Tel. (613) 991-6503, Fax (613) 991-6422.

Water and Economy. Contact: Frank Quinn, Head, Water Policy, Water and Habitat Conservation Branch, Canadian Wildlife Service, Environment Canada, Ottawa, Ontario K1A 0H3. Tel. (819) 953-1513, Fax (819) 994-0237.

Other national sustainable development initiatives and contacts:

ACCC Environmental Citizenship Program. Contact: Ruth Watson, Director, ACCC Environmental Citizenship Program, Association of Community Colleges, Suite 200, 1223 Michael Street North, Ottawa, Ontario K1J 7T2. Tel. (613) 746-7639. Email: rwatson@accc.ca.

Acelerated Reduction and Elimation of Toxics (ARET). Tel. (819) 953-9086, Fax (819) 953-7970.

Automotive Manufacturing Pollution Prevention Project. Contact: Mark Nantais, President, Canadian Motor Vehicle Manufacturer's Association. Tel. (416) 364 9333.

Automotive Parts Manufacturers Association. Contact: Mark Cotter, Director, Environment, 516 – 195 The West Mall, Etobicoke, Ontario M9C 5K1. Tel. (416) 620-4220, Fax (416) 620-9730.

Business Principles for a Sustainable and Competitive Future. Contact: The Business Council on National Issues, Royal Bank Centre, 90 Sparks Street, Suite 806, Ottawa, Ontario K1P 5B4. Tel. (613) 238-3727, Fax (613) 236-8679.

Canadian Bar Association (CBA). Contact: Marshall Burgess, Chair, Legislation and Law Reform Committee, National Environmental Law Section, Canadian Bar Association. Tel. (902) 424-5300. OR, Bruce Willis, Chair, National Environmental Law Section, Canadian Bar Association. CBA, 902-50 O'Connor Street, Ottawa, Ontario K1P 6L2. Tel. (403) 668-5252.

Canadian Centres of Sustainable Development Research. Contact: Ann Dale, Sustainable Development Research Centre, University of British Columbia. Tel. (604) 822-6899.

Canadian Council for International Cooperation. Contact: Peter Padbury, Environment Coordinator, CCIC, 1 Nicholas St., Suite 300, Ottawa, Ontario K1N 7B7. Tel. (613) 241-7007.

Canadian Council of Ministers of the Environment. Contact: Barbara Czech, Director of Communications, 326 Broadway, Suite 400, Winnipeg, Manitoba. Tel. (204) 948-2090.

Canadian Environmental Network. Contact: Box 1289, Station B., Ottawa, Ontario K1P 5R3. Tel. (613) 563-2078. Email: cen@web.apc.org.

Canadian Healthy Communities Network. Contact: Stephen Jewczyk, Chairperson, City of Mount Pearl, 3 Centennial Street, Mount Pearl, Newfoundland A1N 2C2. Tel. (709) 748-1029.

The Canadian Healthy Communities Network (national) has provincial-territorial network contacts for Alberta; British Columbia; Manitoba; Nova Scotia; Ontario; Quebec; and Saskatchewan, as well as contacts in hundreds of communities across Canada.

Canadian Institute of Chartered Accountants. Contact: Randy Billings, Ernst and Young Chartered Accountants, Toronto-Dominion Centre, P.O. Box 251, Toronto, Ontario M5K 1J7. Tel. (416) 864-1234.

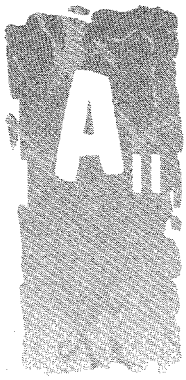
Canadian Institute of Planners. Contact: Sylvia Planka, Communications and Public Relations. Tel. (800) 207-2138.

Canadian Labour Congress. Contact: David Bennett, 2841 Riverside Drive, Ottawa, Ontario K1V 8X7. Tel. (613) 521-3400

Canadian Manufacturers Association. Contact: Doreen Henley, CMA, 130 Albert Street, Suite 302, Ottawa, Ontario K1P 5G4. Tel. (613) 233-8423.

Canadian Network for Environmental Education and Communications. Contact: c/o Ecologic, P.O. Box 1514, Antigonish, Nova Scotia B2G 2L8. Tel (902) 863-5984, Fax (902) 863-9481.

Canadian Peace Alliance. Contact: CPA, 5-555 Bloor Street West, Toronto, Ontario M5S 1Y6.



Canadian Society of Landscape Architecture. Contact: Larry Patterson, Executive Director, 1339 Fifteenth Avenue SW, Suite 310, Calgary, Alberta T3C 3V3. Tel. (403) 228-6591.

Canadian Urban Research on the Environment. Contact: Dan Friesen, Research Consultant, Federation of Canadian Municipalities, 24 Clarence Street, Ottawa, Ontario K1N 5P3. Tel. (613) 241-8484.

Council of Canadians with Disabilities. Contact: April D'Aubin, Council of Canadians with Disabilities, 294 Portage Avenue, #926, Winnipeg, Manitoba R3C 0B9. Tel. (204) 947-0304, Fax (204) 942-4625.

E.B. Eddy Forest Products. Contact: 1600 Scott Street, 7th floor, Ottawa, Ontario K1Y 4N7. Tel. (613) 725-6743.

EarthEnterprise Tool Kit. Contact: IISD, 161 Portage Avenue East, 6th floor, Winnipeg, Manitoba R3B 0Y4. Tel. (204) 958-7735.

Economic Instruments Collaborative. Contact: Gene Nyberg, NRTEE, 1 Nicholas St., Suite 1500, Ottawa, Ontario K1N 7B7. Tel. (613) 992-7189.

Global Education Program. Contact: Tom Lyons, Ontario Teachers' Federation, 1260 Bay Street, Toronto, Ontario M5R 2B5. Tel. (416) 966-3424.

Intergovernmental Committee on Urban and Regional Research (ICURR). Contact: ICURR, 150 Eglinton Avenue East, Suite 301, Toronto, Ontario M4P 1E8. Tel. (416) 973-5629, Fax (416) 973-1375.

International Council for Local Environmental Initiatives (ICLEI). World Secretariat: 8th floor, East Tower, City Hall, Toronto, Ontario M5H 2N2. Tel. (416) 392-1462, Fax (416) 392-1478.

International Development Research Centre. Contact: Theodora Carroll-Foster, Agenda 21 Unit, IDRC, P.O. Box 8500, 250 Albert Street, Ottawa, Ontario K1G 3H9. Tel. (613) 236-6163, Fax (613) 238-7230.

International Institute for Sustainable Development. Contact: Heather Creech, Director of Communications and Partnerships, 161 Portage Avenue East, 6th floor, Winnipeg, Manitoba R3B 0Y4. Tel. (204) 958-7700, Fax (204) 958-7710.

Inuit Circumpolar Conference (ICC). Contact: Chester Reimer, ICC, 504-170 Laurier Avenue West, Ottawa, Ontario K1P 5V5. Tel. (613) 563-2642.

Learning for a Sustainable Future. Contact: Jean Perras, Executive Director, 45 Rideau Street, Suite 303, Ottawa, Ontario K1N 5W8. Tel. (613) 562-2238.

National Community Tree Foundation. Contact: 1550-220 Laurier Avenue West, Ottawa, Ontario. Tel. (613) 567-5545.

National Round Table on the Environment and the Economy. Contact: Kelly Hawke Baxter, Director of Communications, NRTEE, 1 Nicholas St., Suite 1500, Ottawa, Ontario K1N 7B7. Tel. (613) 992-7189.

National Round Table on the Environment and the Economy's Task Force on Education. Contact: Carla Doucet, Policy Advisor, NRTEE. Tel. (613) 992-7189.

One Voice. Contact: One Voice, 1005-350 Sparks Street, Ottawa, Ontario K1R 7S8. Tel. (613) 238-7624.

Projet de société. Contact: Planning for a Sustainable Future, 1 Nicholas Street, Suite 1500, Ottawa, Ontario K1N 7B7. Tel. (613) 992-7189.

Royal Architectural Institute of Canada. Contact: Tim Kehoe, Executive Director, RAIC, 55 Murray Street, Suite 330, Ottawa, Ontario K1N 5M3. Tel (613) 241-3600.

Royal Society of Canada. Contact: David Henderson, Royal Society of Canada, P.O. Box 9734, Ottawa, Ontario K1G 5J4. Tel. 613-991-6990, Fax (613) 991-6996.

Rural and Small Town Research and Studies Programme. Contact: Mary Simpson, Rural and Small Town Programme, Mount Allison University, Sackville, New Brunswick E0A 3C0. Tel. (506) 364-2393.

Communities participating in this program include Cavendish, P.E.I.; Georgetown, P.E.I.; Summerside, P.E.I.; Sussex, N.B.; McAdam, N.B.; Campobello Island, N.B.; Kimberley, B.C.; and Creston Valley, B.C.

Shell Canada. Contact: Linton Kulak, Director, Corporate Health, Safety and the Environment, 26th floor, Room 2662, 400 4th Avenue SW, Calgary, Alberta T2P 3H5. Tel. (403) 691-2091.

Student Action for a Viable Earth (SAVE Tour). Not touring during 1994-95.

SustainABILITY. Contact: Carla Doucet, Policy Advisor, Education, NRTEE, 1 Nicholas Street, Suite 1500, Ottawa, Ontario K1N 7B7. Tel. (613) 947-0668, Fax (613) 992-7385.

Tourism Industry Association of Canada. Contact: 130 Albert Street, Ottawa, Ontario. Tel. (613) 238-3883.

WEB/Nirv Centre. Contact: Rory O'Brien. Tel. (416) 596-0212

Whitehorse Mining Initiative. Contact: Mining Association of Canada, 1105 - 350 Sparks Street, Ottawa, Ontario K1R 7S8. Tel. (613) 233-9391.

Women and Sustainable Development, Canadian Perspectives (Conference). Contact: Shawna Sylvester, Conference Coordinator. Tel. (604) 822-9154.

Women's International League for Peace and Freedom (WILPF). Contact: Marcy Holyk, R.R. #3, Ashton Station Road, Ashton, Ontario K0A 1B0. Tel. (613) 253-6395.

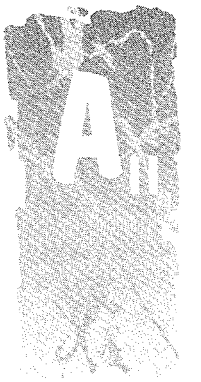
Regional

Atlantic Canada

Atlantic Canada Opportunities Agency. Contact: Head Office, P.O. Box 6051, 644 Main Street, Moncton, New Brunswick E1C 9J8. Tel. (506) 851-2271, Fax (506) 851-7403.

Atlantic Coastal Action Plan (ACAP). Contact: Jim Ellsworth, Manager, ACAP, Environment Canada, 4th floor, Queen Square, 45 Alderney Drive, Dartmouth, Nova Scotia B2Y 2N6. Tel. (902) 426-2131, Fax (902) 426-4457.

ACAP communities include St. John's, Nfld.; Humber Arm, Nfld.; Bedeque Bay, P.E.I.; Cardigan Bay, P.E.I.; Sydney, N.S.; Lunenburg, N.S.; Mahone Bay, N.S.; Annapolis Royal, N.S.; Pictou, N.S.; Saint John, N.B.; St. Croix, N.B.; Madawaska, N.B.; Miramichi, N.B.; Letang Estuary, N.B.



Canada-Nova Scotia Cooperation Agreement on Sustainable Economic Development. Contact: Brad Hodgins, Provincial Coordinator, COASED, 11th floor, Queen Square, 45 Alderney Drive, Darmouth, Nova Scotia B2Y 2N6. Tel. (902) 426-1649.

Gulf of Maine Council on the Marine Environment. Contact: Secretariat, New Brunswick Department of Environment, P.O. Box 6000, 364 Argyle Street, Fredericton, New Brunswick E3B 5H1.

St. Croix International Waterway Commission. Contact: 435 Milltown Boulevard, St. Stephen, New Brunswick E3L 1J9.

Great Lakes-St. Lawrence River

Great Lakes Remedial Action Plans (RAPs). Contact: Madhu Malhutra, Great Lakes Regional Office, Environment Canada, Public Involvement Coordinator. Tel. (416) 954-5150. OR, Bruce Kirschener, International Joint Commission Great Lakes Regional Office, 100 Ouellette Avenue, 8th floor, Windsor, Ontario N9A 6T3. Tel. (519) 257-6710.

RAP communities in Ontario include Peninsula Harbour; Jackfish Bay; Nipigon Bay; Thunder Bay; St. Mary's River; Spanish River Mouth; Collingwood Harbour; Severn Sound; St. Clair River; Wheatley Harbour; Niagara River; Hamilton Harbour; Metro Toronto; Port Hope; Bay of Quinte; St. Lawrence River.

Great Lakes 2000. Contact: Great Lakes Regional Office. Tel. (519) 257-6700.

International Joint Commission. Contact: Philip Slyfield, Secretary, Canadian Section, 100 Metcalfe Street, 18th floor, Ottawa, Ontario K1P 5M1. Tel. (613) 995-2984, Fax (613) 993-5583.

St. Lawrence Vision 2000. Contact: International Joint Commission (see above.)

Northern Canada

Arctic Environmental Protection Strategy. Contact: ICC (see above.)

Arctic Environmental Strategy. Contact: Lillian Blondin, Communications Branch, Indian and Northern Affairs Canada, Ottawa, Ontario K1A 0H4. Tel. (819) 997-8407.

Inuit Regional Conservation Strategy. Contact: ICC (see above.)

Principles for a Comprehensive Arctic Policy. Contact: ICC (see above.)

Western Canada

Cascadia. Contact: Dr. Allan Artibise, International Institute for Sustainable Cities, Suite 1150 – 555 West Hastings Street, Harbour Centre, Vancouver, British Columbia V6B 4N5. Tel. (604) 666-0061, Fax (604) 666-0009.

Fraser Basin Management Program. Contact: David Marshall, Director, 700 West Georgia Street, Vancouver, British Columbia V7Y 1B6. Tel. (604) 660-1177, Fax (604) 660-3600.

Fraser River Estuary Management Program. Contact: Dianna Colnett, Fraser River Estuary Management Program, 301-960 Quayside Drive, New Westminster, British Columbia V3M 6G2. Tel. (604) 525-1047.

Georgia Basin Initiative. Contact: Joan Sawicki, Parliamentary Secretary to the Minister of Municipal Affairs, Parliament Buildings, Victoria, British Columbia V8V 1X4. Tel (604) 953-3009, Fax (604) 387-7973.

Sustainable Development for the Great Plains. Contact: International Institute for Sustainable Development, 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba R3B 0Y4. Tel. (204) 958-7701.

Provincial, Territorial and Local

Newfoundland

Newfoundland and Labrador Round Table on the Environment and the Economy. Contact: Tom Graham, Director of Policy and Planning, Department of Environment and Lands, P.O. Box 8700, St. John's, Newfoundland A1B 4J6. Tel. (709) 729-0027.

Nova Scotia

Dartmouth Lakes Advisory Board. Contact: Audrey Manzer, Chairperson, Dartmouth Lakes Advisory Board, c/o Library, Department of Municipal Affairs, P.O. Box 216, Halifax, Nova Scotia B3J 2M4.

The Industrial Park as an Ecosystem. Contact: Ray Coté, School for Resource and Environmental Studies, Dalhousie University, 1312 Robie Street, Halifax, Nova Scotia. Tel. (902) 494-3632.

Nova Scotia Round Table on the Environment and the Economy. Contact: Dr. Chang Lin, Assistant to the Deputy Minister, Department of the Environment, 5151 Terminal Road, 5th floor, P.O. Box 2107, Halifax, Nova Scotia B3J 3B7. Tel. (902) 424-3617, Fax (902) 424-0644.

Nova Scotia Department of Natural Resources. Contact: David Hopper. Tel. (902) 424-8151.

Sustainable Communities Network of Nova Scotia. Contact: Karen Laine, Nova Scotia Environment and Development Coalition, Suite 502, 1657 Barrington Street, Halifax, Nova Scotia B3J 2A1. Tel. (902) 422-4276, Fax (902) 423-9736.

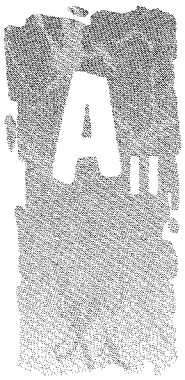
Prince Edward Island

Prince Edward Island Round Table on the Environment and the Economy. Contact: André Lavoie, Assistant Policy and Planning Coordinator, Department of Environmental Resources, 11 Kent Street, 4th floor, P.O. Box 2000, Charlottetown, Prince Edward Island C1A 7N8. Tel. (902) 368-5032, Fax (902) 368-5830.

Prince Edward Island's Department of Agriculture. Contact: John MacQuarry. Tel. (902) 836-5450.

New Brunswick

Action North. Contact: Atlantic Canada Opportunities Agency, P.O. Box 6051, 644 Main St., Moncton, New Brunswick E1C 9J8. Tel. (506) 851-2271.



McAdam Sustainable Development Strategy. Contact: John Flynn, Southwest Development Corporation, P.O. Box 8, Harvey Station, New Brunswick E0H 1H0. Tel. (506) 366-3022, Fax (506) 366-3444.

New Brunswick Round Table on the Environment and the Economy. Contact: David Besner, Director Policy and Intergovernmental Affairs, Department of the Environment, 364 Argyle Street, 2nd floor, P.O. Box 6000, Fredericton, New Brunswick E3B 5H1. Tel. (506) 453-3703, Fax (506) 457-7800.

New Brunswick's Commission on Land Use and the Rural Environment (CLURE). Contact: CLURE, c/o N.B. Department of the Environment, P.O. Box 6000, Fredericton, New Brunswick E3B 5H1. Tel. (506) 453-3095, Fax (506) 453-3377.

Quebec

Conseil de la Conservation et de l'environnement. Contact: Germain D. Gerard, 800 Place d'Youville, 20e étage, Québec G1R 3P4. Tel. (418) 643-3818, Fax (418) 646-1693.

Gouvernement du Quebec. Contact: Robert Lauzon, Sous-ministériat au développement durable et à la conservation, Ministère de l'Environnement, 3900 rue Marly, Sainte-Foy, Québec G1X 4E4. Tel. (418) 643-7860, Fax (418) 643-7812.

Table ronde québécoise sur l'environnement et l'économie. Contact: André Harvey, Assistant Deputy Minister, Sustainable Development and Conservation, Department of Environment and Wildlife, 3900 Marly Street, 6th floor, Sainte-Foy, Quebec G1X 4E4. Tel (418) 643-7860, Fax (418) 643-7812.

Vive Montréal en santé. Contact: Réal Lacombe, Réseau québécois de villes et villages en santé, 1050, chemin Saint-Foy, Québec G1S 4L8. Tel. (418) 682-7959.

Ontario

A Vision for Ottawa: City of Ottawa's New Official Plan. Contact: Rasheda Nawaz, City of Ottawa Planning Department, 111 Sussex Drive, Ottawa, Ontario K1N 5A1. Tel. (613) 564-1663.

Bay Area Restoration Council (BARC) of Hamilton-Wentworth and Halton Regions. ("Hamilton Harbour RAP") Contact: Room 329, Life Sciences Building, McMaster University, Hamilton, Ontario. Tel. (905) 525-9140 (ext. 27405), Fax (905) 521-2955.

Canada's Capital Region, Official Plan Review. Contact: Chris Bradshaw, Regional Municipality of Ottawa-Carleton Planning and Property Department, 111 Lisgar Street, Ottawa, Ontario. Tel. (613) 560-1229.

City of Guelph Wet-Dry Recycling Program. Contact: Jutta Siebel, City of Guelph, Engineers Department, City Hall, 59 Carden Street, Guelph, Ontario N1H 3A1. Tel. (519) 837-5604.

City of Ottawa Municipal Environmental Evaluation Process. Contact: Susan Costello, City of Ottawa, Department of Engineering Works, Environmental Management Branch, 111 Sussex Drive, Ottawa, Ontario K1N 5A1. Tel. (613) 564-1549, Fax (613) 564-4617.

City of Sudbury Ramsay Lake 100 Year Plan. Contact: Tin Chee Wu, Senior Planner, Regional Municipality of Sudbury, Regional Planning and Development Department, P.O. Box 3700 Station A, Sudbury, Ontario P3A 5W5. Tel. (705) 673-2171 (ext. 298).

Ontario's Commission on Planning and Development Reform (Sewell Commission). Contact: Ministry of Municipal Affairs, 777 Bay Street, Toronto, Ontario M5G 2E5. Tel. (416) 585-7000.

Ontario Green Communities Initiative. Contact: Enrico Nino, Program Manager, Community Outreach Programs, Energy Efficiency Branch, Ministry of Environment and Energy, 56 Wellesley Street West, 14th Floor, Toronto, Ontario M7A 2B7. Tel. (416) 327-1475.

Green Communities in Ontario include Atikokan; Barrie; Belleville; Collingwood; Cornwall; Elora; Guelph, London; Markham; Ottawa; Peterborough; Port Hope; Riverdale; Sarnia; Sault Ste. Marie; and Thunder Bay.

Ontario Healthy Communities Network. Contact: Margaree Edwards, Ontario Healthy Communities Network, 1350 Hawthorne Drive, Peterborough, Ontario K9J 7E8. Tel. (705) 745-5864.

Ontario Ministry of Environment and Energy. Contact: Ken Richards, Coordinator, Intergovernmental Relations Office, Ministry of Environment and Energy, 135 St. Clair Avenue West, 8th floor, Toronto, Ontario M4V 1P5. Tel. (416) 323-4652, Fax (416) 323-4442.

Ontario Premiers' Council on Economic Renewal. Contact: Ontario Premiers' Council. Tel. (416) 326-6754.

Ontario Premiers' Council on Health, Well-Being and Social Justice. Contact: Ontario Premiers' Council. Tel. (416) 326-6754.

Ontario Round Table on Environment and Economy. Contact: Ken Ogilvie, Ontario Round Table on Environment and Economy, 1 Dundas Street West 2502, Toronto, Ontario M5G 1Z3. Tel. (416) 327-2032.

Local Round Tables in Ontario exist in Guelph; Haldimand-Norfolk; London; Muskoka; Ottawa-Carleton; Owen Sound and Area; Peterborough; Prince Edward; Sarnia-Lambton; Stratford; Sudbury; and Vaughan (City of). Provincial contact: Ron Nielsen, Ontario Round Table on Environment and Economy. Tel. (416) 327-7029.

Ontario's Waste Reduction Action Plan. Contact: Ontario Waste Reduction Office, Ministry of the Environment, 135 St. Clair Avenue West, Toronto, Ontario M4V 1P5.

Our Farm Environmental Agenda. Contact: The Ontario Federation of Agriculture, 491 Eglinton Avenue West, Toronto, Ontario M5N 1A8. Tel. (416) 485-3333.

Royal Commission on the Future of the Toronto Waterfront. Contact: Waterfront Regeneration Trust, 207 Queen's Quay West, Suite 580, Toronto, Ontario M5W 2V4. Tel. (416) 314-9490.

Society for Ecological Restoration (SER), Ontario Chapter. Contact: John Ambrose, Metro Toronto Zoo, P.O. Box 280, West Hill, Ontario M1E 4R5. Tel. (416) 392-5973.

Toronto State of the City Report. Contact: Healthy City Office, 20 Dundas Street West, Suite 1036, Toronto, Ontario M5G 2C2.

Cities and regions with experience in preparing state of environment reports include, among others Burnaby; Hamilton-Wentworth; Kitchener-Waterloo; Montreal; Ottawa-Carleton; Toronto; Saguenay-Lac Saint-Jean; and Winnipeg.

"Towards a Conservation Strategy for Ontario." Contact: Chris Winter, Conservation Council of Ontario. Tel. (416) 969-9637.

Vision 2020: Directions for Creating a Sustainable Region. Regional Chairman's Task Force on Sustainable Development. Contact: Regional Municipality of Hamilton-Wentworth, 119 King Street West, 14th floor, P.O. Box 910, Hamilton, Ontario L8N 3V9. Tel. (416) 546-2195, Fax (416) 546-4364.

Manitoba

Community Choices: A sustainable communities program for Manitoba. Contact: Ross C. Thompson, 103 – 235 Eaton Avenue, Selkirk, Manitoba. Tel. (204) 785-5129, Fax (204) 785-5155.

Local Round Tables in Manitoba exist in Altona; Arborg; Armstrong; Beausejour; Birtle; Bowsman; Carman-Dufferin; Cartier; Churchill Tree Line; Coldwell/Lundar; Dauphin; Del-Win; Emerson; Flin-Flon; Gilbert Plains; Gimli and District; Glenboro; Grahamdale; Grandview and District; Grunthal; Hamiota; Headingley; La Broquerie Municipality; McCreary; Manitou; Melita and Area; Minnedos and District; Montcalm; Morris; Neepawa; North Cypress/Carberry; North Norfolk/Macgregor; Notre Dame de Lourdes; Pinawa; Rapid City; Reston and Area; Reynolds-Whitemouth; Riverton-Bifrost; Roblin; Rock Lake; Rossburn; Selkirk & Area; Shoal Lake; Southpark Community; St. Pierre; Stoney Mountain; Swan Valley; Somerset-Lorne; Souris River; Strathclair and Area; Southeast Angle Community; Ste. Agathe; St. Georges; Ste. Anne and District; Stonewall; Turtle River; Treherne-South Norfolk; Virden and District; Wawanesa and District; White School; Winkler and District; and Winnipegosis and District; Woodlands.

Manitoba's Round Table on Environment and Economy; Sustainable Development Strategy; Minerals Strategy; and Forest Policies etc. Contact: Bob Sopuck, Sustainable Development Coordination Unit, 305 – 155 Carlton Street, Winnipeg, Manitoba R3C 3H8. Tel. (204) 945-1124.

Manitoba Department of Environment. Contact: Dick Stephens, Director, Legislation and Intergovernmental Affairs, Manitoba's Department of Environment, Building 2, 139 Tuxedo Avenue, Winnipeg, Manitoba R3N 0H6. Tel. (204) 945-8132, Fax (204) 489-9860.

Saskatchewan

Saskatchewan Agriculture and Food. Contact: John Babcoch, Soil Conservation Specialist, Environment and Engineering Branch, Saskatchewan Agriculture and Food. Tel. (306) 787-9768.

Saskatchewan Department of Environment and Resource Management. Contact: Bruce Smith, Director, Policy Branch, Environment and Resource Management, 3211 Albert Street, Room 534, Regina, Saskatchewan S4S 5W6. Tel. (306) 787-5760, Fax (306) 787-0024.

Saskatchewan Round Table on the Environment and the Economy – no provincial round table exists, but several local community round tables do.

Local Round Tables in Saskatchewan exist in Creighton-Denare Beach; Estevan and Area; Kamsack and Area; Mid-Lakes; and Springside and Area. Provincial Contact: Riaz Ahmed, Community Environmental Management Program, Environment and Resource Management. Tel. (306) 787-1521.

South Saskatchewan River Valley 100 Year Plan. Contact: Meewassin Valley Authority. Tel. (306) 665-6887.

Alberta

Alberta Clean Air Strategy Alliance. Contact: Mike Kelly, Executive Director, CASA, Standard Life Centre, 14th floor, 10405 Jasper Road, Edmonton, Alberta T5J 3N4. Tel. (403) 427-9793.

Alberta Environmental Protection. Contact: Ron Hicks, Assistant Deputy Minister, Research and Strategic Services, Alberta Environmental Protection, 10th floor, 9915-108 Street, Edmonton, Alberta T5K 2C9. Tel. (403) 427-8155, Fax (403) 422-6305.

Alberta Forest Conservation Strategy. Contact: Bill Oppen, Corporate and Strategic Management, Alberta Environmental Protection. Tel. (403) 422-9615.

City of Calgary Environmental Policy. Contact: David Reynolds, City of Calgary Engineering and Environmental Services Department, Office for the Environment, P.O. Box 2100, Station M, Calgary, Alberta T2P 2M5. Tel. (403) 268-8050, Fax (403) 268-1529.

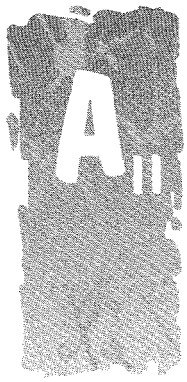
Environment Council of Alberta. Has been disbanded. For further information contact: Kathy Achieson, Policy Analyst, Alberta Department of Environmental Protection, 3rd Floor, Oxbridge Place, 9820 106th Street, Edmonton, Alberta. Tel. (403) 427-0047, Fax (403) 422-5136.

British Columbia

British Columbia Round Table on the Environment and the Economy. The provincial round table was disbanded in June 1994.

Local Round Tables in British Columbia exist in Anaheim Lake; Boundary; Bulkley Valley; Capital Regional District; Comox Valley; Cowichan; Creston Valley; Dawson Creek; Fort St. James; Howe Sound; Kamloops; Kelowna; Kimberly; Kingfisher; Kispiox/ Lakes; Ladysmith/Nanaimo; Nahatlatch; Nicola Watershed; North Columbia; Peachland; Penticton; Pitt Meadows; Prince George; Richmond; Robson; Salmon Arm; Salmon River; Saltspring; Skeena; Slocan Valley; South Kalum; South Surrey/White Rock; Sunshine Coast; Vanderhoof; West Arm; and Williams Lake. Provincial Contacts: Craig Darling, Commission on Resources and the Environment. Tel. (604) 387-1210. OR, Linda Thorstad, Fraser Basin Management Program. Tel. (604) 660-1177.

British Columbia Healthy Communities Network. Contact: Barbara Berry, British Columbia Healthy Communities Network, 2182 West 12th Avenue, Suite 103, Vancouver, British Columbia V6K 2N4. Tel. (604) 261-3478.



Commission on Resources and Environment. Contact: CORE, 1802 Douglas Street, 7th floor, Victoria, British Columbia V8V 1X4. Tel. (604) 387-1210.

Environmental Youth Alliance-Vancouver. Contact: Doug Ragen, Environmental Youth Alliance-Vancouver. Tel. (604) 737-2258.

Environmental Youth Alliance-Victoria. Contact: Environmental Youth Alliance-Victoria, Box 8100, Victoria, British Columbia V8W 3R8. Tel. (604) 383-2062.

Ministry of Environment, Lands and Parks. Contact: Toby Vigod, ADM, Corporate Policy, Planning and Legislation, Ministry of Environment, Lands and Parks, 810 Blanshard Street, 4th floor, Victoria, British Columbia V8V 1X5. Tel. (604) 356-7223, Fax (604) 387-5669.

Seniors Outreach Services. Tel. (604) 791-5531.

Sunshine Coast Wildlife Seniors Group. Tel. (604) 885-5997.

Vancouver City Plan. Contact: Anne McAfee, Associate Director of Planning, Planning Department, City of Vancouver, 453 West 12th Avenue, Vancouver, British Columbia V5Y 1V4. Tel. (604) 873-7451.

Western Canada Wilderness Committee. Contact: WCWC, 20 Water Street, Vancouver, British Columbia V6B 1A4, Tel. (604) 669-9453.

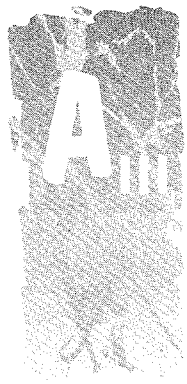
Northwest Territories

Department of Renewable Resources. Contact: Stu Lewis, Director, Policy and Planning Division, Department of Renewable Resources, 600, 5102 – 50th Avenue, Yellowknife, Northwest Territories X1A 3S8. Tel. (403) 920-8046, Fax (403) 873-0114.

Yukon

Department of Renewable Resources. Contact: Larry Duguay, Acting Director, Policy and Planning Branch, Department of Renewable Resources, 10 Burns Road, P.O. Box 2703, Whitehorse, Yukon Y1A 2C6. Tel. (403) 667-5634, Fax (403) 667-2438.

Yukon Council on the Environment and the Economy. Contact: Ken Carradine. Tel. (403) 667-5939.



Annex III: List of acronyms

ACCC Association of Canadian Community Colleges

ACOA Atlantic Canada Opportunities Agency

AES Arctic Environmental Strategy

AGCare Agricultural Groups Concerned About Resources and the Environment

APEC Asia-Pacific Economic Commission Forum

APHE Action Plan on Health and Environment

ARET Accelerated Reduction/Elimination of Toxics

BATEA Best Available Technology that is Economically Achievable

BCNI Business Council on National Issues

BEPAC Building Environmental Performance Assessment Criteria

CARC Canadian Arctic Resources Committee

CASA Clean Air Strategic Alliance (Alberta)

CCC [United Nations] Convention on Climate Change

CCIC Canadian Council for International Cooperation

CCME Canadian Council of Ministers of the Environment

CEC Commission on Environmental Cooperation

CEN Canadian Environmental Network

CEO Chief Executive Officer

CEPA Canadian Environmental Protection Act

CFC Chlorofluorocarbon

CIDA Canadian International Development Agency

CIEDAC Canadian Industry End-Use Database and Analysis Centre

CLC Canadian Labour Congress

CLURE Commission on Land Use and the Rural Environment (New Brunswick)

CMA Canadian Manufacturers Association

CMHC Canadian Mortgage and Housing Corporation

CORE Commission on Resources and Environment (British Columbia)

CPC Canada Ports Corporation

CRM Cultural Resource Management Policy (Parks Canada)

CSA Canadian Standards Act

CSD [United Nations] Commission on Sustainable Development

CURE Canadian Urban Research on the Environment

DFAIT Department of Foreign Affairs and International Trade

DFO Department of Fisheries and Oceans

DIAND Department of Indian Affairs and Northern Development

DND Department of National Defence

EAE Efficiency and Energy [Program]

EAG Environmental Advisory Group

EEC European Economic Community

EIA Environmental Impact Assessment

ENJEU Environment JEUness

EYA Environmental Youth Alliance

FBI Federal Buildings Initiative

FREMP Fraser River Estuary Management Program

G7 Group of Seven (USA, Canada, Germany, France, Italy, UK and Japan)

GATT General Agreement on Tariffs and Trade

GDP Gross Domestic Product

GEF Global Environment Facility

GIS Geographic Information Systems

GNP Gross National Product

GRIP Gross Insurance Income Plan

GST Government Sales Tax

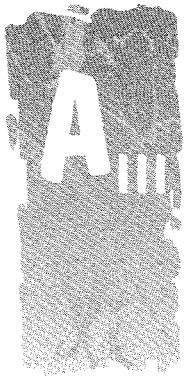
ha hectare

HDI Human Development Index (UNDP)

HEAL Health Action Lobby

IBRD International Bank for Reconstruction and Development

ICC Inuit Circumpolar Conference



ICLEI	International Council for Local Environmental Initiatives
ICPD	[United Nations] International Conference on Population and Development
ICURR	Intergovernmental Committee on Urban and Regional Research
IDRC	International Development Research Centre
IEE	Industrial Energy Efficiency Initiative
IISD	International Institute for Sustainable Development
IJC	International Joint Commission
IMF	International Monetary Fund
ISEW	Index of Sustainable Economic Welfare
IUCN	International Union for the Conservation of Nature
JPAC	Joint Public Advisory Committee
LRTs	Local Round Tables
MEEP	Municipal Environmental Evaluation Process
MEER	Municipal Environmental Evaluation Report
MVMA	Motor Vehicle Manufacturers' Association
NAAEC	North American Agreement on Environmental Cooperation
NACE	North American Commission on the Environmnet
NAFTA	North American Free Trade Agreement
NCC	National Capital Commission
NEPP	National Environmental Policy Plan (Netherlands)
NFU	National Farmers' Union
NISA	Net Income Stabilization Account
NRTEE	National Round Table on the Environment and Economy
NSDS	National Sustainable Development Strategy
NGO	Non-Governmental Organization
NSERC	Natural Sciences and Engineering Research Council
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PCPA	Pesticides Control Products Act
PERD	Program of Energy Research and Development
PSC	Public Service Commission
RAIC	Royal Architectural Institute of Canada
RAP	Remedial Action Plan
RMOC	Regional Municipality of Ottawa-Carleton
SAVE	Student Action for a Viable Earth
SDCU	Sustainable Development Coordination Unit (Manitoba)
SDRI	Sustainable Development Research Institute (University of British Columbia)
SER	Society for Ecological Restoration
SIFR	Strategy for International Fisheries Research
SMES	Small- and medium-sized enterprises
SSHRC	Social Sciences and Humanities Research Council
SOER	State of Environment Report
TAGS	The Atlantic Groundfish Strategy
TEK	Traditional Ecological Knowledge
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCED	World Commission on Environment and Development
WCWC	Western Canada Wilderness Committee
WGTA	Western Grain Transportation Act
WILPF	Women's International League for Peace and Freedom
WMI	Whitehorse Mining Initiative
WRAP	Waste Reduction Action Plan (Ontario)
WRAP	Waste Reduction and Prevention Act (Manitoba)
WTO	World Trade Organization

Please send any comments or suggestions to:

Projet de société **:**
Planning for a Sustainable Future

1 Nicholas Street, Suite 1500
Ottawa, Ontario, Canada K1N 7B7
Fax: (613) 992-7385

Notes:

Over 100 representatives of Canadian society have participated to date in the National Stakeholder Assemblies of the Projet de société, including:

Aboriginal Non-Profit Homes • Agriculture Canada • Assembly of First Nations • Association of Canadian Community Colleges • BC Environment and Development Working Group • Business Council on National Issues • Canada Mortgage and Housing Corporation • Canada World Youth • Canadian Arctic Resources Committee • Canadian Association of Petroleum Producers • Canadian Bankers Association • Canadian Bar Association • Canadian Chamber of Commerce • Canadian Chemical Producers • Canadian Conference of Catholic Bishops • Canadian Council of Ministers of the Environment • Canadian Council on International Co-operation • Canadian Environment Network • Canadian Environmental Industry Association • Canadian Federation of Agriculture • Canadian Federation of Independent Business • Canadian Healthy Communities Network • Canadian Institute of Planners • Canadian International Development Agency • Canadian Labour Congress • Canadian Manufacturers Association • Canadian Nature Federation • Canadian Peace Alliance • Canadian Petroleum Producers Institute • Canadian Pulp and Paper Association • Canadian Standards Association • Canadian Teachers Federation • Centre patronal de l'environnement du Québec • City of Vancouver • Clean Air Strategic Alliance • Clean Nova Scotia Foundation • Congress of Aboriginal People • Conseil de la conservation et de l'environnement • Consumers Association of Canada • Council of Forest Industries in BC • Department of Canadian Heritage • Department of Foreign Affairs and International Trade • Department of Justice • Department of National Defence • Ecology Action Centre • Environment Canada • Federal Environmental Assessment Review Office Fallsbrooke • Centre Federal Environmental Assessment Review Office • Federation of Canadian Municipalities • Finance Canada • Fisheries and Oceans Canada • Fisheries Council of Canada • Forum for Sustainability • Friends of the Earth • Government of Alberta • Government of British Columbia • Government of Manitoba • Government of New Brunswick • Government of Newfoundland • Government of Nova Scotia • Government of Ontario • Governnement du Québec • Government of Saskatchewan • Government of the Northwest Territories • Government of Yukon • Greenprint • Health Canada • INCO • Indian and Northern Affairs Canada • Indigenous Survival International • Industry Canada • Institute of Research on the Environment and the Economy • International Centre for Sustainable Cities • International Development Research Centre • International Federation of Institutes for Advanced Study • International Institute for Sustainable Development • Inuit Circumpolar Conference • Inuit Tapirisat of Canada • MAB/UNESCO-Canada • Mining Association of Canada • National Agriculture Environment Committee • National Anti-Poverty Association • National Round Table on the Environment and the Economy • Native Women's Association of Canada • Natural Resources Canada • Oceans Institute of Canada • Ontario Round Table on the Environment and the Economy • Partners for the Saskatchewan River Basin • Picton Round Table • Pollution Probe • Public Works and Government Services • Royal Society of Canada • Saskatchewan Waste Reduction • Shell Canada • Sierra Club • Toronto Board of Education • Transport Canada • Transport 2000 • Union québecoise pour la conservation de la nature • United Church of Canada • United Nations Association of Canada • United Native Nations • University of Calgary • University of New Brunswick, Environment and Sustainable Development Research Centre • VanCity Credit Union • Women and Environment, Education and Development