



House of Commons
Canada

**REPORT OF THE STANDING
COMMITTEE ON ENVIRONMENT**



A GLOBAL PARTNERSHIP

Canada and the Conventions of the United Nations Conference
on Environment and Development (UNCED)

April 1993

The Honourable David MacDonald, P.C., M.P.
Chairperson

BIBLIOTHÈQUE DU PARLEMENT
LIBRARY OF PARLIAMENT

3 2354 00056 551 8

BIBLIOTHÈQUE DU PARLEMENT
LIBRARY OF PARLIAMENT

3 2354 00060 729 4



The cover photograph was provided by the Canadian Space Agency

103
H7
34-3
E582
A127



House of Commons
Canada

REPORT OF THE STANDING COMMITTEE ON ENVIRONMENT

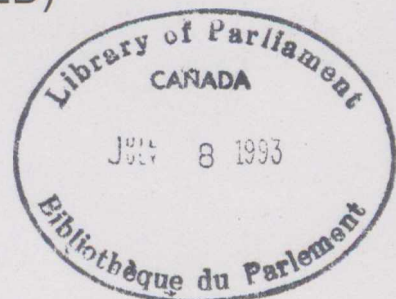


A GLOBAL PARTNERSHIP

Canada and the Conventions of the United Nations Conference
on Environment and Development (UNCED)

April 1993

The Honourable David MacDonald, P.C., M.P.
Chairperson



HOUSE OF COMMONS

Issue No. 62

Thursday, April 22, 1993

Chairperson: David MacDonald

CHAMBRE DES COMMUNES

Fascicule n° 62

Le jeudi 22 avril 1993

Président: David MacDonald

Minutes of Proceedings and Evidence of the

Standing Committee on Environment

Procès-verbaux et témoignages du

Comité permanent de l'environnement

RESPECTING:

In accordance with its mandate under Standing Order 108(2), a study of the Conventions of the United Nations Conference on Environment and Development (UNCED)

INCLUDING:

THE SEVENTH REPORT TO THE HOUSE:

A GLOBAL PARTNERSHIP

Canada and the Conventions of the United Nations Conference on Environment and Development (UNCED)

CONCERNANT:

Conformément au mandat que lui accorde l'article 108(2) du Règlement, une étude sur le Canada et les Conventions de la Conférence des Nations Unies sur l'environnement et le développement (CNUED)

Y COMPRIS:

LE SEPTIÈME RAPPORT À LA CHAMBRE:

UN PARTENARIAT À L'ÉCHELLE DE LA PLANÈTE

Le Canada et les Conventions de la Conférence des Nations Unies sur l'environnement et le développement (CNUED)

Third Session of the Thirty-fourth Parliament,
1991-92-93

Troisième session de la trente-quatrième législature,
1991-1992-1993

MEMBERS OF THE STANDING COMMITTEE ON ENVIRONMENT

CHAIRPERSON

David MacDonald, P.C., M.P. – Rosedale

VICE-CHAIRPERSONS

Yvon Côté, M.P. – Richmond—Wolfe
Paul Martin, M.P. – LaSalle—Émard

MEMBERS

Marlene Catterall, M.P. – Ottawa West
Lee Clark, M.P. – Brandon—Souris
Jim Fulton, M.P. – Skeena
Brian O’Kurley, M.P. – Elk Island
Ross Stevenson, M.P. – Durham

OTHER MEMBERS WHO PARTICIPATED

Ethel Blondin—Andrew, M.P. – Western Arctic
*Charles Caccia, P.C., M.P. – Davenport
Rex Crawford, M.P. – Kent
*Stan Darling, M.P. – Parry Sound—Muskoka
Jean—Guy Guilbault, M.P. – Drummond
*Lynn Hunter, M.P. – Saanich—Gulf Islands
Roger Simmons, P.C., M.P. – Burin—St. Georges
Christine Stewart, M.P. – Northumberland
Len Taylor, M.P. – The Battlefords—Meadow Lake
Lyle Vanclief, M.P. – Prince Edward—Hastings

*(Charles Caccia, Stan Darling and Lynn Hunter were permanent Members for the purpose of this study).

CLERK OF THE COMMITTEE

Normand Radford

RESEARCH STAFF OF THE COMMITTEE

(Research Branch, Library of Parliament)

William Murray
Stephanie Meakin
Kristen Douglas

The Standing Committee on Environment has the honour to present its

SEVENTH REPORT

In accordance with Standing Order 108(2), the Standing Committee on Environment undertook the consideration of the substance of the Agreements of the United Nations Conference on Environment and Development (UNCED): Convention on Biological Biodiversity and Convention on Climate Change.

ACKNOWLEDGEMENTS

Table of Contents

The Committee acknowledges, with gratitude, the cooperation and support of all those who contributed to our study of the United Nations Conference on Environment and Development and the two international Conventions signed at this conference. In particular, the Committee wishes to thank the witnesses who appeared before us, as well as those who submitted written briefs, for sharing with us their knowledge and insight.

We thank all of the officials who so ably assisted the Members who attended the Conference. We also wish to acknowledge the Members of Parliament from the three national parties who participated in our study. Their commitment to our common objective was critical to the completion of this report.

This report would not have been possible without the efforts of many individuals. We wish to thank our Clerk, Norm Radford, for his devotion throughout the year, as well as the House of Commons staff.

Finally, but not least, we wish to thank our Library of Parliament research team, led by Dr. William Murray and composed of Stephanie Meakin and Kristen Douglas. Their patience, dedication and professionalism served us well.

6.	11
CHAPTER 2: IMPLEMENTING SUSTAINABLE DEVELOPMENT	13
CHAPTER 3: THE CONVENTION ON BIOLOGICAL DIVERSITY	21
BIODIVERSITY	21
THE UNITED NATIONS CONVENTION ON BIOLOGICAL DIVERSITY	21
A. Review of the Convention	21
B. The Convention and Canada	22
TOWARD A NATIONAL BIODIVERSITY STRATEGY	23
A. Information Resources	23
B. The Economic Value of Biodiversity	25
1. Economic Incentives	25
2. Institutionalizing the Value of Biodiversity	26
C. Protect Species and Spaces	27
D. Legislative Initiatives	28
CHAPTER 4: UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE	33
SCIENTIFIC UPDATE ON CLIMATE CHANGE	33
CONVENTION NEGOTIATIONS	36
SCOPE OF THE CONVENTION	36

Table of Contents

CHAPTER 1: THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT	1
A. History of the Summit	2
B. Canadian Preparation and Goals	5
C. The Global Goals	6
D. What Happened At Rio?	7
1. Agenda 21	8
2. Statement of Forest Principles	9
3. The Commission on Sustainable Development (CSD)	9
4. The Rio Declaration	9
5. Convention on Biodiversity	10
6. Framework Convention on Climate Change	11
CHAPTER 2: IMPLEMENTING SUSTAINABLE DEVELOPMENT	13
CHAPTER 3: THE CONVENTION ON BIOLOGICAL DIVERSITY	21
BIODIVERSITY	21
THE UNITED NATIONS CONVENTION ON BIOLOGICAL DIVERSITY ...	21
A. Review of the Convention	21
B. The Convention and Canada	22
TOWARD A NATIONAL BIODIVERSITY STRATEGY	23
A. Information Resources	23
B. The Economic Value of Biodiversity	25
1. Economic Instruments	25
2. Internalizing the Value of Biodiversity	26
C. Protect Species and Spaces	27
D. Legislative Initiatives	29
CHAPTER 4: UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE	33
SCIENTIFIC UPDATE ON CLIMATE CHANGE	33
CONVENTION NEGOTIATIONS	35
SCOPE OF THE CONVENTION	36

REALISTIC MITIGATION OPTIONS	38
A. Domestic Action	38
B. Further Direction	39
PRACTICAL CONCERNS AND POLICY DIRECTION	45
APPENDIX A: CONVENTION ON BIOLOGICAL DIVERSITY	51
APPENDIX B: RATIFICATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY	85
APPENDIX C: UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE	87
APPENDIX D: RATIFICATION OF THE U.N. FRAMEWORK ON CLIMATE CHANGE	123
APPENDIX E: MEMBERS OF PARLIAMENT WHO ATTENDED THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT	125
APPENDIX F: LIST OF WITNESSES	127
APPENDIX G: LIST OF SUBMISSIONS	131
REQUEST FOR GOVERNMENT RESPONSE	133

LIST OF RECOMMENDATIONS

Recommendation No. 1

The Committee recommends that the Government of Canada maintain its objective of establishing an Earth Charter by 1995, and work toward this goal by pressing the newly-formed United Nations Commission on Sustainable Development to initiate and direct new international negotiations for the development of a visionary Earth Charter. (page 10)

Recommendation No. 2

The Committee recommends, as Canada embarks upon the transition to sustainable development, that the Rio Way (transparency, inclusiveness and accountability) become established as the fundamental basis for decision-making and policy development. (page 14)

Recommendation No. 3

The Committee recommends that the Government of Canada meet the Agenda 21 target of 0.7% of GNP for Official Development Assistance (ODA) by the year 2000, or sooner if possible. In addition, the Committee recommends that the Government of Canada consider the advisability of (i) using ODA as an inducement to discourage military spending, and (ii) linking ODA to programs in developing countries that support environmental protection, sustainable development, and human development (health care, education, population control, and in particular the empowerment of women through literacy). (page 18)

Recommendation No. 4

The Committee recommends that the Government of Canada assist in addressing the problems of developing nations (external indebtedness, restricted access to markets, depressed commodity prices and inequitable terms of trade) by pressing in the international arena for reforms in the United Nations and international financial institutions which would fulfil the Agenda 21 goal of promoting sustainable development through trade, foreign aid, and other economic policies. (page 19)

Recommendation No. 5

This Committee recognizes the importance of organizing Canada's scientific resources and expertise in order to optimize our capacity and effectiveness in meeting our international obligations under the Biodiversity Convention. The

Committee recommends that the Government of Canada examine the feasibility of re-grouping agencies and professionals working in the area of biodiversity in various federal departments to ensure effective communication and networking. (page 23)

Recommendation No. 6

The Committee considers that one of the fundamental building blocks of an effective National Biodiversity Strategy will be a National Inventory of Canada's Biological Diversity, and we recommend that the development of such an inventory be facilitated by the Government of Canada. The Committee further recommends that the Government of Canada support the creation of an international data bank of the world's species. (page 24)

Recommendation No. 7

The Committee recommends that the Government of Canada ensure sufficient support of institutional research into the classification and study of the species of flora and fauna that make up the diversity of life. (page 24)

Recommendation No. 8

The Committee recommends that the Government of Canada begin the design and implementation of economic instruments for the conservation of biological diversity, and re-evaluate government subsidies, policies and programs that contribute to environmental degradation. (page 26)

Recommendation No. 9

This Committee recommends that the Government of Canada consider extending to donations of natural heritage property the same tax treatment that applies to donations of cultural property. (page 26)

Recommendation No. 10

The Committee recommends that the Government of Canada begin the process of determining the value of biological diversity, so that its value can be internalized in the calculation of our national accounts. (page 27)

Recommendation No. 11

The Committee recommends that the Government of Canada, in cooperation with all levels of government, support the implementation of the five initiatives identified for action at the tri-council meeting:

1. complete networks of protected areas representative of Canada's land-based natural regions by the year 2000 and accelerate the protection of areas representative of Canada's marine natural regions;

2. accelerate the identification and protection of critical wildlife habitat; (page 28)
3. adopt frameworks, strategies and time frames for the completion of protected areas networks;
4. continue to cooperate in the protection of ecosystems, landscapes, and wildlife habitat;
5. ensure that protected areas are integral components of all sustainable development strategies. (page 29)

Recommendation No. 12

The Committee recommends that the Government of Canada, working with the provinces and territories, consider the necessity of legislation to conserve biological diversity within Canada, and take immediate steps to develop an integrated legislative approach to the protection of endangered species, habitat, ecosystems and biodiversity in Canada. (page 30)

Recommendation No. 13

The Committee recommends that the Government of Canada take whatever steps are necessary to ensure that its environmental assessments take full account of Canada's obligations under the Biodiversity Convention. (page 31)

Recommendation No. 14

The Committee recommends that the policies of Parks Canada and the regulations promulgated under the *National Parks Act* fully reflect and fulfill Canada's obligations under the Biodiversity Convention. (page 31)

Recommendation No. 15

The Committee recommends that the Government of Canada move toward a corporate average fuel economy standard of 7.2 litres per 100 km for passenger cars, and continuously tighten this standard as new technologies evolve. (page 41)

Recommendation No. 16

The Committee recommends that the Government of Canada support the shift to alternative fuels and transportation technologies by converting as many federal vehicles as possible to alternative fuels, and by annually increasing the percentage of alternative-fuel vehicles in the government fleet; such that, where practicable, alternative-fuel vehicles comprise as close as possible to 100% of new vehicles purchases by 1998. (page 42)

Recommendation No. 17

In recognition of the electrical grid system as an asset of national importance, and as a means to facilitate the reduction of Canadian greenhouse gas emissions, the Committee recommends that the Government of Canada work with the provincial

and territorial governments to improve grid access and fair market value for all electricity generated by non-utility generators from reclaimed and renewable energy sources. (page 43)

Recommendation No. 18

The Committee recommends that the Government of Canada establish a program or expand the mandate of an existing program (i) to document successful energy efficiency initiatives, (ii) to maintain a record of current energy-efficiency programs provided by governments and public utilities, (iii) to conduct cost-benefit and investment pay-back analyses on new energy-efficient products and technologies, and (iv) to effectively disseminate this information to the domestic, commercial and industrial sectors. (page 44)

Recommendation No. 19

The Committee recommends that the Government of Canada encourage private and public sector research initiatives for the development and introduction of a second-generation of energy-efficient technologies by the year 2000. (page 45)

Recommendation No. 20

The Committee recommends that the Government of Canada, in cooperation with all stakeholders (industry, environmental groups, provincial, territorial and municipal governments) (i) accelerate its program to develop an effective package of economic instruments with which to combat greenhouse gas emissions, (ii) test these concepts in localized pilot projects, and (iii) share Canadian expertise on a global basis through the United Nations Commission on Sustainable Development. (page 46)

Recommendation No. 21

The Committee recommends that the Government of Canada institute a sunset program to (i) establish a greenhouse gas emission data base, (ii) receive emission reduction reports, (iii) assign value to emission reduction activities, and (iv) upon implementation of an appropriate economic instrument, retroactively credit industries for their reduction achievements. (page 48)

Recommendation No. 22

The Committee recommends that the Government of Canada (i) establish minimum energy-efficiency standards for all energy-consuming products and equipment, (ii) affix energy-consumption labels to all energy-consuming products and equipment, and (iii) continuously tighten the minimum standards as new technologies evolve. In addition, the Committee recommends that the *National Building Code* be reviewed and updated as new energy efficient building technologies evolve. (page 48)

Recommendation No. 23

The Committee recommends that the Government of Canada consider the advisability of using economic instruments, such as tolls and incentives, to encourage the use of public transportation systems and more environmentally-friendly modes of travel. (page 50)

CHAPTER 1

The United Nations Conference on Environment and Development

From 3-14 June 1992, Rio de Janeiro hosted the United Nations Conference on Environment and Development (UNCED). Never before had so many countries come together in a spirit of concern and cooperation. The conference focused on current development and economic practices and their impact on the global environment, and on the development of a common strategy to integrate environmental considerations into economic and development decision-making worldwide. The conference concluded with the Earth Summit, at which leaders of 105 nations rallied behind a global commitment to sustainable development.

However, deep disappointment about UNCED has also been expressed by many participants and commentators. The conference is said to have failed to recognize and grapple with the link between the world's environmental crisis and its dominant model of economic development. Developing countries, in particular, would argue that the crucial issues of transfer of resources and transfer of technology did not begin to be examined. Other global concerns such as population growth, poverty of developing countries, overconsumption of resources, and the relationship between these issues and environmental problems, were not adequately addressed. Désirée McGraw, former UNCED Youth Ambassador, identified debt, militarization and nuclear energy as 'non-agenda' items.

We do not inherit the earth from our ancestors, we borrow it from our children. (Inuit saying)

The outcome of Rio is unclear. It is agreed that the degree to which the conference can be considered a success will only be known in time. The nature of the follow-up process by which decisions taken at Rio are implemented by governments and international bodies will determine the conference's ultimate significance.

Canadians have expressed a high level of concern about their natural environment. Our commitment was demonstrated by the lead role Canada took at the Earth Summit. Ten months after the summit, the challenge facing Canadians is how may we profit from the work begun at Rio? What action and direction must Canadians take to improve their environment? How can we make significant and lasting environmental advances both at home and internationally? The House of Commons Standing Committee on Environment has endeavoured to address this challenge.

The Committee followed the events at Rio closely. Many of the members and staff were active participants in the UNCED process, tracking the goals of the conference and its accomplishments, as well as the areas where success was not achieved. Members of the critical importance of immediate, effective follow-up to Rio, in Canada as well as elsewhere, the members of the Committee wished to study the Conventions which Canada signed, and the steps which are being taken or considered by Canada for the coming months. Through the recommendations contained in this report, the Committee attempts to define Canada's follow-up role in order to ensure the implementation of sustainable development.

CHAPTER 1

The United Nations Conference on Environment and Development

From 3-14 June 1992, Rio de Janeiro hosted the United Nations Conference on Environment and Development (UNCED). Never before had so many countries come together in a spirit of concern and cooperation. The conference focused on current development and economic practices and their impact on the global environment, and on the development of a common strategy to integrate environmental considerations into economic and development decision-making worldwide. The conference concluded with the Earth Summit, at which leaders of 105 nations rallied behind a global commitment to sustainable development.

However, deep disappointment about UNCED has also been expressed by many participants and commentators. The conference is said to have failed to recognize and grapple with the link between the world's environmental crisis and its dominant model of economic development. Developing countries, in particular, would charge that the crucial issues of transfer of resources and transfer of technology did not begin to be examined. Other global concerns such as population growth, poverty of developing countries, overconsumption of resources, and the relationship between these issues and environmental problems, were not adequately addressed. Désirée McGraw, former UNCED Youth Ambassador, identified debt, militarization and nuclear energy as "non-agenda" items crucial to achieving UNCED's stated goal of sustainable development.¹ Even the praise of those expressing pleasure at the outcome of Rio is guarded; it is agreed that the degree to which the conference can be considered a success will only be known in time. The nature of the follow-up process by which decisions taken at Rio are implemented by governments and international bodies will determine the conference's ultimate significance.

Canadians have expressed a high level of concern about their natural environment. Our commitment was demonstrated by the lead role Canada took at the Earth Summit. Ten months have now passed since UNCED, and the challenge facing Canadians is how may we profit from the work begun at Rio? What action and direction must Canadians take to improve those areas where Rio failed, and to make significant and lasting environmental advances both at home and internationally? The House of Commons Standing Committee on Environment has endeavoured to address this challenge.

The Committee followed the events at Rio closely. Many of the members attended Rio and were active participants in the UNCED process, tracking the goals of the conference and its accomplishments, as well as the areas where success was not achieved. Because of the crucial importance of immediate, effective follow-up to Rio, in Canada as well as elsewhere, the members of this Committee wished to study the Conventions which Canada signed, and the steps which are being taken or considered by Canada for the coming months. Through the recommendations contained in this report, the Committee attempts to define Canada's future course of action toward the implementation of sustainable development.

¹ Désirée McGraw, "Making Sense of UNCED," Paper submitted to the House of Commons Standing Committee on Environment, December 1992, p. 6.

A. History of the Summit

In 1972, Stockholm, Sweden, hosted the first *United Nations Conference on the Human Environment*, which was attended by 113 delegates and two heads of state (Olaf Palme of Sweden and Indira Gandhi of India). This first-ever world conference on the environment raised a generation's awareness of an issue hitherto little talked about, the global environment. The Stockholm conference secured a permanent place for the environment on the world's agenda and led to the establishment of the United Nations Environment Program (UNEP). Although the international nature of the environment was now understood, environmental concerns were compartmentalized at Stockholm, where issues like pollution and species problems were high priorities.

Since the 1972 conference there have been a number of significant international conferences, as well as a number of international environmental agreements, some of which have been ratified by Canada. In 1976, the first-ever global conference on human settlements was held in Vancouver; and 1977 marked the important United Nations (UN) Conference on Desertification in Nairobi, as well as the UN Water Conference at which the *Mar del Plata Action Plan* was adopted. Other major international agreements include the 1978 *Great Lakes Water Quality Agreement*; the 1979 *Geneva Convention on Long-range Transboundary Air Pollution*; the 1985 *Helsinki Agreement* (a 21-nation commitment to reduce sulphur dioxide emissions); the 1988 *Montreal Protocol on Substances That Deplete the Ozone Layer*; and the 1989 *Basel Convention on Transboundary Movements of Hazardous Wastes*.² In 1992, it was this kind of international cooperation that UNCED sought, but on a larger scale.

The world community proceeded along a parallel track through the 1970s and 1980s in the effort to promote the development of developing countries. Beginning in the 1960s, which was declared the United Nations Development Decade, broad policies for the improvement of the standard of living in the developing world were created, and these policies and programs were revised and expanded during the succeeding two decades, also declared Development Decades.

Several key events occurred during the 1960s. The World Food Programme (WFP) was established as a joint undertaking of the UN and the Food and Agriculture Organization (FAO) in 1963. The WFP provides food to support development activities and emergency food in times of crisis. The General Assembly convened the United Nations Conference on Trade and Development (UNCTAD) in 1964, which became one of the UN's permanent bodies. Its aim is to analyze the practices of international trade and to enhance economic development wherever possible. UNCTAD met five times between 1964 and 1983. The United Nations Development Programme (UNDP), the world's largest multilateral technical grant assistance program and the central coordinating organization of the UN for development activities, was established in 1965. In 1967, the United Nations Industrial Development Organization (UNIDO) was established to promote the industrialization of the developing countries.

In 1970 the General Assembly adopted the *International Development Strategy*, which called for joint action by developing and developed countries and set specific goals for progress in all sectors of economic activity. The target that was then set for transfers of funds from economically

² Environment Canada, "Canada and the Earth Summit: Green Plan Goes Global," 1991.

advantaged countries has never been met by more than a few countries: developed countries were to endeavour to transfer financial resources to developing countries of at least one percent of gross national product (GNP). By the mid 1970s, at least 0.7% of GNP was to be transferred in the form of official development assistance (ODA)—long-term, low-interest loans—to developing countries.

In the 1970s, the prevailing international monetary system broke down, partly because of the oil crisis, which caused increased prices of other goods, shortages of goods, imbalances of trade and growing debt burdens. The Movement of Non-Aligned Countries and the Group of 77 (the central negotiating body for the developing countries) proposed extensive reforms, and in 1974 the General Assembly agreed that the prevailing economic order was in conflict with the goals of international equity that had been developed through international political and economic relations. The Assembly adopted the *Declaration and Programme of Action on the Establishment of a New International Economic Order*.

The new international economic order was intended to correct inequalities and eliminate, ultimately, the gap between developed and developing countries. The seventh special session of the General Assembly, held in September 1975, focused on issues of development and international cooperation, and a framework for UN work in several economic areas was outlined. However, by December of that year, the economic growth rate of the developing countries was beginning to fall short of targets. Since 1975, largely due to international economic recession and the failure of most developed countries to reach even half of the 0.7% target, and in spite of repeated UN resolutions urging developed countries to improve their performance, ODA levels have remained stagnant.

In 1976, UNCTAD established a Committee on Economic Cooperation among Developing Countries to assist in meeting its objective of enhancing mutual self-help among developing countries. In 1979, UNCTAD launched a new Programme of Action for Least Developed Countries, and in 1981, the UN Conference on the Least Developed Countries met and adopted the Programme, and called on all States to implement it as part of the new International Development Strategy for the Third UN Development Decade.

Proposals for the new international economic order were incorporated in the International Development Strategy for the Third United Nations Development Decade adopted by the General Assembly in 1980. The Strategy calls for changes in the world economy, in order to achieve a fairer distribution of the world's wealth. Development projects were growing in number by this decade: by 1983, UNDP was involved in 5,000 development projects in partnership with the governments of some 170 developing countries.

However, all of the institutional and other efforts to alleviate international development inequities had failed to have a significant impact. Developed countries have, for the most part, failed to increase contributions to UNDP, and ODA levels have not increased. In addition, other dynamics of the world economic system have been identified as contributing to the problems facing the global community. Tim Draimin, of the Canadian Council for International Cooperation, told the Committee that protectionism by the Organization for Economic Cooperation and Development (OECD) countries causes the South to lose up to \$500 billion in trade opportunities per year. Also, crippling third World debt has contributed to negative financial flows, whereby the South makes a net payment of \$40 to \$50 billion per year to the developed countries of the North.³

³ *Minutes and Proceedings of the Standing Committee on Environment*, Issue No.46, 17 November 1992, p. 13.

In fact, the two parallel tracks of development and environment were both running out of steam in the 1980s, and a new approach to both problems was needed. In 1983 the UN General Assembly established *The World Commission on Environment and Development*, better known as the *Brundtland Commission* after its chairperson, Norwegian Prime Minister, Gro Harlem Brundtland. Its aim was to link environmental issues to the findings of the 1980 Brandt report on North-South relations. The Brundtland report, published in 1987 as *Our Common Future*, declared that the time had come to recognize the linkages between the environment and the economy.

The concept that our economic needs can only be met by ensuring the protection of natural systems, which has come to prominence since the Brundtland Commission embraced the term "sustainable development", evolved in the early 1980s. Its roots are much older: Thomas Malthus, the English political economist, warned in 1798 that population growth could not continue forever without outstripping available natural resources. In 1972, the year of the UN Conference on the Human Environment in Stockholm, the Club of Rome issued a report entitled *The Limits to Growth*, its message being that fresh water, arable land, forests, minerals and the oceans are "the ultimate determinants of the limits to growth on this earth".⁴

The World Conservation Strategy, prepared in 1980 by the International Union for the Conservation of Nature along with the UNEP and the World Wildlife Fund, warned that negative consequences for humankind would result from the destruction of natural resources. The *Strategy* advocates the conservation of living resources for sustainable development. The *World Charter for Nature*, which was passed by the UN General Assembly in 1982, elaborated upon the idea, and although it did not use the words "sustainable development", the concept as we now understand it is clearly reflected throughout. For example, the Charter reaffirms that we must use natural resources "in a manner which ensures the preservation of the species and ecosystems for the benefit of present and future generations".⁵

The theme of sustainable development became a cornerstone of the work of the Brundtland Commission, which began in 1983. Inherent in the use of this new term was the merging of environment and development issues. Richard Sandbrook, of the International Institute for Environment and Development, told the Commission in June 1985:

It has not been too difficult to push the environment lobby of the North and the development lobby of the South together. And there is now in fact a blurring of the distinction between the two, so they are coming to have a common consensus around the theme of sustainable development. . . In effect, there is a political community of interest, North and South, in the concept of sustainable development that you can build upon.⁶

⁴ Club of Rome, *The Limits to Growth*, cited in Michael Keating, *Toward a Common Future*, Ottawa, Environment Canada, 1989, p. 24.

⁵ United Nations, *World Charter for Nature*, United Nations General Assembly Resolution 37/7, 28 October 1982.

⁶ World Commission on Environment and Development, *Our Common Future*, ("the Brundtland Report"), April 1987, Oxford University Press, p. 2-20.

The report of the Brundtland Commission, *Our Common Future*, was influential, and its importance gave new emphasis to the term. The Commission's definition of sustainable development is widely used: "development which meets the needs of the present without compromising the ability of future generations to meet their own needs".⁷

The Brundtland Report called for an international conference to be convened by the UN General Assembly. This suggestion was considered and adopted by the UN General Assembly at the close of its 44th session in December 1989. The resolution, which established the conference, states that the purpose of the conference was to:

elaborate strategies and measures to halt and reverse the effects of environmental degradation in the context of increased national and international efforts to promote sustainable and environmentally sound development in all countries.⁸

The first UN Conference on Environment and Development—UNCED for short, but better known as the "Earth Summit" after its final three days—was the culmination of two and a half years of world-wide consultation. The conference was attended by representatives of 178 nations, many non-governmental organizations (NGOs) and other interested parties (approximately 30,000 in total, including members of the media). Although successful as an assembly, in that so many heads of state and other participants were present, the conference failed to produce firm commitments by governments, either to specific targets in international agreements, or to specific levels of funding.

After the Brundtland Report was released in 1987, it became clear that the developed countries of the North understood it to be a document about environmental problems, while the developing countries of the South saw it as a development study. This dichotomy was not resolved at Rio. Although neither the development side nor the environment side were left out of the conference there was a failure to really integrate the two separate agendas as part of one inextricable relationship. As Christine Debrah, former Executive Director of the Environmental Protection Council of Ghana, has said,

The underlying causes of the crisis of our civilization—the disparity between rich and poor, between developing and developed nations, unsustainable patterns of production and consumption, and, most importantly, population growth—have not really changed and would need a much greater political commitment from world leaders as well as individual citizens.⁹

B. Canadian Preparation and Goals

Canada's preparations for the Earth Summit were coordinated by the National Secretariat in cooperation with Environment Canada and External Affairs and International Trade Canada (EAITC) and the Canadian International Development Agency (CIDA). The preparations also

⁷ Ibid., p. ES-7.

⁸ United Nations Resolution 44/228, part 1.3, New York, 22 December 1989.

⁹ Lt. Col. (Rtd.) Christine K. Debrah, "The Earth Summit and the South", *Rio Reviews*, Geneva, The Centre for Our Common Future, 1992, p. 10.

received input from a large number of interest groups connected to the environment, development, business, industry, labour, the churches, universities, women, natives, and youth, as well as all levels of government.¹⁰

An interdepartmental committee on UNCED was established and co-chaired by Environment Canada and EAITC with representation from 20 federal departments and agencies. This group was responsible for coordinating the federal government's preparations for both UNCED and the International Preparatory Committee Meetings (PrepComs). Groups were organized to address each of Agenda 21's 115 issues, synthesizing departmental interests into drafts of the Canadian positions and identifying desirable outcomes from UNCED. Recognizing the need to hear from all stakeholders, the Canadian government financially assisted the formation of the Canadian Participatory Committee for UNCED. This Committee coordinated the participation of approximately thirty NGO groups.

Canada attended the PrepComs with specific objectives in mind. Canada emphasized the importance of national reports, and provided assistance to Indonesia, Guinea Conakry, Nigeria, Peru and the Central American region in the preparation of their national reports for UNCED. Canada worked for the establishment of binding conventions on climate change, conservation of biodiversity, and on sustainable development of all forest types. Also of paramount importance to Canada was the state of the high-seas fishery. At the PrepComs, Canada attempted to get beyond the causes, the finger-pointing, and look to solutions and embody them in a convention on sustainable development of the seas. Canada planned and worked toward an "Earth Charter", a one-page credo or global doctrine that would have succinctly established the concept of sustainable development. Finally, with the knowledge that most developing countries can not afford to pay for the real integration of environmental protection within viable development programs, Canada proposed that assistance be provided to these countries through debt conversion projects and improved North-South trade.

C. The Global Goals

The global objectives were broad and comprehensive. Environmental issues included the protection of air, land and water; conservation of biological diversity, forests, and natural resources; and the sound management of wastes and technology. These goals identified to world leaders the human activities that are threatening the planet, that are bringing about pollution of land, ocean and atmosphere, drought, desertification, thinning of stratospheric ozone, climate change, and the extinction of plant and animal species.¹¹

Also on the agenda were the concerns that have led to serious differences between countries of the North and South: patterns of development that cause stress to the environment, poverty in developing countries, economic growth, unsustainable patterns of consumption, and demographic pressures and their impact on the international economy. Ultimately, the most crucial of issues divided countries of the North from those of the South: the need for fairness in the transfer of resources and technology; and the call for an end to unjust patterns of international trade.

¹⁰ Environment Canada, "Canada and the Earth Summit, Green Plan Goes Global," 1991.

¹¹ "A Greener Commonwealth: Special Earth Summit Edition," *Commonwealth Currents*, June/July 1992, p. 3.

D. What Happened At Rio?

The Summit was the largest gathering of world leaders ever to take place, and it received a great deal of media coverage around the world. Expectations were high, often too high; and there has been much criticism of the final outcome of UNCED. To the extent that the aim of Rio was really to find ways to bring the developing world out of poverty without contributing to environmental degradation, the conference was not a success. Tim Draimin, of the Canadian Council for International Cooperation, quoted Norwegian Prime Minister Gro Harlem Brundtland,

We owe the world to be frank about what we have achieved here in Rio: progress in many fields, too little progress in most fields, and no progress at all in some fields.¹²

The successful aspects of Rio have to do primarily with the open, transparent and inclusive processes of consultative decision-making which began with the Brundtland Report, and were carried through the preparatory process for UNCED. New leadership, consensus and understanding were developed in the NGO communities: business, labour, environmental groups, women, aboriginal peoples and youth. An unprecedented degree of high-level political involvement and public attention were garnered. These are the sources of the hope that many have expressed since leaving Rio. As the Minister of the Environment, Jean Charest said:

The UNCED process concluded with a sense of accomplishment, realism, I think, and hope. The biggest accomplishment was the extent to which different concerns converged around a common agenda and countries rallied behind a global commitment to sustainable development. . . . For the first time, nations everywhere acknowledged that the problems are real, and they agreed on a common course of action to combat them. A collective enterprise crystallized in Rio. Precedents were set and irreversible networks and partnerships were formed. A global consensus was reached that practical solutions are available, not quick fixes; no short cuts, but progressive steps in the right direction.¹³

The single most important fear expressed by NGOs, developing countries and other observers critical of UNCED's real results was the failure of governments from the developed countries, including Canada, to commit money to sustainable development. Tim Draimin told the Committee that Canada's ability to meet its pledge to maintain and hopefully increase ODA in the next budget will be a key indicator of our commitment. This is particularly alarming given the announcement in the government's "mini-budget" of 2 December 1992 that Canada's foreign aid budget will be cut by 10%.

Overall, Rio cannot be said to have been successful in integrating, in practice or in theory, the two areas in which the international community has worked to achieve change; environmental protection and international development. Jim MacNeill, who was the Secretary General of the Brundtland Commission, based his evaluation of Rio on the expectations that Commission had for it:

The Commission intended that Rio would provide an opportunity for governments to map out a global transition to more sustainable forms of development. It proposed that governments take strong measures to tame our terminal propensity to multiply our

¹² *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 9.

¹³ *Ibid.*, Issue No. 45, 16 November 1992, p. 5-6.

numbers, tackle mass poverty and change the consumption, production and trading patterns that underlay the dismal trends that put human civilization at increasing risk. As a minimum first step, the Commission called for a range of measures to integrate environmental and economic considerations at the centre of decision-making in the cabinet chambers of government, the board rooms of industry and the kitchens of our homes. Clearly, the Summit did not achieve those goals.¹⁴

The following documents were the tangible products of UNCED:

1. *Agenda 21*

Agenda 21 is considered the key document of the Conference. Its content was largely negotiated during the PrepComs, starting from Maurice Strong's visionary concept of it as an integrated action plan for governments and international organizations to deal with the specific sectoral issues on the UNCED agenda. It is a 700-page, 40-chapter inventory of environment and development issues, including action programs and cost estimates for their implementation. It represents an attempt to restructure human thinking and activities in order to integrate the environment and the economy. Although government leaders, by signing Agenda 21, may have committed themselves to an intention to implement these programs, no financial or other binding commitments were made.

Agenda 21 addresses environmental issues on a sectoral basis; for example, poverty reduction, technology transfer, climate change and hazardous waste disposal. The Agenda also contains key chapters that (i) recommend the establishment of a UN-related commission to track the progress of nations and (ii) outline financing mechanisms and structures to assist countries in their sustainable development efforts.

This wordy environmental blueprint contains some positive sections, but also some disappointing and out-dated concepts. For example, Janine Ferretti of Pollution Probe told the Committee that the Agenda 21 chapters on waste and toxic chemicals are out-dated because they do not refer to the concept of "sunsetting," or phasing-out, of toxic chemicals, which is a process which has already begun in Canada and other countries. However, as Arthur Hanson, President and CEO of the International Institute for Sustainable Development (IISD) advised us, most of Canada's domestic environmental initiatives are not up to the standard of achievement demanded by Agenda 21, and will have to be reviewed and improved. The UNCED Secretariat estimated that to make Agenda 21 happen would cost over US \$100 billion per year throughout this decade. The new money committed at Rio will not make possible the commencement of the Agenda 21 action plans. Beyond the lack of financing, Agenda 21 was further weakened by the absence of commitments to concrete actions; prioritization of issues; and mechanisms for technology transfer, monitoring and reporting.

Along with Agenda 21, three follow-up conferences were negotiated at Rio:

- At the urging of African nations it was agreed to immediately begin negotiations on a Convention to combat desertification for finalization by June 1994.
- The UN Environment Program will convene a conference on land-based sources of marine pollution.

¹⁴ Jim MacNeill, "The 1992 Rio Conference: Setting the Global Compass," *Rio Reviews*, 1992, p. 34.

- Nations agreed on a number of principles to regulate the conservation of high-sea fisheries, and also agreed to a conference on this issue to be held in 1993. On the issue of overfishing Canada achieved a major concession from European nations who agreed to the immediate halt of fishing for Northern Cod off the Grand Banks. Subsequently, other distant fishing nations also agreed to a fishing moratorium.

2. *Statement of Forest Principles*

This document is a non-binding statement of principles to be used as a global guide for the management, conservation and sustainable development of all types of forests. The immediate goal of the document is to encourage individual nations to take action to preserve their forest resources. The fact that the work of the Canadian delegation at UNCED did not result in a legally binding forestry convention was a disappointment for Canada. The forestry negotiations represented one of the biggest North-South struggles of UNCED: to northern industrial countries, tropical forests are seen as greenhouse gas "sinks" that absorb CO₂, helping slow climate change; while to developing countries of the South the forest is one of the few important resources they can exploit, as potential farmland, a source of fuel, and as a product they can trade internationally. Having worked hard for a binding international convention, the ineffective statement of principles which was signed is disappointing. Canada agreed to it on the unspoken understanding that international negotiations toward a Forest Convention would follow Rio.

3. *The Commission on Sustainable Development (CSD)*

It was agreed at the conference that a Sustainable Development Commission be established to coordinate and follow-up international action toward the achievement of sustainable development goals. The Commission is to be part of the United Nations and is to report to the General Assembly through the United Nations Economic and Social Council (ECOSOC). The Commission is expected to receive *National Reports*, compile information provided by national governments on their implementation of Agenda 21, and consider the problems faced by individual nations in their efforts to implement and achieve sustainable development.

UN General Assembly Resolutions setting up the CSD were endorsed in December 1992. The Commission's Secretariat is to be located in New York in the new Department of Policy Coordination and Sustainable Development. The Department will be headed by Nitin Desai (India), who served as Deputy to Maurice Strong when he was the Secretary-General of UNCED. The Commission will be made up of high-level representatives of 53 UN Member States. The issue of NGO involvement in the CSD, which is of concern to the members of this Committee, has not yet been resolved. The UN Secretary-General will submit guidelines in 1993, but indications are, and it is the hope of this Committee, that NGOs and other interested parties will continue the active role they had in UNCED. The Commission's first substantive session is expected to occur in May or June 1993.

4. *The Rio Declaration*

The Rio Declaration was the outcome of the negotiations for what had been envisioned by the Brundtland Commission as a global charter by which the countries of the world would commit themselves to sustainable development. Agreements reached in UN fora demand consensus, which

can have the unfortunate result that the lowest common denominator prevails, as was the case with the Rio Declaration. The Rio Declaration on environment and development lists 27 major principles with the purpose of establishing "a new and equitable global partnership" to manage the resources of the earth in a sustainable fashion. This declaration enshrines the rights of individual nations to exploit their own resources pursuant to their own environmental and development policies. However, nations have the responsibility to ensure that their activities do not cause damage beyond their national jurisdictions. Further, the declaration states that development must proceed so as to meet the needs of today without compromising future generations, and states that development should never proceed without consideration for environmental protection.

Canada settled for The Rio Declaration but had negotiated for an "Earth Charter", a succinct global doctrine that enshrined the concept of sustainable development, and of environmental rights and responsibilities. At the Earth Summit, Prime Minister Brian Mulroney said "the idea of an Earth Charter which slipped beyond our grasp at Rio should be revived". As a target date for concluding the negotiation of an Earth Charter, the Prime Minister proposed 1995, the 50th anniversary of the founding of the United Nations. This suggestion met with widespread support at Rio. The creation of a negotiated Earth Charter should continue to receive Canadian support and be recognized as a priority item on Canada's post-Rio agenda.

Recommendation No. 1

The Committee recommends that the Government of Canada maintain its objective of establishing an Earth Charter by 1995, and work toward this goal by pressing the newly-formed United Nations Commission on Sustainable Development to initiate and direct new international negotiations for the development of a visionary Earth Charter.

5. *Convention on Biodiversity*

The convention contains provisions that are intended to ensure effective national action to curb the destruction of biological species, habitats and ecosystems. Significant provisions include:

- the requirement that countries adopt regulations to conserve their biological resources;
- the legal responsibility of nations for the environmental impact that their private companies might have in other countries;
- the promotion of technology transfer where such transfer does not infringe upon intellectual property rights or patents;
- regulation of biotechnology firms;
- access and ownership of genetic material;
- compensation to developing countries for extraction of their genetic material;
- and, an obligation on developed countries to assist developing countries both financially and with know-how, where this support is in addition to current assistance. Further, the convention urges each nation to set up a network of protected areas where the first beneficiaries of conservation and sustainable-use are indigenous peoples and rural communities.

6. Framework Convention on Climate Change

The aim of the convention is to stabilize the concentration of greenhouse gases in the atmosphere at a level that would prevent dangerous interference with the climate system. It is hoped that this level can be reached within a time frame that will allow world ecosystems to adapt naturally to climate change. The final document did not provide specific timetables or targets for limiting the emission of these gases by industrialized countries.

Implementing Sustainable Development

The Prime Minister, in his address to the Earth Summit, proposed a number of steps to quick-start the implementation of sustainable development:

- Canada committed \$2 million to “Capacity 21”, a new program to assist countries in the creation of national plans for sustainable development. Canada had argued that formulation of a “green plan” was the first national step toward sustainable development. Canada agreed to share with other countries its green plan experiences.
- Canada pledged to ratify¹⁵ both the Biodiversity and Climate Change Conventions before the end of 1992. On 4 December 1992, Prime Minister Brian Mulroney signed in Delta, British Columbia, the ratification documents for these international conventions.
- Canada suggested a package of measures to assist developing countries make the transition to sustainable development. These included liberalized North-South trade, environmental emphasis at the next round of GATT negotiations, conversion of \$145 million in Latin American debt to sustainable development projects, and the negotiation of new agreements with the Global Environment Facility (GEF) and the International Development Association (IDA).
- Canada supported the prompt creation of the Commission on Sustainable Development, within the United Nations infrastructure, as a means of holding all countries, sectors and people accountable for progress on the Rio Agenda, and in particular, on Agenda 21.
- The mandate of Canada’s International Development Research Centre (IDRC) was broadened to assist in the infusion of sustainable development research and technological capacity into developing countries.
- Canada called for a renewed international effort to agree on an Earth Charter by 1995.

The UNCED process was the genesis of a new way of doing things. This new direction in achieving consensus and commitment has been called “The Rio Way”. It is characterized by transparency, inclusiveness and accountability. The process must be transparent and accessible to all people who may be affected by the decisions. The second key to ensuring progress is the inclusion of all sectors of society in a decision-making partnership. From open negotiation and inclusive consensus flows all-sector accountability.

¹⁵ Ratification involves the formal indication of a state’s consent to be bound by an international convention.

Witnesses before the Committee were consistent in their praise of the manner in which consensus and the Canadian agenda were achieved. As Tim Draimin told the Committee:

Canada provided important leadership in the UNCED process leading up to Rio. . . Canada set an example by encouraging NGO access to the process, sharing information, and allowing for important participation in policy development.¹⁶

This praise was echoed by Janine Ferretti:

The involvement of NGOs in the UNCED process at the national level by the Canadian government and at the international level by the UN system has set new standards for more open policy-making. We can't go back; we can only go forward.¹⁷

Nicole Senécal, Vice-President, Policy Branch, Canadian International Development Agency, said of the Canadian delegation to Rio:

. . . we led the way by including individuals from NGOs, the business community, and other major groups, including women and indigenous people, in our delegation.¹⁸

The Committee is in agreement that the participation of all sectors of Canadian society not only strengthens the decision-making process but through increased accountability also ensures a higher level of ultimate success.

Recommendation No. 2

The Committee recommends, as Canada embarks upon the transition to sustainable development, that the Rio Way (transparency, inclusiveness and accountability) become established as the fundamental basis for decision-making and policy development.

During the introductory portion of the Committee's hearings a number of individuals, both witnesses and a Committee member, expressed concern that a national body no longer exists to coordinate the follow-up to Rio. In preparation for UNCED, the National Secretariat coordinated the activities of CIDA, External Affairs International Trade and Commerce, and Environment Canada, and facilitated NGO input through the Canadian Participatory Committee. The National Secretariat was officially disbanded 20 November 1992. As Tim Draimin reported to the Committee:

Important institutional changes and reform need to come about if existing institutions are to promote sustainability effectively. At the national level, the federal government must be able to guarantee ongoing inter-ministerial policy coordination. It is distressing to watch both the dissolution of key structures, such as the UNCED interdepartmental working groups, and the departure of key personnel, without the emergence of any meaningful replacement coordinating structures. The coordination vacuum, if allowed to remain, will undermine the sustainability agenda.¹⁹

¹⁶ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 10.

¹⁷ *Ibid.*, p. 16.

¹⁸ *Ibid.*, p. 5.

¹⁹ *Ibid.*, p. 11-12.

According to Minister Jean Charest, the focal point for coordination of UNCED follow-up at the federal level continues to be the cabinet committee on the environment, in cooperation with the cabinet committee on foreign policy and defence and also the cabinet committee on economic and trade policy.²⁰ Cabinet coordination, however, does not integrate provincial and NGO activities.

A multi-stakeholder "Post-Rio Follow-Up" meeting was held in Ottawa, 5-6 November 1992. This meeting, chaired by George Connell, chairperson of the National Round Table on the Environment and the Economy (NRTEE), was convened to consider how Canada could sustain the momentum UNCED had created, and to make recommendations on Canada's Post-Rio priorities. The need for a national organization to coordinate Canada's Post-Rio activities was recognized as a national priority. Toward this end, the federal government, the Canadian Council of Ministers of the Environment (CCME), the NRTEE, IDRC and IISD agreed to financially support a working group called *Projet de Société : Planning for a Sustainable Future*. Project goals include an analysis of Agenda 21 and preparation of a report to the stakeholders on the progress of Canadians in meeting the commitments made at UNCED. The project participants are working toward defining a process that will carry on from UNCED to establish an inclusive and effective approach to sustainable development. The Committee recognizes the need for such an organization and commends the efforts of all involved in this worthy task.

One of the underlying themes of *Canada's Green Plan* is the need for all Canadians to be environmentally responsible in their decision-making. "We face problems today because our past decisions did not adequately reflect environmental considerations."²¹ Janine Ferretti stated that the federal government is still making financial decisions without consideration of the environmental impact, and described the government's recently announced program to upgrade and expand Canadian highways and airports as such a decision. Janine Ferretti suggested this funding could have been allocated, with the same potential for job creation, to the expansion and improvement of energy-efficient transit systems. It is obvious if Canada is to truly embark upon a course leading to sustainable development, then more than lip service must be paid to environmental decision-making.

The problem of integrating environmental considerations into economic decision-making was also addressed at the multi-stakeholder "Post-Rio Follow-Up" meeting. The development of a National Sustainability Plan was identified as a major priority. The *Projet de Société: Planning for a Sustainable Future* has accepted the task of developing and drafting a sustainability plan for Canada. As outlined by Janine Ferretti, this plan:

. . . should have as its focus the economic and the ecological renewal of Canada through sustainable development. It should be a framework for concrete action, and it should help guide and direct the activities and actions of every sector of Canadian society, . . . and it should also articulate priority areas for action. . . The plan should be a primary instrument for guiding and directing domestic and foreign policies, and should apply the primacy of sustainability to national economic and social programs.²²

²⁰ Ibid., Issue No. 45, 16 November 1992, p. 10.

²¹ Environment Canada, *Canada's Green Plan*, 1990, p. 11.

²² *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 16-17.

The Committee would like to broaden this vision of a National Sustainability Plan to embody a set of sustainable development standards against which all decision-making and actions, present and past, can be judged. The Committee appreciates that this will be a formidable and long-term task, for an effective set of standards will require the development of sustainable development criteria, methodologies, economic instruments, indicators, and the perfecting of environmental audits and full-cost accounting. When this plan comes to fruition it will not only serve as a practical guide to sustainable development in all aspects of Canadian life, but it will also symbolize to other nations Canada's commitment to sustainable development. The Committee recognizes the immense nature of this task and strongly commends those who would undertake this initiative.

There have been previous UN conferences on renewable energy, the human environment, and desertification. These conferences resulted in reports and recommendations; however, there was little follow-up and even less in the way of tangible results. This situation should change with the establishment on 9 December 1992 of the UN-affiliated Commission on Sustainable Development (CSD). Canada supported the proposal that the commission meet at a high level, preferably at the ministerial level, to ensure that the commission has political influence. The General Assembly established that the commission will be made up of high-level representatives. The mandate of the CSD was determined at the General Assembly on 5-25 November 1992. It will:

- monitor implementation of Agenda 21—recognizing that it is a dynamic document which could evolve over time—and sustainable development activities in the UN system;
- consider implementation of Agenda 21 by Governments, on the basis of information provided by them, including problems relating to financial resources and the transfer of environmentally-sound technology;
- review commitments made by donor countries in Agenda 21, including the provision of new and additional financial resources and the transfer of technology on favourable terms; and monitor progress made by States in reaching the target of giving 0.7% of GNP in Official Development Assistance to developing countries;
- review and analyze relevant input from competent non-governmental organizations, and enhance the dialogue with non-governmental and independent sector groups.²³

The Committee heard that, while regionalized sustainable development is possible in developed nations, the achievement of sustainable development at the global level is precluded until the crippling poverty of the Third World is alleviated. As Tim Draimin said:

Sustainability requires our building partnerships with the world's poor. For them, in the short term the economic realities are paramount. An approach is needed that combines environmental protection with sustainable economic models capable of providing basic well-being for the economically disenfranchised. We ignore the marginalized at our collective peril.²⁴

²³ United Nations Conference on Environment and Development, *Press Release*, "Assembly Establishes Commission on Sustainable Development, Takes Action to Ensure Effective Follow-Up to Rio," New York, 16 December 1992.

²⁴ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 13.

The enormous needs of the South are undisputed, yet the Committee was informed that in the last eight years Canada has made cuts to its actual and projected ODA in the amount of \$3.7 billion. Prior to the government's "minibudget" Canada's ODA was 0.45% of GNP. The 2 December 1992 budget reduced Canadian foreign aid by 10%. This is well below the target of 0.7% GNP agreed to in Agenda 21.²⁵

The end of the Cold War has been recognized by many as an opportunity for countries to redirect military spending to projects of benefit to humanity. Many of the witnesses appearing before the Committee expressed the hope that the Canadian government would identify a "peace dividend" and reallocate a portion of defence funding to ODA. This is indeed a worthy consideration; however, it must be recognized that Canada is already an international leader in the provision of humanitarian aid through the large involvement of the Canadian military in the peacekeeping activities of the UN. To our credit Canada is the only country that has participated in all of the UN peacekeeping operations since 1947. Large numbers of Canadian troops are presently involved in the distribution of humanitarian aid. In Bosnia-Herzegovina, Canada provides armed escorts to protect food and medical relief convoys; while in Somalia, Canadians are assisting in the prevention of mass starvation.

Mahbub ul Haq, Special Adviser to the Administrator, United Nations Development Program (UNDP), told the Committee that tremendous "peace dividends" are potentially available in even the desperately poor countries of the developing world. An UNDP study estimated that a freeze in military spending in developing countries could potentially release \$50 billion over the next decade. The liberation of such an enormous sum would greatly enable poor nations to finance their own development agendas.

It has been suggested that developed nations are partially responsible for the large military expenditures made by many poor nations. Mahbub ul Haq stated that the present allocation of ODA reflects an old pattern of military alliances, when developed nations fought the Cold War by proxy. The UNDP study showed that today in developing countries twice as much aid per capita goes to the highest military spenders as compared to low military spenders.

Mahbub ul Haq stated that tremendous benefits could be realized in developing countries if aid was linked to real objectives:

...the objective of reducing poverty, the objective of increasing human development, the objective of discouraging military spending, the objective of encouraging human rights.²⁶

The restructuring of ODA is, perhaps, as important as the level of aid going to developing countries. Mahbub ul Haq asserted that aid must be directed to where it will do the most good, to human development, to health care, education and population control.

... we can have population control, but human development itself is the strongest contraceptive, particularly female literacy.²⁷

²⁵ "Rio Earth Summit: Meeting ends with hope, disappointment", *Chemical and Engineering News*, Vol. 70 (25), 1992, p. 4.

²⁶ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 51, 2 February 1993, p. 14.

²⁷ *Ibid.*, p. 15.

The issues of poverty, population control, health and education, are often overlooked as genuine environmental concerns. However, as serious as pollution, climate change, and biodiversity loss are, they are in reality only the symptoms of a greater environmental malaise, overconsumption, desperate poverty and overpopulation. The impoverished peasant, whose immediate problem is family sustenance, has little time or interest for the concept of sustainable development.

Recommendation No. 3

The Committee recommends that the Government of Canada meet the Agenda 21 target of 0.7% of GNP for Official Development Assistance (ODA) by the year 2000, or sooner if possible. In addition, the Committee recommends that the Government of Canada consider the advisability of (i) using ODA as an inducement to discourage military spending, and (ii) linking ODA to programs in developing countries that support environmental protection, sustainable development, and human development (health care, education, population control, and in particular the empowerment of women through literacy).

It is to be noted that this recommendation did not receive unanimous Committee approval. One Committee member chose not to support the recommendation because it was felt that (i) the recommendation supported population control, and (ii) the use of ODA as an inducement to discourage military spending might affect the domestic and national security of a sovereign state.

Direct financial aid is but one of the mechanisms needed to assist developing countries. Witnesses before this Committee urged Canada to use its influence in the international arena to effect change. Tim Draimin pointed out the need for OECD countries to liberalize trade with the South, and to take action to alleviate Third World debt. This sentiment was reflected by Mahbub ul Haq:

I think it is true that what the poor ultimately need is not charity, except as a temporary measure, but access to markets, whether domestically or internationally.²⁸

Art Hanson highlighted the need for technology transfer:

The science and technology of sustainable development is still at quite an early stage, and without a doubt the needed technology sharing will require an immense additional political effort. The important findings emerging from organizations such as the Business Council for Sustainable Development, the International Union for Conservation of Nature, and the various world scientific bodies that engaged in UNCED preparations suggest the need for an expanded global effort, including much better information sharing and technology transfer.²⁹

Chapter 2 of Agenda 21 elaborates the decision by all States to establish a new global partnership in which they are committed to working toward a more efficient and equitable world economy, with sustainable development as a priority item on the international community's agenda. The Chapter recognizes the relevance of domestic and international economic policies for sustainable development, and the need to relate the elements of the international economic system

²⁸ Ibid., p. 15.

²⁹ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 21.

with the human need for a safe and stable natural environment. Development in the countries of the South requires a supportive international economic environment, and will not progress if developing countries are hampered by external indebtedness, if there is inadequate financing, if there is restricted access to markets, or if commodity prices and the terms of trade for developing countries remain depressed.

The international community agreed in paragraph 2.3 of Agenda 21 that

[t]he international economy should provide a supportive international climate for achieving environment and development goals by:

- (a) Promoting sustainable development through trade liberalization;
- (b) Making trade and environment mutually supportive;
- (c) Providing adequate financial resources to developing countries and dealing with international debt;
- (d) Encouraging macroeconomic policies conducive to environment and development.³⁰

Witnesses before the Committee called for a renewal of the institutions of the United Nations, and of international funding agencies, such as the International Monetary Fund (IMF) and the World Bank. Of prime importance, the traditional approaches and ways of thinking and doing things must be adjusted. Decision-making at all levels must now be assessed against the international goals of sustainable development. It was pointed out that the IMF and the World Bank are institutions of the North. They do not necessarily reflect the needs or goals of the South. This statement was reinforced by Mahbub ul Haq, who informed the Committee that in 1992 the World Bank transferred \$22 billion to the Third World, but in turn collected debts of \$23.7 billion. Tim Draimin called for democratization and reform of the IMF, the World Bank, and the General Agreement on Tariffs and Trade:

These supranational institutions must have accountability to southern as well as northern populations.³¹

Recommendation No. 4

The Committee recommends that the Government of Canada assist in addressing the problems of developing nations (external indebtedness, restricted access to markets, depressed commodity prices and inequitable terms of trade) by pressing in the international arena for reforms in the United Nations and international financial institutions which would fulfil the Agenda 21 goal of promoting sustainable development through trade, foreign aid, and other economic policies.

³⁰ Agenda 21, Chapter 2. Final advanced version of the chapter, as adopted by the Plenary in Rio de Janeiro, on 14 June 1992.

³¹ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 46, 17 November 1992, p. 12.

The Convention on Biological Diversity

BIODIVERSITY

Biological diversity refers to the variety among living organisms and the ecological communities which they inhabit. Biodiversity encompasses three different concepts: ecosystem diversity (the range of different interacting systems present in a region, nation or the world); species diversity (the range of species in a given area); and genetic diversity (the range of possible heritable characteristics, genes, found in a population or species).³²

The Chair of this Committee, David MacDonald, opened the hearings on the Biodiversity Convention by saying:

The biodiversity convention, which was signed in June at the Earth Summit by, I believe, more than 150 countries, represents a major advance in international agreement with respect to an issue of growing concern. It is estimated that 15% of the earth's species could be lost over the next quarter century. In fact, it is thought that something like 100,000 species each year are now being lost.

The causes of this rapid rate of extinction are in part because of tropical rain forest destruction, destruction of wetlands, coral reefs, and the loss of temperate forest habitats. Of course, some of the more specific causes are habitat alteration or destruction, over-harvesting, improper use of agricultural chemicals, poverty, population growth, inequitable land distribution, excessive resource consumption, and on and on and on.³³

THE UNITED NATIONS CONVENTION ON BIOLOGICAL DIVERSITY

A. Review of the Convention

The need to conserve biological diversity has become urgent. It has gone beyond the laboratory, and as UNCED demonstrated, it has become an issue debated in political arenas.

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by the appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.³⁴

³² Environment Canada, Background, *Proposed Global Convention on Biological Diversity*, 19 May 1992, p. 1.

³³ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 47, 23 November 1992, p. 6.

³⁴ Convention on Biological Diversity, United Nations Environment Programme, Na.92-7807, 5 June 1992.

For further detail on the Convention the reader is referred to Appendix A, where the *Convention on Biological Diversity* appears in its entirety.

Discussions for a convention on biological diversity were initiated in 1988 by the United Nations Environment Programme's Governing Council and concluded on 22 May 1992 in Nairobi. Negotiating teams from 100 countries were involved in formulating the international accord on biodiversity that was further debated and finally signed in Rio on 11 June 1992. Canada was the first country to express its intention to sign the Convention, which ultimately ensured the decision of a further 162 countries to sign by the end of the day on 14 June 1992. As of 5 April 1993, 167 countries had signed the Convention and 12 countries had ratified it (Mauritius, Seychelles, Marshall Islands, Maldives, Canada, Saint Kitts and Nevis, Ecuador, Fiji, Antigua and Barbuda, Mexico, Papua New Guinea and Vanuatu).

Conservation of biodiversity is more than an aesthetic or moral issue; it is integral to our health and economy. Species loss threatens the natural resources upon which sustainable development depends. Genetic material from plant and animal species (many still undiscovered) is the foundation for the agricultural, pharmaceutical and other biotechnology-based industries. It is estimated that one-quarter of all the pharmacological products used in North America contain ingredients derived from wild plants. Biodiversity is integral to the maintenance of the environment and supports water purification, soil production, carbon cycling and oxygen production.

The UNCED *Convention on Biological Diversity* represents a global attempt to address what should be done and at whose expense. Participants developed a global strategy with guidelines for action by international, national and local governments and institutions to save, understand, and use biodiversity sustainably and equitably.

Under the Convention, countries make a commitment to protect endangered species and their habitats. Measures include the compilation of inventories of vulnerable and threatened species at two levels, global and national. The Convention sets rules for technology transfer to the South and for granting access to tropical plants and animals, many of which are essential to the genetic tailoring of ingredients for new drugs, pest-resistant crops, fast-growing trees and other products. The convention also calls for tropical countries to receive a share of profits from the development of such products and for financial assistance in meeting their obligations under the Convention.

B. The Convention and Canada

Several witnesses before this Committee emphasized the important role Canada had played in the negotiation of the Convention, and urged the Committee to reiterate the importance of a continuation of Canada's leadership role in the conservation of biodiversity. As Don McAllister, Senior Biodiversity Advisor, Canadian Museum of Nature, told the Committee:

Canada can contribute to saving life on earth. We can launch a new era. It's in the Canadian character to care for nature. It will help nature, the planet and ourselves to survive. If we ratify soon and take early significant actions, Canada will continue to lead.³⁵

The Committee was encouraged by the ratification of the Convention on 4 December 1992 and hopes that the Canadian government will continue to work toward the goals of the Convention at home and abroad. As Walter Reid of the World Resources Institute in Washington, D.C. told the Committee: "The convention is an important first step toward coordinated international action, but it falls short of what is possible and what is needed."³⁶

TOWARD A NATIONAL BIODIVERSITY STRATEGY

A. Information Resources

The protection of ecosystems, and the species which inhabit them, is a prerequisite for sustainable development. The need for the industrial countries to deal with their own environmental crises is evident. There is also a need for unprecedented international cooperation as most of the world's biological wealth, and those that depend on it, reside in the developing tropical nations. Witnesses before this Committee suggested a number of ways in which Canada could assist in this cooperation.

Don McAllister gave testimony to support the establishment of a Canadian Biodiversity Centre. In his testimony to the Committee, he stated that Canada's federal capabilities in biodiversity research, rather than remaining scattered in several different departments, should be strategically and cost-effectively re-grouped. A central department or institution could act as a centre which would serve the needs of government and industry in conservation, resource management and biotechnology. It would focus on research, biological inventory, and the communication of knowledge on biosystematics and biodiversity both within and outside Canada. The Committee recognizes the complex nature of biological diversity. This necessitates the need for communication and networking between all levels of government, institutions and interested parties.

Recommendation No. 5

This Committee recognizes the importance of organizing Canada's scientific resources and expertise in order to optimize our capacity and effectiveness in meeting our international obligations under the Biodiversity Convention. The Committee recommends that the Government of Canada examine the feasibility of re-grouping agencies and professionals working in the area of biodiversity in various federal departments to ensure effective communication and networking.

Our witnesses agreed that a problem in measuring impacts on biodiversity is that there are few baselines: no one knows how many species exist in Canada or elsewhere. There is no country that has anything approaching a national inventory of biodiversity. Witnesses suggested that the acquisition

³⁵ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 47, 23 November 1992, p. 12.

³⁶ *Ibid.*, p. 60.

of knowledge about species worldwide, as well as the communication of this knowledge internationally, would both assist in the preservation of biodiversity and in developing bio-industries.

Recommendation No. 6

The Committee considers that one of the fundamental building blocks of an effective National Biodiversity Strategy will be a National Inventory of Canada's Biological Diversity, and we recommend that the development of such an inventory be facilitated by the Government of Canada. The Committee further recommends that the Government of Canada support the creation of an international data bank of the world's species.

The importance of developing an inventory of species, in Canada as well as internationally, was the subject of agreement among witnesses, who also cautioned the Committee that attempts to develop inventories should not impede steps that should be taken in the meantime to preserve biodiversity. The Committee was reminded by John Herity of Environment Canada that: "We should bear in mind that there are actions that can be taken without complete knowledge of our inventory."³⁷ Nevertheless, the Committee is of the view that the development of an inventory of Canadian species is a worthwhile and important initiative.

In Canada alone, 230 animal and plant species, as well as valuable natural spaces, including old growth forests and wetlands, are known to be at risk. The most comprehensive census of living organisms to date in Canada can be found in the *Canada Country Study on Biodiversity*. The taxonomic census undertaken during the preparation of the study documented that a total of just over 70,000 species of microorganisms (not including viruses), plants and animals have been described or reported to occur in Canada (out to the 200-mile offshore limit, within Canada's Arctic sector and down to the sea floor). It is estimated that an equal number of species in Canada remain undescribed. The expertise needed to identify, interpret and assess Canadian biodiversity is at risk of being lost. The basic sciences of identification and taxonomy are the very foundations upon which our knowledge of biodiversity and its economic and social implications are built. Basic natural science courses and research groups are not being re-staffed after retirements at universities and institutions. Without training in the form of courses and programs there will not be specialists to carry on this work.

Recommendation No. 7

The Committee recommends that the Government of Canada ensure sufficient support of institutional research into the classification and study of the species of flora and fauna that make up the diversity of life.

³⁷ Ibid., p. 18.

B. The Economic Value of Biodiversity

1. Economic Instruments

Biodiversity is ultimately lost or conserved at the local level. Government policies, however, create incentives that facilitate or constrain local action. Governments regularly intervene in markets to increase agricultural production, spur industrial growth, provide a safety net for the poor, protect the environment, and support other public goods that the market place allocates poorly. Unfortunately, many industrial, transportation, natural resource and urban development policies fail to value environmental resources correctly and may even hasten resource depletion and biodiversity loss.

Diane Griffin, who spoke to the Committee on behalf of the Rural Renewal Task Force of the National Round Table on the Environment and the Economy, told us about the importance of making environmental and economic considerations integral parts of decision-making. There is an opportunity to develop cost-effective, market-driven approaches to strengthening Canada's agricultural industry and rural communities while enhancing environmental quality and biodiversity conservation.

The potential elements of trade-driven adjustment to agricultural policies and programs that may contribute to sustainable agriculture, rural renewal, and biodiversity conservation are as follows. Number one is the market forces. As international agricultural production subsidies are reduced or reprofiled, it is anticipated that commodity prices will increase. This in turn should encourage land use decisions that are more responsive to the market forces and to the sustainable capability of the land base. The second one is non-distorting commercial income support. The third one is conservation incentives.³⁸

Members of this committee are sensitive to the issues which raise tensions between urban and rural communities in regard to the conservation of biodiversity. It is understood that it is the responsibility of all Canadians to contribute to the conservation of biodiversity. *The Convention on Biological Diversity* reflects the international recognition of the intrinsic knowledge base of indigenous peoples, farmers and other groups who live off the land.

The aim of environmental management policies should be the optimal and sustainable use of natural resources, the conservation of biodiversity and the maintenance of ecological services. Policies that provide incentives for the wasteful and unsustainable exploitation of such resources, and the unnecessary reduction of biodiversity should be primary candidates for overhaul. Some policies may even invite over-exploitation of species, conversion of valuable natural habitats, and over-simplification of ecosystems. Reforming such policies makes economic sense as well as ecological sense. Inappropriate subsidies for resource use drain the national economy and impede development.

³⁸ Ibid., p. 28.

Recommendation No. 8

The Committee recommends that the Government of Canada begin the design and implementation of economic instruments for the conservation of biological diversity, and re-evaluate government subsidies, policies and programs that contribute to environmental degradation.

Examples of the type of economic instrument which may be developed to conserve biological diversity can be extrapolated from other areas of Canadian law and policy. One such example is found in Canada's tax treatment of donations of cultural property. The *Cultural Property Export and Import Act*³⁹ is designed to restrict the export of art, antiques and other objects important to Canada's cultural heritage. The objectives of the Act are met through certain provisions of the *Income Tax Act*⁴⁰ that allow cultural property to be sold, donated or bequeathed in certain circumstances without attracting capital gains tax, and that also create an income tax deduction for the fair market value of cultural gifts.

Recommendation No. 9

This Committee recommends that the Government of Canada consider extending to donations of natural heritage property the same tax treatment that applies to donations of cultural property.

2. Internalizing the Value of Biodiversity

The Committee heard from Don McAllister, as well as other witnesses, about the economic value of Canadian biodiversity. We learned that Canada realizes \$70 billion annually from its biological resources, including raw biological resources, wood fibre, farm crops and fishes. Economic benefits are also realized by the development through biotechnology of products from our raw genetic resources. Many of our agricultural species are the product of breeding new varieties and genetic engineering, by drawing on wild relatives of crops, which offer increased pest, frost, cold, drought and heat resistance. These hybrids and engineered products also offer to increase the productivity and economic benefits realized by the agricultural sector of the Canadian economy. Discoveries of new pharmaceuticals also have been demonstrated to be economically valuable.

Arthur Campeau, who was Prime Minister Mulroney's personal representative to UNCED, gave the Committee an example of the unforeseen economic value of part of Canada's biodiversity. He spoke of the Western Yew (*Taxus brevifolia*), from Canada's Pacific coast.

The Western Yew was traditionally an unwanted tree species in the forest industry, because it doesn't grow very tall and its trunk tends to twist. However, we now know that its bark has a compound, taxol, that appears to be an important anti-cancer agent. Suddenly this tree has gone from being considered virtually worthless to being an extremely valuable asset in standard economic terms in a matter of months.⁴¹

³⁹ R.S.C. 1985, c. C-51.

⁴⁰ S.C. 1970, as amended: sections 110 and 118.1.

⁴¹ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 47, 23 November 1992, p. 42.

Guarding biodiversity preserves future options of developing similar products of value in medicine, industry, agriculture and biotechnology.

There were 22 ecological services or functions of biological diversity identified in Canada's *Country Study*, such as soil production and water filtration. These functions define what organisms do to maintain the diversity, productivity, balances and health of ecosystems and the larger ecosphere. These biological functions create value and contribute services to the Canadian standard of living and gross national product but they have not been measured by traditional methods of representing value. We are failing to take into account the costs to the environment of the activities which have been traditionally seen as contributing to wealth.

Recommendation No. 10

The Committee recommends that the Government of Canada begin the process of determining the value of biological diversity, so that its value can be internalized in the calculation of our national accounts.

C. Protect Species and Spaces

Environment Canada describes 177 different eco-regions within Canada. These represent Canada's ecosystem diversity. Approximately one third are not represented by protected areas. This means these unique areas and the species they contain could be under varying threats of loss. Major conversion of natural ecosystems occurs due to human land use and activities. Agriculture (mono-culture and utilization of marginal lands), ranching (importation of exotic species), urbanization (wetland loss), transportation, mining (strip mining, tailing leachate), industry (air, land and water pollution), energy production, fishing (overfishing, bottom trawler damage) and forestry (clear-cutting) are all examples of this. While contributing to the prosperity of Canadians and the strength of our economy it also results in varying degrees of loss to biodiversity and reduces the security of sustainable development.

The Convention calls for the preservation of 12% of each country's land as protected spaces, and the *Green Plan* outlines this long-term goal for Canada as well. Today Canada has allocated 3-4% of its territory for *in situ* conservation of biodiversity, but as the Committee heard from our witnesses, the preservation of isolated pockets of land is not a solution to the loss of biodiversity. Although national parks and protected spaces are necessary and desirable, Canada must manage all its land sustainably. As Diane Griffin advised the Committee:

... and while the 12% solution that's proposed in the name of protected areas and ecological reserves and parks is laudable, the other 88% of the landscape is something we're very concerned about.⁴²

⁴² Ibid., p. 27.

Les Cooke, Deputy Minister of Saskatchewan Environment and Public Safety, reiterated this sentiment by advising the Committee:

... the loss of species and ecosystems ... putting that in a positive light, to look forward to the day when we have sound land and resource management for all the lands and resources that all of us in the world need to provide stewardship for.⁴³

On 25 November 1992 a tri-council meeting was held in Aylmer, Quebec, the participants were: Canada's Parks, Wildlife and Environment Ministers. The outcome of the meeting was a formal commitment to complete Canada's network of protected national areas by the year 2000. A public statement of commitment was endorsed at this, the first joint meeting of the three councils. The five areas of action in the statement are:

- complete networks of protected areas representative of Canada's land-based natural regions by the year 2000 and accelerate the protection of areas representative of Canada's marine natural regions;
- accelerate the identification and protection of critical wildlife habitat;
- adopt frameworks, strategies and time frames for the completion of protected areas networks;
- continue to cooperate in the protection of ecosystems, landscapes, and wildlife habitat;
- ensure that protected areas are integral components of all sustainable development strategies.⁴⁴

These actions reinforced the necessity of a joint effort between all levels of government and jurisdictions and launched Canada's follow-up action plan for meeting the commitments of the *Convention on Biological Diversity*. The Committee applauds the cooperation and efforts of the participants involved in the tri-council meeting. The Committee believes these initiatives are an effective method to meet the goal of the designation of 12% of Canada's territory, ensuring that all of Canada's eco-regions are represented, and to meet the related obligations under the *Convention on Biological Diversity*.

Recommendation No. 11

The Committee recommends that the Government of Canada, in cooperation with all levels of government, support the implementation of the five initiatives identified for action at the tri-council meeting:

- 1. complete networks of protected areas representative of Canada's land-based natural regions by the year 2000 and accelerate the protection of areas representative of Canada's marine natural regions;**
- 2. accelerate the identification and protection of critical wildlife habitat;**

⁴³ Ibid., p. 25.

⁴⁴ Environment Canada, Press Release, *Tri-Council Meeting*, Aylmer, Quebec, 25 November 1992.

3. **adopt frameworks, strategies and time frames for the completion of protected areas networks;**
4. **continue to cooperate in the protection of ecosystems, landscapes, and wildlife habitat;**
5. **ensure that protected areas are integral components of all sustainable development strategies.**

D. Legislative Initiatives

Witnesses before the Committee largely agreed that Canada was able, without passing new legislation, to ratify the *Convention on Biological Diversity*. However, it was also agreed that legislation may be desirable or even necessary in order for Canada to honour its obligations under the Convention in the future. Elizabeth May, of the Sierra Club of Canada, said that while Canada did not need legislation to be competent to ratify the Convention:

We would certainly be in violation of the Convention, I believe, if we did not move quickly to article 8(k), which is the commitment that we develop the necessary legislation for the protection of threatened species and populations. In other words, we are not required, in order to implement this convention, to have such legislation in place. We are committed to developing it, and that's why I think this committee should recommend, out of this series of hearings you're having, that we move quickly to develop endangered species legislation.⁴⁵

Article 8(k) of the Convention requires countries to develop or maintain the necessary legislation for the protection of threatened species or populations.

One of Canada's legislative gaps, as identified by witnesses before this Committee, is that of federal legislation to protect endangered species. The problem of conserving biological diversity is much broader, of course, than the protection of individual species, but the endangerment of species is a signal of a threat to biodiversity. As Stewart Elgie of the Sierra Legal Defence Fund indicated to the Committee, "Perhaps the best barometer of declining biodiversity is the extinction of species."⁴⁶ It is one of the only indicators available to us. Therefore legislation for the protection of individual species and their habitat is an important method of protecting biodiversity.

The United States has had legislation in place to protect endangered species and their habitats since 1973. The *Endangered Species Act* has been strengthened several times over the years, and although its critics have charged that the Act has been used unreasonably by environmentalists to stall or impede development, it is seen by others as an essential tool for the protection of species that may be the "canaries in the coal mines" of the natural environment. The Act has as its objective the conservation of the habitats upon which endangered species depend, and its protections are extended to all members of the plant and animal kingdom. Under the Act, endangered or threatened species and their "critical habitat" are identified, and penalties are imposed for the "taking" of listed species. Federal actions which would adversely modify critical habitat are prohibited under the Act.

⁴⁵ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 47, 23 November 1992, p. 38.

⁴⁶ *Ibid.*, p. 29.

Walter Reid, although he was of the opinion that the U.S. would not need legislation to enable it to sign and ratify the *Convention on Biological Diversity*, identified several gaps in the current American legislative framework. These were areas that he suggested might be considered by the American government as subjects of implementing legislation under the *Convention on Biological Diversity*, after any decision is made by the new administration to sign it. These gaps included legislation which would require that biodiversity be inventoried and monitored, legislation to sort out potential intellectual property conflicts which may develop as a result of the ratification of the Convention, legislation to remove subsidies which encourage the destruction of biodiversity, and legislation to prevent negative impacts on biodiversity.

The convention suggests that appropriate economic incentives should be adopted for biodiversity conservation. I'm sure that environmental groups in the United States may construe this to mean that some of the subsidies we have that currently promote the destruction of biodiversity possibly should be removed. There might be legislation in that area.⁴⁷

There is already a legislative initiative underway in the American legislature, the proposed biological diversity bill, which would fill some of these gaps.

This Committee is of the view that these areas might also be considered as possible subjects of legislative initiatives in Canada, as part of Canada's National Biodiversity Strategy. As this Committee stated in its March 1992 report called *Environment and the Constitution*, Canada's constitutional framework is such that the area of biodiversity conservation involves the overlapping jurisdictions of several levels of government.⁴⁸ Indeed, the threats to biodiversity, as well as to species and their habitats and ecosystems, are so complex and interrelated, that the members of the Committee are of the view that to be successful, any legislative initiative in this area must fully involve all levels of government. Therefore, the members wish to stress the importance of full consultation with other levels of government, as well as other interested parties, in the development of any such legislation. The Committee would suggest that the task of developing legislative strategies to protect biological diversity might be assigned to the Canadian Council of Ministers of the Environment, but only to the extent that all provinces and territories will be reached through this forum.

Recommendation No. 12

The Committee recommends that the Government of Canada, working with the provinces and territories, consider the necessity of legislation to conserve biological diversity within Canada, and take immediate steps to develop an integrated legislative approach to the protection of endangered species, habitat, ecosystems and biodiversity in Canada.

The Committee was told that the preservation of biodiversity and impacts upon endangered species have not been expressly included as factors to be considered in environmental assessments under the *Canadian Environmental Assessment Act*, which has been passed by Parliament but is not

⁴⁷ Ibid., p. 64.

⁴⁸ Report of the Standing Committee on Environment, *Environment and the Constitution*, March 1992.

yet proclaimed. Stewart Elgie suggested to the Committee that all federal environmental assessments should consider the effects of projects on biodiversity in general, and endangered, threatened and vulnerable species in particular. The members of the Committee are concerned that Canada's commitments under the Biodiversity Convention may have implications for the *Canadian Environmental Assessment Act* and its application. Indeed, the Committee expects that Canada's new obligations are being considered in the context of environmental assessment decisions under the existing regime, the *Environmental Assessment Review Process (EARP) Guidelines Order*.

Recommendation No. 13

The Committee recommends that the Government of Canada take whatever steps are necessary to ensure that its environmental assessments take full account of Canada's obligations under the Biodiversity Convention.

The Committee heard about, and has discussed above, the importance of preserving biodiversity by setting aside 12% of the eco-regions of Canada. Biodiversity should become an important criterion in the selection and management of Canada's national parks, according to Stewart Elgie, to implement paragraphs (a) and (b) of Article 8 of the *Convention on Biological Diversity*, which deal with the concept of setting aside protected areas where special measures need to be taken to protect biological diversity. Some members of the Committee felt it important to cast this suggestion in the light of the Committee's continued commitment to all the purposes of Canada's national parks, such as their important role in the education, enjoyment and recreation of Canadians.

Recommendation No. 14

The Committee recommends that the policies of Parks Canada and the regulations promulgated under the *National Parks Act* fully reflect and fulfill Canada's obligations under the Biodiversity Convention.

United Nations Framework Convention on Climate Change

SCIENTIFIC UPDATE ON CLIMATE CHANGE

The mounting evidence that human activities were beginning to alter the basic equilibrium processes of the Earth compelled the House of Commons Standing Committee on Environment in 1989 to launch an exhaustive study of global climate change. This comprehensive investigation resulted in the release of two reports. An interim report, *No Time To Lose: The Challenge of Global Warming*, was tabled to Parliament in October 1990, to be followed by the Committee's detailed report, *Out of Balance—The Risks of Irreversible Climate Change*, in March 1991. Two years have passed since our study and new scientific knowledge has been gained. Elizabeth Dowdeswell, Assistant Deputy Minister, and head of the Atmospheric Environment Service, Environment Canada, told the Committee:

... changes in our knowledge ... are largely matters of degree, rather than matters of change in direction.⁴⁹

Climate change predictions are now being fine-tuned as more accurate information on cloud formation, ocean effects, plant-growth stimulation, sulphate pollution, carbon dioxide cycle and ozone depletion are accumulated and applied to models. The Intergovernmental Panel on Climate Change (IPCC) has been quick to respond to the new scientific data and in February 1992 issued a supplementary report to the original IPCC document. According to this supplement the major IPCC conclusions are:

- emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases: carbon dioxide, methane, chlorofluorocarbons, and nitrous oxide;
- the evidence for the modelling studies, from observations and the sensitivity analyses, indicate that the sensitivity of global mean surface temperature to doubling CO₂ is unlikely to lie outside the range 1.5° to 4.5°C;
- there are many uncertainties in our predictions particularly with regard to the timing, magnitude and regional patterns of climate change due to our incomplete understanding;
- global mean surface air temperature has increased 0.3° to 0.6°C over the last 100 years;
- the size of this warming is broadly consistent with predictions of climate models, but it is also of the same magnitude as natural climate variability. Thus the observed increase could be largely due to this natural variability; alternatively this variability and other human factors could have offset a still larger human-induced greenhouse warming;

⁴⁹ *Minutes of Proceedings and Evidence of the Standing Committee on Environment.*, Issue No. 48, 30 November 1992, p. 6.

- the unequivocal detection of the enhanced greenhouse effect from observations is not likely for a decade or more.⁵⁰

Elizabeth Dowdeswell informed the Committee that there has been one major change in our knowledge since 1990:

... and is that chlorofluorocarbons are believed to be much less significant contributors to global warming than previously thought.

That is not of great significance to the climate change convention itself, because in fact when we were designing the Convention, we had referred the greenhouse gases except for those controlled by the Montreal Protocol, so we had taken that into account.⁵¹

Although this reevaluation of the contribution of CFCs to global warming may have little significance in the context of the *UN Framework Convention on Climate Change*, the *1992 IPCC Supplement* has, from a scientific point-of-view, described this information as a "significant new finding". According to the *1992 IPCC Supplement*:

Depletion of ozone in the lower stratosphere in the middle and high latitudes results in a decrease in radiative forcing which is believed to be comparable in magnitude to the radiative forcing contribution of chlorofluorocarbons (CFCs) (globally-averaged) over the last decade or so.⁵²

This information is also of considerable significance to the Environment Committee. This Committee has extensively studied the threat of stratospheric ozone depletion and has tabled two reports to Parliament on this problem, *Deadly Releases CFCs* (June 1990) and *Ozone Depletion: Acting Responsibly*, (June 1992). CFCs are known to have the highest global-warming potential of all the greenhouse gases. Yet CFCs are now thought to be so effective at destroying ozone as to neutralize their own global warming effect. This information reaffirms the Committee's concern regarding the serious nature of stratospheric ozone depletion.

As the potential risks of climate change become more apparent to nations worldwide the level of scientific inquiry increases. To combat climate change effectively it is essential that Canadian policy be continually updated as new knowledge arises. Elizabeth Dowdeswell told the Committee:

All policy making related to climate change must be based on a solid scientific foundation.⁵³

Minister Jean Charest also confirmed this prerequisite for policy development:

On the question of carbon dioxide, our policy is described as a policy of a first step. Canada's policy of stabilization at 1990 levels for the year 2000 is one that will be called upon to evolve depending on the evolution of the science.⁵⁴

⁵⁰ Intergovernmental Panel on Climate Change, *1992 IPCC Supplement*, February 1992, p. 6.

⁵¹ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48, 30 November 1992, p. 6.

⁵² Intergovernmental Panel on Climate Change, *1992 IPCC Supplement*, February 1992, p. 6.

⁵³ E. Dowdeswell, Brief presented to the House of Commons Standing Committee on Environment, Appended to the *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48, 30 November 1992, Appendix Envo-18, p. 1.

⁵⁴ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 45, 16 November 1992, p. 29.

CONVENTION NEGOTIATIONS

Canada played a lead role during the negotiations for a convention on climate change. Well in advance of the climate change negotiations, the serious nature of climate change was apparent not only to the Environment Committee and federal government departments, but also to environmentalists and policy makers at the provincial and municipal levels. As a result the Canadian delegation brought a high level of knowledge and scientific expertise to the negotiating sessions.

The Canadian delegation included federal and provincial parliamentarians, premiers and ministers from British Columbia, Manitoba, Newfoundland, Prince Edward Island, Quebec, and the Northwest Territories. Women, youth, indigenous people, business, labour, and development and environmental NGOs were also represented. The Canadian negotiating team included officials from Environment Canada, EAITC, Fisheries and Oceans, Forestry Canada, Finance and CIDA. The Honourable David MacDonald, Chairperson of the Environment Committee, brought the Committee's concerns to all of the negotiations in his capacity as Advisor to the Canadian Delegation. Sound knowledge of atmospheric science was provided by Elizabeth Dowdeswell, who was Canada's principal delegate to the IPCC; and by officials from the Atmospheric Environment Service.

Canada had a clearly-defined position that paralleled our *Green Plan* commitment of stabilizing greenhouse gas emissions at 1990 levels by the year 2000. At the negotiations Canada pressed for targets and schedules, and pursued two main objectives:

- to conclude a framework convention as an effective tool for concrete, cooperative international action, agreed to by the maximum number of countries, equitable to all parties, and achievable in a cost-effective manner;
- to launch follow-on implementing steps, which should begin as soon as possible.

In addition, Canada went to the negotiations with three aims: (i) to preserve Canada's competitiveness; (ii) to provide opportunities for Canadian business; and (iii) to involve as many countries as possible using a common approach that allows differentiated action among countries.

The climate change negotiations began in February 1991 and ended in May 1992 after five negotiating sessions. During the early negotiations a number of countries, in particular some European nations, favoured well-defined emission reduction targets and timetables. It should be noted that well prior to UNCED negotiations Germany, Denmark and New Zealand had all adopted voluntary carbon dioxide reduction targets that were more ambitious than those of Canada. Based on 1987 carbon dioxide levels, Germany had proposed a 25% reduction in emissions by 2005. Both Denmark and New Zealand had pledged to reduce 1990 carbon dioxide emission levels by 20% in 2000. A similar target was proposed in the Environment Committee's 1990 report *No Time To Lose: The Challenge of Global Warming*. Specifically, we recommended a 20% reduction in 1988 carbon dioxide emissions by 2005. However, the Government of Canada chose to adopt the less rigorous goal of stabilizing Canadian greenhouse gas emissions at 1990 levels by 2000.

Initial drafts of the Convention were opposed by the United States and a number of oil-producing countries. The United States felt that the countries supporting the timetables did not have credible plans for stabilizing emissions, while the United States had already committed itself to

an action plan that by the year 2000 would reduce emissions by 7-10% of a business-as-usual scenario. They felt that in the absence of sound scientific evidence it would be unwise to support emission-reduction programs that might impinge upon the United States economy. After much negotiation and compromise a convention lacking in firm targets and timetables was drafted. At the Earth Summit the United States signed *The United Nations Framework Convention on Climate Change*, and on 15 October 1992 it became the fourth nation (the first industrial nation) to ratify the Convention.

It is expected that the new Clinton-Gore Administration will alter the direction of United States environmental policy. According to a recent report on United States public policy issues the new administration will work toward strengthening *The United Nations Framework Convention on Climate Change*, address global warming through energy efficiency and technology transfer initiatives, and attempt to stabilize carbon dioxide emissions by the year 2000.⁵⁵

SCOPE OF THE CONVENTION

The final Convention text represented a compromise.

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant position provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.⁵⁶

Developed countries agreed (i) to assist developing nations with the technology and resources they would need to meet their obligations under the treaty; (ii) to limit emissions of greenhouse gases; and (iii) to publicly report on their progress. One of the central principles of the Convention states "that any policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost." The Convention was signed by 154 nations, and will become legally binding when ratified by 50 countries. For further detail on the Convention the reader is referred to Appendix C, where *The United Nations Framework Convention on Climate Change* appears in its entirety.

Minister Jean Charest informed the Committee that an analysis of the Climate Change Convention had been conducted. This analysis indicated that Canada could ratify the Convention without the passage of new legislation. In fact, Canada's *Green Plan* commitment to stabilize the

⁵⁵ N. Maloley, "Environmental Issues in a Clinton/Gore Administration," *Washington in Transition*, Buron-Marsteller, Washington, D.C., December 1992, p. 5.

⁵⁶ U.N. General Assembly, *United Nations Framework Convention on Climate Change*, U.N. document A/AC.237/18, 1992, p. 5.

emission of greenhouse gases at 1990 levels by 2000 already parallels the basic requirements of the Convention. Jean Charest spoke very positively about this initiative and pointed out:

... that what we are proposing to Canadians is something that makes economic sense in itself. We don't expect any undue hardship to come from this policy, quite the contrary. Our commitments in the area of climate change are all going to make good economic sense in themselves.⁵⁷

112. Prime Minister Mulroney signed the Framework Convention on Climate Change in Rio de Janeiro on 12 June 1992, and pledged that Canada would ratify the Convention by the end of 1992. In September, The Council of Energy Ministers advocated prompt ratification, and additional support for early ratification came in November from the CCME. On 4 December 1992, in an historic ceremony in Delta, British Columbia, the Prime Minister signed the document ratifying the *UN Framework Convention on Climate Change*.

113. Probably no other document coming out of UNCED has been so soundly and loudly criticized as the *UN Framework Convention on Climate Change*. Opponents of the final document, particularly environmental groups, claim that the lack of targets and timetables render the Convention ineffectual. In contrast, proponents claim that the lack of arbitrary targets and rigid timetables are the Convention's saving grace. Quite simply, a document not open to flexibility would not have been signed by a large number of nations. On this point Elizabeth Dowdeswell told the Committee:

It won't do Canada or any other country much good if the Convention ultimately is a convention of 8 or 10 parties. We want to find a mechanism that helps to bring people to the table, rather than threatens to send them away. That is the essence of the positive nature of the Convention.⁵⁸

In further praise of the document, Elizabeth Dowdeswell said:

... it remains a very flexible instrument, one that is going to allow us to respond as the science becomes stronger, becomes better defined, and as countries are prepared to take the appropriate actions.⁵⁹

114. The Committee was encouraged to hear that Canada has initiated a "quick start agenda" to maintain international momentum on the climate change issue. According to Elizabeth Dowdeswell, Canada has pledged to:

- ratify the Convention by the end of 1992 (ratified 4 December 1992);
- promote a work plan to meet the scientific needs of the Convention (work plan accepted in November 1992);
- sponsor a meeting of officials of the Global Environment Facility and Convention negotiators to discuss interim funding for country studies (the meeting took place in late October 1992);

⁵⁷ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 45, 16 November 1992, p. 29.

⁵⁸ *Ibid.*, Issue No. 48, 30 November 1992, p. 7.

⁵⁹ *Ibid.*

- host an international meeting on the application of a comprehensive approach to limiting greenhouse gas emissions;
- through contributions to a World Meteorological Organization Trust Fund, enhance climate observing systems in developing countries and assist at least two developing countries to build their capacity to meet the reporting requirements of the Convention;
- press for continued negotiations to resolve outstanding issues in time for the first meeting of the parties to the Convention. The negotiations will resume in Geneva from 7-10 December and continue through 1993; and
- prepare a National Report on Canada's actions to meet its commitments under the Climate Change Convention by June 1993.⁶⁰

REALISTIC MITIGATION OPTIONS

A. Domestic Action

Canadian action to slow climate change precedes the *UN Framework Convention on Climate Change*. Environment Canada has nearly completed a greenhouse gas inventory. The best available data indicates that in 1990 Canada emitted 461 million tonnes of carbon dioxide, 3.7 million tonnes of methane, and approximately 92 thousand tonnes of nitrous oxide. In addition, under a business-as-usual scenario it is believed that by the year 2000 Canadian emissions of carbon dioxide would grow by between 11 and 13%.

Elizabeth Dowdeswell, in her written brief, outlined to the Committee the many initiatives that the federal government has undertaken to limit the release of greenhouse gases. These include:

- setting minimum energy efficiency standards and enhancing Energuide labelling of appliances and products through the Efficiency and Alternative Energy program;
- encouraging a more energy-efficient Canadian building industry through the Homes and Building initiatives;
- improving and expanding the performance, availability and use of alternative transportation fuels technologies through Alternative Energy initiatives;
- encouraging and fostering the planting of up to 325 million trees over the next six years;
- providing Canadians with a better understanding of the climate change issue through the Atmospheric Change Learning Campaign of the Environmental Citizenship Initiative; and

⁶⁰ E. Dowdeswell, Brief presented to the House of Commons Standing Committee on Environment, Appended to the *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48A, 30 November 1992, Appendix Envo-18, p. 2-3.

- the release of a discussion paper on the use of economic instruments.⁶¹

In addition to action at the federal level, the issue of climate change is being addressed at both the provincial and municipal levels. Metropolitan Toronto has joined an international effort called the *Urban Carbon Dioxide Reduction Project*, sponsored by the United States Environmental Protection Agency and the International Council for Local Environmental Initiatives. The participating cities met in Toronto in the summer of 1991, where they launched a two-year project to create a blueprint for action applicable for cities to reduce carbon dioxide emissions. Their goal is to reduce emissions by 20% by the year 2000. Although not members of the *Urban Carbon Dioxide Reduction Project*, the cities of Vancouver, Regina and Ottawa have announced similar carbon dioxide reduction goals. Vancouver and Regina intend to reduce carbon dioxide emissions by 20% of 1988 levels by 2005. Ottawa will also attempt a 20% reduction by 2005, with 1990 as the baseline year. In addition, the Ontario Ministry of Environment and Energy is sponsoring a 10-city project called the Ontario Municipal Energy Collaborative. The goals of the Collaborative are to study, devise and implement conservation and efficiency initiatives to save energy and reduce carbon dioxide emissions. To date nine cities, Ottawa, Sudbury, Toronto, North York, Scarborough, Kitchener, Peterborough, Burlington and Mississauga, have joined the Collaborative.

At the provincial level, the CCME, in November 1990, released the *National Action Strategy on Global Warming*. This document was prepared under the joint auspices of provincial environment and energy ministers, and proposes a strategic framework for actions to be undertaken jointly by governments and all other sectors of the economy. The Provincial-Territorial Advisory Committee (PTAC), composed of provincial and territorial environment and energy ministers, was established to give advice and counsel to the federal government, through the CCME, during Canadian negotiations on the *UN Framework Convention on Climate Change*. It is expected that PTAC will continue to play an important advisory role and assist in coordinating future federal and provincial action to combat climate change.

B. Further Direction

As stated earlier, one of the central principles of the Convention is that any policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. When the Environment Committee previously addressed this concern, two to three years ago, there was much debate as to whether mitigative action might award net positive benefits in the form of energy savings or be so expensive as to cause harsh economic hardship. Evidence provided to the Committee in this study indicate that these points are no longer a matter of intense debate. Efforts directed toward the reduction of all greenhouse gases should yield substantial benefits in the areas of pollution abatement, energy conservation, efficiency, and increased competitiveness.

Today, the hundreds of different mitigation strategies available to reduce greenhouse gas emissions have been subjected to comprehensive analytical evaluation. These strategies can be roughly grouped into three categories: (i) no-cost strategies, where the long-term financial return more than compensates initial cost, (ii) low-cost strategies, that are either revenue neutral or where the pay-back fails to fully cover the initial cost of implementation, and (iii) high-cost strategies where emission abatement and environmental benefits are achieved at considerable expense.

⁶¹ Ibid., p. 3-4.

Erik Haites, Principal, Barakat and Chamberlin, cautioned the Committee:

Some of those studies suggest that the appropriate amount of energy efficiency can be had with net savings. Others suggest some relatively small net cost. I think it's important to recognize that most of those studies overlook some costs—for example, the administrative costs of implementing those measures—and some losses in economic efficiency. . .

Therefore, my sense is that those analytical studies tend to be underestimates of the cost.⁶²

However, Erik Haites does believe that the *Green Plan* goal can be achieved by the year 2000 at reasonable cost.

The three key approaches available to us . . . are improved energy efficiency, fuel switching from more carbon-intensive fuels to less carbon-intensive fuels, and some sort of offsets such as reforestation to offset carbon dioxide emissions.⁶³

The United States government, during the previous Bush-Quayle Administration, argued that current scientific understanding of global climate change was too crude and uncertain to warrant greenhouse gas stabilization programs.^{64, 65} In spite of this stand, the United States recognized the economic benefits to be gained through efficiency programs and committed itself to an action plan that is expected by the year 2000 to reduce the emission of greenhouse gases by 7-10% of a business-as-usual scenario. In addition, the United States Congress in 1988 asked the National Academy of Sciences to conduct an extensive study of the policy implications of greenhouse warming. Deborah Stine, of the United States National Academy of Sciences, who at the time was the study director for the mitigation panel of the study, addressed the Committee and outlined what the U.S. considers the realistic mitigation options to combat potential climate change.

Energy efficiency improvements in the building, transportation and industrial sectors emerged as the most cost-effective measures for reducing greenhouse gas emissions. Deborah Stine told the Committee:

Adopting reasonable energy efficiency measures throughout the economy could actually save the United States \$10 billion to \$100 billion a year in U.S. dollars and also reduce current U.S. greenhouse gas emission by 10% to 40%. This is big money and a significant cut in emissions, but it will take political leadership to bring about this reduction in emissions at a net savings.⁶⁶

In addition, the mitigation panel found that reformed reforestation policies could contribute a further 3% reduction to 1990 U.S. carbon dioxide emissions.

The study showed that the corporate average fuel economy (CAFE) of United States automobiles could be increased from 18.2 to 32.5 miles per gallon (12.9 to 7.2 litres per 100 km) at a net cost savings. There is vehement disagreement from the automobile industry which claims that

⁶² *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48, 30 November 1992, p. 15.

⁶³ *Ibid.*, p. 14.

⁶⁴ *Policy Implications of Greenhouse Warming—Synthesis Panel*, National Academy Press, Washington, D.C., 1991, 127 p.

⁶⁵ G. Porter, *Global Environmental Politics*, Westview Press, Boulder, Colorado, 1991, 208 p.

⁶⁶ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48, 30 November 1992, p. 20.

study researchers did not factor auto safety, consumer comfort and market behaviour considerations into their environmental decision making.⁶⁷ However, it should be noted that claims of decreased automobile safety may be at odds with the fact that in the United States between 1975 and 1988 the average weight of a car dropped by 455 kg, fuel efficiency doubled and traffic fatalities dropped by 40%.⁶⁸

In 1982 Parliament passed a series of energy related Bills. Among these was Bill C-107, the *Motor Vehicle Fuel Consumption Standards Act*, which addressed the issue of fuel efficiency in passenger vehicles. The Bill sought to impose mandatory CAFE standards on fleets of vehicles offered for sale in the Canadian market. The Canadian automobile manufacturing lobby was against proclamation of the Bill. They proposed to bring their fleet-average fuel-efficiency level to or below that proposed by regulation on a voluntary basis. The fleet has always met or surpassed the standards set. According to officials at the Department of Energy, Mines and Resources the average fleet efficiency of all new cars sold in Canada has been below the level established by the Department for each year. In fact, the 1989 objective was 8.6 litres per 100 kilometres⁶⁹ and the actual fleet average was 8.2 litres per 100 km. Bill C-107 has of April 1993, not been proclaimed and therefore does not have the force of law. The government has set progressively lower fuel consumption standards and monitors fleet efficiency on an annual basis.

It is recognized that a CAFE goal of 7.2 litres per 100 km is achievable using existing technology. These energy efficiency gains could be obtained without altering the overall fleet mix through improvements in engine designs, drive trains, transmissions, and car aerodynamics.⁷⁰ One problem with achieving vehicle efficiency improvements is that it takes years for their full effect to be felt. In North America a new vehicle takes 4 to 5 years to go from prototype to product.⁷¹ In addition, passenger car turnover rates are slow, on the order of 7 to 8 years.⁷² Accordingly, to achieve a reduction in automobile carbon dioxide emissions by 2000, a new CAFE standard must be established with all due haste.

Recommendation No. 15

The Committee recommends that the Government of Canada move toward a corporate average fuel economy standard of 7.2 litres per 100 km for passenger cars, and continuously tighten this standard as new technologies evolve.

The Committee continues to press for a concerted effort by government and industry to support alternative energy sources, such as solar, wind and hydrogen, through research and development funding. Toward the goal of a CAFE standard of 7.2 litres per 100 km, the Committee reaffirms the recommendation contained in its report, *From Words to Action* (December 1992), regarding alternative fuel and transportation technologies (battery/fuel cell):

⁶⁷ E.S. Rubin, et al., "Realistic mitigation options for global warming," *Science*, Vol. 257, 10 July 1992, p. 148-149 & 261-266.

⁶⁸ Michael Shepard, "How to Improve Energy Efficiency," *Issues in Science and Technology*, Summer 1991, p. 87.

⁶⁹ Personal Communication, Anthony Taylor, Director, Transportation Energy, Efficiency and Alternative Energy Branch, Energy, Mines and Resources Canada, 5 January 1993.

⁷⁰ E.S. Rubin, et al. (1992).

⁷¹ A.M. Altshuler, et al., *The Future of the Automobile*, Cambridge, Massachusetts, MIT Press, 1984.

⁷² M.C. Holcomb, et al., *Transportation Energy Data Book: Edition 9*, Report ORNL-6325, Prepared for the United States Department of Energy, Oak Ridge National Laboratory, Oak Ridge, Tennessee, 1987.

The adoption of the California standard for automobile emissions, by California itself and by a number of states in the northeastern U.S., creates a unique incentive for the development of clean transportation technologies. By 1999, 2% of the cars sold in California will have to be battery-powered. This figure rises to 5% in 2001 and 10% in 2003. Other measures will include alternative fuels, such as alcohol or natural gas. The window of opportunity will be brief and others will be quick and willing to exploit it; accordingly, the Sub-Committee recommends: That the federal government, regardless of the prevailing economic policies, increase support for research and development into clean transportation in the near term, particularly in the areas of alternative fuels and electric transportation.⁷³

Under the United States Federal Vehicle Fuel Efficiency Program, federal agencies on April 17, 1991 (as part of the Executive Order on Federal Energy Management, issued by then President George Bush) were directed to reduce gasoline and diesel consumption by at least 10% by 1995, compared with the 1991 level. Executive Order 12759 on the same day required that the federal government acquire alternative-fuel vehicles (AFVs) as rapidly as practicable. The U.S. government plans to be operating 50% of its federal fleet as AFVs by 1998.⁷⁴ As of January 31, 1992 approximately 8.2% of the U.S. federal government fleet was comprised by AFVs, with plans to increase this to 20.2% by 1993.⁷⁵ Canadian figures reveal that in 1990 3.1% of the federal government fleet, excluding the Department of National Defence and Transport Canada, were AFVs.⁷⁶

Recommendation No. 16

The Committee recommends that the Government of Canada support the shift to alternative fuels and transportation technologies by converting as many federal vehicles as possible to alternative fuels, and by annually increasing the percentage of alternative-fuel vehicles in the government fleet; such that, where practicable, alternative-fuel vehicles comprise as close as possible to 100% of new vehicle purchases by 1998.

Deborah Stine informed the Committee that net cost savings would also accrue from fundamental improvements in industrial process design, the development of cogeneration systems and energy recovery systems and the development of more efficient motors, electrical drive systems, and furnaces. Fuels (energy) switching from electricity to natural gas and fuel oil for building appliances and heating systems is estimated to reduce emissions by 890 million tons per year at a cost savings of \$62 (U.S.) per ton. However, fuel switching from coal to natural gas or oil for electricity generation is expected to have a net cost of \$30-70 (U.S.) per ton of carbon dioxide not emitted. The American study also showed that fuel switching from coal to other non-carbon dioxide emitting technologies, such as nuclear, solar or wind, for electricity generation would reduce emissions by up

⁷³ House of Commons Standing Committee on Environment, *From Words to Action*, December 1992, p. 27.

⁷⁴ Government of the United States, *National Energy Strategy, Powerful Ideas for America, One Year Later*, February 1992, p. 18-19.

⁷⁵ *Ibid.*

⁷⁶ Personal communication, Marie Schingh, Advisor Alternative Energy, Efficiency and Alternative Energy Branch, Energy, Mines and Resources Canada, 17 February 1993.

to 1 billion tons per year, but would have an additional annual cost of \$30 billion.⁷⁷ In Canada in 1991 the energy mix for electricity generation was nuclear 16%, fossil fuels 22% (coal 16.7%) and hydro-power 62%.⁷⁸

Similarly, it is expected that fuel switching at Canada's large thermal-electric plants would reduce the emission of greenhouse gases but at a net cost. However, the opportunity does exist in Canada to produce a larger proportion of our electricity by cleaner means at reduced cost. Unlike electric utilities in the United States, Canadian electric monopolies are not obligated by law to purchase electricity from non-utility generators. In her written presentation to the Committee, Louise Comeau, Climate Change Campaigner, Sierra Club, called for grid access for independent power producers.⁷⁹ The guarantee of grid access would give additional encouragement to municipalities and entrepreneurs to tap a number of energy sources for the generation of electricity; for example, natural gas from sewage-treatment plants and landfill sites, industrial waste process heat, and renewable sources such as biomass, wind and solar energy.

Recommendation No. 17

In recognition of the electrical grid system as an asset of national importance, and as a means to facilitate the reduction of Canadian greenhouse gas emissions, the Committee recommends that the Government of Canada work with the provincial and territorial governments to improve grid access and fair market value for all electricity generated by non-utility generators from reclaimed and renewable energy sources.

Many of the initiatives described by Deborah Stine to improve energy efficiency in the building, industrial and commercial sectors have already been initiated in Canada with a high degree of success. Canada has been, and continues to be, a world leader in energy efficiency building design and standards. Canadian R-2000 technical standards offer significant energy savings, with a relatively small consequential increase in building costs.^{80, 81}

Energy management is clearly showing itself to be well worth the investment for those charged with operating hospitals, hotels, convention centres, office complexes and schools.⁸² For example, the Frontenac Board of Education implemented a 4-year energy efficiency improvement program at its 50 area schools. The program cost an estimated \$1 million, but achieved energy savings of \$1.2

⁷⁷ Panel on Policy Implications of Greenhouse Warming, *Policy Implications of Greenhouse Warming - Mitigation, Adaptation, and the Science Base*, National Academy Press, Washington, D.C., 1992, Chapter 6, p. 48-64.

⁷⁸ Energy, Mines and Resources Canada, *Electric Power in Canada 1991*, Ottawa, 1992, p. 38-45.

⁷⁹ Louise Comeau, *Mitigative Action: The Economic Considerations of Implementing the Climate Change Convention*, Brief presented to the House of Commons Standing Committee on Environment, appended to the *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48A, 30 November 1992, p. 9.

⁸⁰ L.C. Myers, *Energy Efficiency: Future Improvement*, Background Paper 310E, Research Branch, Library of Parliament, Ottawa, September 1992.

⁸¹ Jack Cole, Manager of the R2000 New Home Program at Energy, Mines and Resources Canada, advises that in 1992 just over 1% of new single family, semi-detached and row house units in Canada were built to R2000 standards. The extra cost involved in meeting these standards is between two and five percent of the total construction cost.

⁸² L. C. Myers (1992).

million over the same time period.⁸³ The University of Guelph received a \$200,000 Ontario Hydro capital expenditure rebate after it spent \$400,000 on a new variable speed pump for the central heating-cooling facility. The new pump varies the flow of water through the system to match the demand for air conditioning and heating, and in the process saves the university \$100,000 per year in electricity.

In both the domestic and commercial sectors energy savings can be realized through investment in efficient fluorescent lighting. Replacement of a 75 watt incandescent bulb with a 15 watt compact fluorescent bulb will provide the same amount of light for 13 times longer, and cut energy consumption by 80-90% over the lifetime of the bulb.⁸⁴

Given that there are many energy-efficiency investments that are not only beneficial to the environment but also yield relatively short-term financial benefits, it seems unusual that more consumers and more businesses are not taking advantage of these opportunities. One of the hurdles confronting greater market penetration by new energy-efficient technologies is a lack of precise and readily available information on the cost-benefits of these technologies. For example, an additional \$20 added to the weekly grocery bill for the purchase of a compact fluorescent bulb is difficult for the consumer to justify if accurate pay-back information is not readily available. This need for public education and information programs was expressed by Deborah Stine.⁸⁵ The Canadian government already assists the consumer in finding products that ease the burden on the environment. The Environmental Choice program subjects products to a set of environmental life-cycle criteria. Products that meet certification criteria are identified to the consumer by the EcoLogo, three intertwined doves in the form of a maple leaf. While the actions of this program are laudable, Environmental Choice does not aggressively disseminate cost pay-back information, collect and publicize examples of energy efficiency success stories, or focus its information beyond the consumer to the industrial and commercial sectors.

Recommendation No. 18

The Committee recommends that the Government of Canada establish a program or expand the mandate of an existing program (i) to document successful energy efficiency initiatives, (ii) to maintain a record of current energy-efficiency programs provided by governments and public utilities, (iii) to conduct cost-benefit and investment pay-back analyses on new energy-efficient products and technologies, and (iv) to effectively disseminate this information to the domestic, commercial and industrial sectors.

According to the *1992 IPCC Supplement*, the approximate one-half degree of warming experienced during the past century is within the range of natural climatic variation. However, evidence also suggests that other human factors may be offsetting more extensive warming. Reduced radiative forcing due to ozone depletion is such an example.

⁸³ "Electric Options," *Ontario Hydro*, No. 45, September 1990.

⁸⁴ J. Cherfas, "Skeptics and Visionaries Examine Energy Saving," *Science*, Vol. 251, 11 January 1991, p. 154-156.

⁸⁵ D. Stine, *Scientific Assessment and Approaches to Curtailing Global Warming*, Written presentation to the House of Commons Standing Committee on Environment, 30 November 1992, p. 5.

This Committee accepts the preponderance of scientific evidence, and is of the opinion that the potential risks of climate change preclude waiting for scientific verification. There is strong support for the "precautionary principle", that is, when in doubt, act rather than wait. Mobilization of the no-cost mitigative actions is the sensible first approach. However, there is the feeling among environmentalists and some Committee members that we should be doing more, we should be implementing other mitigation options even though the net cost may be high.

Erik Haites suggested that during this decade we should place the no-cost first-line of defence into action, and at the same time funding should be directed to research and the development of a second line of no- or least-cost defences. The Committee is of the opinion that greater emphasis should be placed on research to stimulate the development of a second-generation of energy-efficient technologies.

Recommendation No. 19

The Committee recommends that the Government of Canada encourage private and public sector research initiatives for the development and introduction of a second-generation of energy-efficient technologies by the year 2000.

PRACTICAL CONCERNS AND POLICY DIRECTION

The Environment Committee's 1991 report, *Out of Balance—The Risks of Irreversible Climate Change*, described many if not most of the mitigation options outlined to the Committee in this study. However, it is clear that most of the possible mitigative actions have now been well studied, subjected to economic analysis and prioritized. The Committee believes that the major challenge presently facing decision makers is not what needs to be done, but rather how will it be done? What are the impediments and what policies must be developed to facilitate change?

Presentations from a major utility, TransAlta, and from the Canadian and Ontario Trucking Associations revealed one common concern. In essence, implementation of any policy that would put them at a competitive disadvantage, domestically or internationally, was unacceptable. The trucking industry is understandably quite concerned about the effect a potential carbon tax would have on their ability to compete. The difficulties surrounding a carbon tax were discussed by Minister Jean Charest:

In Canada, you have to remember, a carbon tax would apply in a different context from most countries. We already use our fuel distribution retail system for taxing purposes and we use it extensively. Provincial and federal governments do that. Whether or not we would choose to pursue that course is something we would want to think about very carefully. What I can tell you in terms of the carbon tax is that in this context it is certainly not contemplated as something the government would want to put forward. We are not interested in new taxes at this point in time.⁸⁶

There was general accord among the industrial and NGO witnesses before the Committee that the correct blend of economic instruments held the greatest promise for achieving cost-effective reductions in greenhouse gas emissions. Jim Leslie, Senior Vice-President, Corporate Services, TransAlta Utilities, built a strong case for the development and use of economic instruments:

⁸⁶ *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 45, 16 November 1992, p. 31.

For some time, we've been advocating to government, to our industry, and to stakeholders generally the usefulness and feasibility of harnessing the economic forces of the marketplace in order to deal with environmental issues such as climate change.

The key considerations inherent in the climate change convention as we see them are cost-effectiveness, comprehensiveness, and joint implementation.

We think the cost-effectiveness issue is best reflected in the value of using economic instruments, which provide for flexible, cost-effective and innovative action by many decision makers.

In terms of comprehensiveness, it is most important that there be consideration and inclusion of all greenhouse gases, all sources, sinks and reservoirs, to take account of all factors that relate to this issue and enable cost-effective action.

Joint implementation relates to the potential benefits from global, not just national or regional action. We see the benefits of joint implementation, including the flow of funds from the developing countries to the South and technology cooperation between North and South.⁸⁷

Within the context of economic instruments, Erik Haites described how a carbon tax and a tradeable permits program could be used to assist in the transfer of resources to developing nations:

Both would provide incentives for fuel switching and adoption of energy efficiency measures and would also provide mechanisms whereby we could transfer resources to developing countries.

In the case of the carbon tax, we would have tax revenue to transfer to a Global Environmental Fund. In the case of tradeable permits, we could allow Canadian sources to comply with their emissions limits by acquiring permits from developing countries. In order to acquire those permits, they would obviously have to buy them, which represents a transfer of resources, but one that's accomplished without going through government accounts and a tax system.⁸⁸

There was general agreement that the potential exists for economic instruments to become an effective means of tackling many environmental problems. However, it was also recognized that our knowledge of economic instruments is as yet quite rudimentary and much work needs to be done to perfect these tools. In 1992 the federal government released a discussion paper entitled *Economic Instruments for Environmental Protection*. Some witnesses and one Committee member, however, expressed impatience with the slow pace of the federal government's efforts to build upon this document and design an effective economic instruments package.

Recommendation No. 20

The Committee recommends that the Government of Canada, in cooperation with all stakeholders (industry, environmental groups, provincial, territorial and municipal governments) (i) accelerate its program to develop an effective package of

⁸⁷ Ibid., Issue No. 48, 30 November 1992, p. 23-24.

⁸⁸ Ibid., p. 16.

economic instruments with which to combat greenhouse gas emissions, (ii) test these concepts in localized pilot projects, and (iii) share Canadian expertise on a global basis through the United Nations Commission on Sustainable Development.

Where should Canada invest its funds to get the greatest return in terms of energy savings and reduction in greenhouse gas emissions? Although a seemingly simple consideration, this question raises both practical and ethical issues. Should Canada concentrate on putting its own house in order first, and in so doing accrue the benefits of energy savings, increased competitive edge, and the prominence of world leadership? Or alternatively, should the money be directed to where it will have the most effect? For example, preservation and reforestation of the rain forest is known to be a more effective means of sequestering carbon than planting trees in Canada's boreal forest. Improvements to the operation of a Chinese coal-fired utility would likely yield far greater reductions in the emission of gaseous contaminants than would the same expenditure on a relatively modern utility in Canada.

Deborah Stine pointed out, that politically, this is a very difficult issue to resolve. It is definitely cheaper to assist a developing nation, as the gains to be realized in terms of reduction of greenhouse gas emissions are very large. However, you are paying for someone else's energy efficiency and it does not appear that you are reaping any of the benefits. Jim Leslie, on the other hand, revealed another side of the argument:

If the U.S. pursues an international policy and allows companies credits for offsets and Canada pushes ahead toward a domestic-reduction-only policy, our competitiveness will be at stake.⁸⁹

The Committee recognizes that there is probably no specific solution to this problem. However, just as witnesses before this Committee have recommended the use of a mixture of mitigative actions to combat global warming a blend of national and international actions may be in the best interest of all peoples. The Committee feels that it is essential that the Canadian government attempt to develop a balanced and integrated national-international policy for the reduction of greenhouse gas emissions, one that allows Canada to accrue benefits from mitigative actions, but one that also responds to international well-being.

Jim Leslie informed the Committee that the new United States energy bill contains a number of provisions that relate to climate change. In particular, the bill promotes the pursuit of voluntary reductions in greenhouse gas emissions.

In fact, the bill contains a provision for the documentation and voluntary reporting of greenhouse gas emission or mitigation actions, including the annual reductions in emissions and carbon fixation by any and all measures.⁹⁰

Jim Leslie asserts that a similar program is required in Canada. The Committee believes that the guarantee of retroactive greenhouse gas reduction credits would act as an inducement to proactive companies to begin their emission reduction programs now.

⁸⁹ Ibid., p. 27.

⁹⁰ Ibid., p. 24.

Recommendation No. 21

The Committee recommends that the Government of Canada institute a sunset program to (i) establish a greenhouse gas emission data base, (ii) receive emission reduction reports, (iii) assign value to emission reduction activities, and (iv) upon implementation of an appropriate economic instrument, retroactively credit industries for their reduction achievements.

One of the traditional barriers to increased market penetration of energy-efficient appliances, tools, pumps and furnaces is the initial higher capital cost. As pointed out by Deborah Stine:

Why should a landlord pay more for an efficient furnace when it is the tenant who pays the heating bill?⁹¹

The Committee recognizes that the recent passage of Bill C-41, *The Energy Efficiency Act* (an Act respecting the energy efficiency of energy-using products and the use of alternative energy sources) does provide for national minimum energy efficiency standards for a broad range of products and equipment. In addition, energy consumption labels alert the consumer to the long-term energy savings to be achieved from the purchase of energy-efficient products. However, this Act does nothing to assist consumers, and in particular financially-stressed consumers, to surmount the initial problem of higher capital cost. A financial policy is required to reduce the competitive advantage of energy-inefficient products. One possible resolution to this problem is the imposition of some form of financial penalty on energy-inefficient appliances. Although this action would remove the financial incentive to purchase appliances that are not energy efficient, it still does nothing to make energy-efficient products more accessible to the consumer with limited funds. The Committee sees this problem as one which should be addressed within the context of economic instruments, and challenges the government to deal with the problem of higher capital cost as it develops an effective economic instruments package.

The Committee notes that *The Energy Efficiency Act* does not mandate minimum energy efficiency standards for smaller products and equipment. For example, minimum energy efficiency standards are in effect for domestic refrigerators, and these appliances are affixed with an energy-consumption label. In contrast, minimum standards and energy-consumption labels do not exist for small bar refrigerators. The Committee believes that the Government of Canada should build upon *The Energy Efficiency Act* by continuously updating energy-efficiency standards and by extending energy-efficiency regulations and labelling to all energy-consuming products.

Recommendation No. 22

The Committee recommends that the Government of Canada (i) establish minimum energy-efficiency standards for all energy-consuming products and equipment, (ii) affix energy-consumption labels to all energy-consuming products and equipment, and (iii) continuously tighten the minimum standards as new technologies evolve. In addition, the Committee recommends that the *National Building Code* be reviewed and updated as new energy efficient building technologies evolve.

⁹¹ D. Stine, *Scientific Assessment and Approaches to Curtailing Global Warming*, Written presentation to the House of Commons Standing Committee on Environment, 30 November 1992, p. 6.

Canada has the dubious reputation of having the highest per capita emissions of carbon dioxide. This is in large part due to the enormous size of the country and the long distances that must be travelled by passengers and freight. It is no secret to Canadians that we must increase the efficiency of our modes of transport. However, according to Darrell Richards of Transport 2000 our transportation excesses are due largely to personal attitudes and government policy that encourages transportation by the most energy-intensive modes. Darrell Richards told the Committee:

... in order to reduce energy consumption and therefore contain the problem of global warming, it is necessary not to deal only with the technical aspects of transportation but perhaps more importantly to look at the people issues, that is, attitudes.⁹²

Prime among these attitudes is the North American preference for the family car, which offers personal freedom and usually quick and convenient transportation. This personal preference by the majority of the population is reflected in the political decision to spend a large share of tax revenues on highway maintenance and construction. Improvements to the road system seldom improve movement by bicycle or foot. Darrell Richards asserts that:

... we must cause a modal shift from the automobile to walking, cycling, urban transit, train and bus. And we must get at those cultural attitudes that are being translated into government policies that are preventing people from having equitable facilities for cycling, walking, transit, train and bus.⁹³

According to Darrell Richards the most important first step to enable this modal shift is to provide people a network. Just as there are highway networks to speed motorists from one destination to another, pedestrians, cyclists, and transit riders need their own safe, convenient, and largely dedicated networks. The first step toward this goal is the redirection of tax revenues and the development of a tax system more equitable to people who walk, bicycle or take transit to work. This need to redirect tax revenues was expressed by two other witnesses. Janine Ferretti identified the allocation of tax dollars to the government's new program to upgrade Canadian highways and airports as a form of subsidy that contributes to the deterioration of the environment.⁹⁴ Deborah Stine noted that strengthened federal and state support for mass transit was one of the specific energy conservation and efficiency recommendations presented by her study group to the United States government for consideration.⁹⁵ The Committee believes that the expansion and strengthening of urban transit infrastructures in major Canadian cities and towns will facilitate the modal shift of commuters to public transit and will assist Canada in achieving its greenhouse gas reduction goals.

As urban transportation is the responsibility of provincial governments, the federal government has always been reluctant to get involved, especially in the recent years of fiscal restraint. There is, however, no constitutional barrier to the federal government using its spending power to become directly involved in urban transit projects. We

⁹² *Minutes of Proceedings and Evidence of the Standing Committee on Environment*, Issue No. 48, 30 November 1992, p. 50.

⁹³ *Ibid.*, p. 51.

⁹⁴ *Ibid.*, Issue No. 46, 17 November 1992, p. 18.

⁹⁵ *Ibid.*, Issue No. 48, 30 November 1992, p. 21.

must ask whether it should be involved and whether it can afford to be. Certainly, it is acknowledged on all sides, that there must be substantial investment in urban transit from some source over the next few years in Canada.⁹⁶

The Committee recognizes that it is not only urban transportation issues that must be addressed when mitigating climate change effects, but the national public transportation system and infrastructure.

The Committee supports the Royal Commission on National Passenger Transportation in its recommendations designed to persuade users to reduce the amount of environmental damage they cause by ensuring that those who travel less will not pay the environmental remediation costs imposed by those who travel more. All of the modes should be subject to the same regulatory standards and changes.⁹⁷

Recommendation No. 23

The Committee recommends that the Government of Canada consider the advisability of using economic instruments, such as tolls and incentives, to encourage the use of public transportation systems and more environmentally-friendly modes of travel.

Darrell Richards suggested that free parking at work be considered a taxable benefit, while tax deductions should be extended for transit passes. The Committee agrees that the modal shift of people from cars to walking, bicycling and transit would indeed award Canada a tremendous reduction in greenhouse gas emissions. However, the Committee sees an equitable transportation tax system as a quagmire of largely unenforceable regulations. Using the examples offered by Darrell Richards, would a motorist living in an area not served by public transit have the same taxable benefit as a motorist living on a bus route? Would a tax deduction for transit passes not discriminate against more environmentally-friendly citizens who walk and cycle to work?

The problems facing the shift to more energy-efficient modes of transport are indeed largely ones of attitude; so pervasive are these attitudes that it is unlikely they could be quickly solved by any recommendations this Committee might suggest. Rather, the challenge can only be addressed by reforming our attitudes, and altering our thinking and traditional ways of doing things. The Committee feels that the long-term solutions to the problems addressed at Rio will only occur by the full integration of sustainable development objectives into all decision-making, in every sector of Canadian society.

⁹⁶ John Christopher, *Transportation in Canada: Current Issues*, Background Paper BP-324E, Research Branch, Library of Parliament, Ottawa, December 1992.

⁹⁷ Royal Commission on National Passenger Transportation, *Directions, The Final Report of the Royal Commission on National Passenger Transportation Summary*, 1992.

**CONVENTION ON BIOLOGICAL
DIVERSITY,**

JUNE 1992

CONVENTION ON BIOLOGICAL DIVERSITY

ARTICLE 1

The Contracting Parties,

Recognizing the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational, and aesthetic values of biological diversity and its components, and conscious also of the importance of biological diversity for evolution and for maintaining life supporting systems of the biosphere,

Affirming that the conservation of biological diversity is a common concern of humankind, and affirming that States have sovereign rights over their own biological resources,

CONVENTION ON BIOLOGICAL DIVERSITY

5 JUNE 1992

Considering that biological diversity is being significantly reduced by certain human activities,

Aware of the general lack of information and knowledge regarding biological diversity and the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to develop strategies necessary for its conservation,

Realizing that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source,

Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of scientific information should not be used as a reason for postponing or avoiding action to address such a threat,

Noting further that the fundamental requirement for the conservation of biological diversity is the in situ conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings,

Noting further that ex situ conservation, particularly in the country of origin, also has an important role to play,

Recognizing the close and traditional dependence of many indigenous and local communities upon biological resources and the need to ensure that conservation and sustainable use of biological diversity based on ecologically sound approaches and the availability of scientific and traditional knowledge, innovations and practices, and the contribution of local communities, and the need to ensure that the conservation and sustainable use of biological diversity based on ecologically sound approaches

Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women in decision-making and implementation for biological diversity conservation,

CONVENTION ON BIOLOGICAL DIVERSITY

Preamble

The Contracting Parties,

Conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components,

Conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere,

Affirming that the conservation of biological diversity is a common concern of humankind,

Reaffirming that States have sovereign rights over their own biological resources,

Reaffirming also that States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner,

Concerned that biological diversity is being significantly reduced by certain human activities,

Aware of the general lack of information and knowledge regarding biological diversity and of the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures,

Noting that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source,

Noting also that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat,

Noting further that the fundamental requirement for the conservation of biological diversity is the *in-situ* conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings,

Noting further that *ex-situ* measures, preferably in the country of origin, also have an important role to play,

Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components,

Recognizing also the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation,

Stressing the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components,

Acknowledging that the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity,

Acknowledging further that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies,

Noting in this regard the special conditions of the least developed countries and small island States,

Acknowledging that substantial investments are required to conserve biological diversity and that there is the expectation of a broad range of environmental, economic and social benefits from those investments,

Recognizing that economic and social development and poverty eradication are the first and overriding priorities of developing countries,

Aware that conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential,

Noting that, ultimately, the conservation and sustainable use of biological diversity will strengthen friendly relations among States and contribute to peace for humankind,

Desiring to enhance and complement existing international arrangements for the conservation of biological diversity and sustainable use of its components, and

Determined to conserve and sustainably use biological diversity for the benefit of present and future generations,

Have agreed as follows:

Article 1. Objectives

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Article 2. Use of Terms

For the purposes of this Convention:

"Biological diversity" means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

"Biological resources" includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

"Biotechnology" means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use.

"Country of origin of genetic resources" means the country which possesses those genetic resources in *in-situ* conditions.

"Country providing genetic resources" means the country supplying genetic resources collected from *in-situ* sources, including populations of both wild and domesticated species, or taken from *ex-situ* sources, which may or may not have originated in that country.

"Domesticated or cultivated species" means species in which the evolutionary process has been influenced by humans to meet their needs.

"Ecosystem" means a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

"Ex-situ conservation" means the conservation of components of biological diversity outside their natural habitats.

"Genetic material" means any material of plant, animal, microbial or other origin containing functional units of heredity.

"Genetic resources" means genetic material of actual or potential value.

"Habitat" means the place or type of site where an organism or population naturally occurs.

"In-situ conditions" means conditions where genetic resources exist within ecosystems and natural habitats, and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

"In-situ conservation" means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

"Protected area" means a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

"Regional economic integration organization" means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it.

"Sustainable use" means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

"Technology" includes biotechnology.

Article 3. Principle

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Article 4. Jurisdictional Scope

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

- (a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction; and
- (b) In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.

Article 5. Cooperation

Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

Article 6. General Measures for Conservation and Sustainable Use

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and
- (b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-

Article 7. Identification and Monitoring

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

- (a) Identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I;
- (b) Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use;
- (c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and
- (d) Maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a), (b) and (c) above.

Article 8. In-situ Conservation

Each Contracting Party shall, as far as possible and as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
- (d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- (e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
- (f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies;
- (g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;
- (h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;

(i) Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components;

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;

(k) Develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations;

(l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities; and

(m) Cooperate in providing financial and other support for *in-situ* conservation outlined in subparagraphs (a) to (l) above, particularly to developing countries.

Article 9. *Ex-situ* Conservation

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing *in-situ* measures:

(a) Adopt measures for the *ex-situ* conservation of components of biological diversity, preferably in the country of origin of such components;

(b) Establish and maintain facilities for *ex-situ* conservation of and research on plants, animals and micro-organisms, preferably in the country of origin of genetic resources;

(c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions;

(d) Regulate and manage collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species, except where special temporary *ex-situ* measures are required under subparagraph (c) above; and

(e) Cooperate in providing financial and other support for *ex-situ* conservation outlined in subparagraphs (a) to (d) above and in the establishment and maintenance of *ex-situ* conservation facilities in developing countries.

Article 10. *Sustainable Use of Components of Biological Diversity*

Each Contracting Party shall, as far as possible and as appropriate:

(a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;

(b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;

(c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

(d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and

(e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

Article 11. Incentive Measures

Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.

Article 12. Research and Training

The Contracting Parties, taking into account the special needs of developing countries, shall:

(a) Establish and maintain programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries;

(b) Promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries, *inter alia*, in accordance with decisions of the Conference of the Parties taken in consequence of recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice; and

(c) In keeping with the provisions of Articles 16, 18 and 20, promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources.

Article 13. Public Education and Awareness

The Contracting Parties shall:

(a) Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes; and

(b) Cooperate, as appropriate, with other States and international organizations in developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity.

Article 14. Impact Assessment and Minimizing Adverse Impacts

1. Each Contracting Party, as far as possible and as appropriate, shall:

(a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant

adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures;

(b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account;

(c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate;

(d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and

(e) Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the States or regional economic integration organizations concerned, to establish joint contingency plans.

2. The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter.

Article 15. Access to Genetic Resources

1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.

2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.

3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.

4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.

5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.

6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.

7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.

Article 16. Access to and Transfer of Technology

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.

2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.

3. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.

4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.

5. The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

Article 17. Exchange of Information

1. The Contracting Parties shall facilitate the exchange of information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries.
2. Such exchange of information shall include exchange of results of technical, scientific and socio-economic research, as well as information on training and surveying programmes, specialized knowledge, indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16, paragraph 1. It shall also, where feasible, include repatriation of information.

Article 18. Technical and Scientific Cooperation

1. The Contracting Parties shall promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions.
2. Each Contracting Party shall promote technical and scientific cooperation with other Contracting Parties, in particular developing countries, in implementing this Convention, *inter alia*, through the development and implementation of national policies. In promoting such cooperation, special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building.
3. The Conference of the Parties, at its first meeting, shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation.
4. The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.
5. The Contracting Parties shall, subject to mutual agreement, promote the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of this Convention.

Article 19. Handling of Biotechnology and Distribution of its Benefits

1. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties.
2. Each Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties. Such access shall be on mutually agreed terms.

3. The Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.

4. Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.

Article 20. Financial Resources

1. Each Contracting Party undertakes to provide, in accordance with its capabilities, financial support and incentives in respect of those national activities which are intended to achieve the objectives of this Convention, in accordance with its national plans, priorities and programmes.

2. The developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article 21, in accordance with policy, strategy, programme priorities and eligibility criteria and an indicative list of incremental costs established by the Conference of the Parties. Other Parties, including countries undergoing the process of transition to a market economy, may voluntarily assume the obligations of the developed country Parties. For the purpose of this Article, the Conference of the Parties, shall at its first meeting establish a list of developed country Parties and other Parties which voluntarily assume the obligations of the developed country Parties. The Conference of the Parties shall periodically review and if necessary amend the list. Contributions from other countries and sources on a voluntary basis would also be encouraged. The implementation of these commitments shall take into account the need for adequacy, predictability and timely flow of funds and the importance of burden-sharing among the contributing Parties included in the list.

3. The developed country Parties may also provide, and developing country Parties avail themselves of, financial resources related to the implementation of this Convention through bilateral, regional and other multilateral channels.

4. The extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.

5. The Parties shall take full account of the specific needs and special situation of least developed countries in their actions with regard to funding and transfer of technology.

6. The Contracting Parties shall also take into consideration the special conditions resulting from the dependence on, distribution and location of, biological diversity within developing country Parties, in particular small island States.

7. Consideration shall also be given to the special situation of developing countries, including those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous areas.

Article 21. Financial Mechanism

1. There shall be a mechanism for the provision of financial resources to developing country Parties for purposes of this Convention on a grant or concessional basis the essential elements of which are described in this Article. The mechanism shall function under the authority and guidance of, and be accountable to, the Conference of the Parties for purposes of this Convention. The operations of the mechanism shall be carried out by such institutional structure as may be decided upon by the Conference of the Parties at its first meeting. For purposes of this Convention, the Conference of the Parties shall determine the policy, strategy, programme priorities and eligibility criteria relating to the access to and utilization of such resources. The contributions shall be such as to take into account the need for predictability, adequacy and timely flow of funds referred to in Article 20 in accordance with the amount of resources needed to be decided periodically by the Conference of the Parties and the importance of burden-sharing among the contributing Parties included in the list referred to in Article 20, paragraph 2. Voluntary contributions may also be made by the developed country Parties and by other countries and sources. The mechanism shall operate within a democratic and transparent system of governance.

2. Pursuant to the objectives of this Convention, the Conference of the Parties shall at its first meeting determine the policy, strategy and programme priorities, as well as detailed criteria and guidelines for eligibility for access to and utilization of the financial resources including monitoring and evaluation on a regular basis of such utilization. The Conference of the Parties shall decide on the arrangements to give effect to paragraph 1 above after consultation with the institutional structure entrusted with the operation of the financial mechanism.

3. The Conference of the Parties shall review the effectiveness of the mechanism established under this Article, including the criteria and guidelines referred to in paragraph 2 above, not less than two years after the entry into force of this Convention and thereafter on a regular basis. Based on such review, it shall take appropriate action to improve the effectiveness of the mechanism if necessary.

4. The Contracting Parties shall consider strengthening existing financial institutions to provide financial resources for the conservation and sustainable use of biological diversity.

Article 22. Relationship with Other International Conventions

1. The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.

2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.

Article 23. Conference of the Parties

1. A Conference of the Parties is hereby established. The first meeting of the Conference of the Parties shall be convened by the Executive Director of the United Nations Environment Programme not later than one year after the entry into force of this Convention. Thereafter, ordinary meetings of the Conference of the Parties shall be held at regular intervals to be determined by the Conference at its first meeting.
2. Extraordinary meetings of the Conference of the Parties shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party, provided that, within six months of the request being communicated to them by the Secretariat, it is supported by at least one third of the Parties.
3. The Conference of the Parties shall by consensus agree upon and adopt rules of procedure for itself and for any subsidiary body it may establish, as well as financial rules governing the funding of the Secretariat. At each ordinary meeting, it shall adopt a budget for the financial period until the next ordinary meeting.
4. The Conference of the Parties shall keep under review the implementation of this Convention, and, for this purpose, shall:
 - (a) Establish the form and the intervals for transmitting the information to be submitted in accordance with Article 26 and consider such information as well as reports submitted by any subsidiary body;
 - (b) Review scientific, technical and technological advice on biological diversity provided in accordance with Article 25;
 - (c) Consider and adopt, as required, protocols in accordance with Article 28;
 - (d) Consider and adopt, as required, in accordance with Articles 29 and 30, amendments to this Convention and its annexes;
 - (e) Consider amendments to any protocol, as well as to any annexes thereto, and, if so decided, recommend their adoption to the parties to the protocol concerned;
 - (f) Consider and adopt, as required, in accordance with Article 30, additional annexes to this Convention;
 - (g) Establish such subsidiary bodies, particularly to provide scientific and technical advice, as are deemed necessary for the implementation of this Convention;
 - (h) Contact, through the Secretariat, the executive bodies of conventions dealing with matters covered by this Convention with a view to establishing appropriate forms of cooperation with them; and

(i) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention in the light of experience gained in its operation.

5. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not Party to this Convention, may be represented as observers at meetings of the Conference of the Parties. Any other body or agency, whether governmental or non-governmental, qualified in fields relating to conservation and sustainable use of biological diversity, which has informed the Secretariat of its wish to be represented as an observer at a meeting of the Conference of the Parties, may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.

Article 24. Secretariat

1. A secretariat is hereby established. Its functions shall be:

(a) To arrange for and service meetings of the Conference of the Parties provided for in Article 23;

(b) To perform the functions assigned to it by any protocol;

(c) To prepare reports on the execution of its functions under this Convention and present them to the Conference of the Parties;

(d) To coordinate with other relevant international bodies and, in particular to enter into such administrative and contractual arrangements as may be required for the effective discharge of its functions; and

(e) To perform such other functions as may be determined by the Conference of the Parties.

2. At its first ordinary meeting, the Conference of the Parties shall designate the secretariat from amongst those existing competent international organizations which have signified their willingness to carry out the secretariat functions under this Convention.

Article 25. Subsidiary Body on Scientific, Technical and Technological Advice

1. A subsidiary body for the provision of scientific, technical and technological advice is hereby established to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely advice relating to the implementation of this Convention. This body shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.

2. Under the authority of and in accordance with guidelines laid down by the Conference of the Parties, and upon its request, this body shall:

(a) Provide scientific and technical assessments of the status of biological diversity;

(b) Prepare scientific and technical assessments of the effects of types of measures taken in accordance with the provisions of this Convention;

(c) Identify innovative, efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity and advise on the ways and means of promoting development and/or transferring such technologies;

(d) Provide advice on scientific programmes and international cooperation in research and development related to conservation and sustainable use of biological diversity; and

(e) Respond to scientific, technical, technological and methodological questions that the Conference of the Parties and its subsidiary bodies may put to the body.

3. The functions, terms of reference, organization and operation of this body may be further elaborated by the Conference of the Parties.

Article 26. Reports

Each Contracting Party shall, at intervals to be determined by the Conference of the Parties, present to the Conference of the Parties, reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

Article 27. Settlement of Disputes

1. In the event of a dispute between Contracting Parties concerning the interpretation or application of this Convention, the parties concerned shall seek solution by negotiation.

2. If the parties concerned cannot reach agreement by negotiation, they may jointly seek the good offices of, or request mediation by, a third party.

3. When ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a State or regional economic integration organization may declare in writing to the Depositary that for a dispute not resolved in accordance with paragraph 1 or paragraph 2 above, it accepts one or both of the following means of dispute settlement as compulsory:

(a) Arbitration in accordance with the procedure laid down in Part 1 of Annex II;

(b) Submission of the dispute to the International Court of Justice.

4. If the parties to the dispute have not, in accordance with paragraph 3 above, accepted the same or any procedure, the dispute shall be submitted to conciliation in accordance with Part 2 of Annex II unless the parties otherwise agree.

5. The provisions of this Article shall apply with respect to any protocol except as otherwise provided in the protocol concerned.

Article 28. Adoption of Protocols

1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention.
2. Protocols shall be adopted at a meeting of the Conference of the Parties.
3. The text of any proposed protocol shall be communicated to the Contracting Parties by the Secretariat at least six months before such a meeting.

Article 29. Amendment of the Convention or Protocols

1. Amendments to this Convention may be proposed by any Contracting Party. Amendments to any protocol may be proposed by any Party to that protocol.
2. Amendments to this Convention shall be adopted at a meeting of the Conference of the Parties. Amendments to any protocol shall be adopted at a meeting of the Parties to the Protocol in question. The text of any proposed amendment to this Convention or to any protocol, except as may otherwise be provided in such protocol, shall be communicated to the Parties to the instrument in question by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate proposed amendments to the signatories to this Convention for information.
3. The Parties shall make every effort to reach agreement on any proposed amendment to this Convention or to any protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a two-third majority vote of the Parties to the instrument in question present and voting at the meeting, and shall be submitted by the Depositary to all Parties for ratification, acceptance or approval.
4. Ratification, acceptance or approval of amendments shall be notified to the Depositary in writing. Amendments adopted in accordance with paragraph 3 above shall enter into force among Parties having accepted them on the ninetieth day after the deposit of instruments of ratification, acceptance or approval by at least two thirds of the Contracting Parties to this Convention or of the Parties to the protocol concerned, except as may otherwise be provided in such protocol. Thereafter the amendments shall enter into force for any other Party on the ninetieth day after that Party deposits its instrument of ratification, acceptance or approval of the amendments.
5. For the purposes of this Article, "Parties present and voting" means Parties present and casting an affirmative or negative vote.

Article 30. Adoption and Amendment of Annexes

1. The annexes to this Convention or to any protocol shall form an integral part of the Convention or of such protocol, as the case may be, and, unless expressly provided otherwise, a reference to this Convention or its protocols constitutes at the same time a reference to any annexes thereto. Such annexes shall be restricted to procedural, scientific, technical and administrative matters.

2. Except as may be otherwise provided in any protocol with respect to its annexes, the following procedure shall apply to the proposal, adoption and entry into force of additional annexes to this Convention or of annexes to any protocol:

(a) Annexes to this Convention or to any protocol shall be proposed and adopted according to the procedure laid down in Article 29;

(b) Any Party that is unable to approve an additional annex to this Convention or an annex to any protocol to which it is Party shall so notify the Depositary, in writing, within one year from the date of the communication of the adoption by the Depositary. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time withdraw a previous declaration of objection and the annexes shall thereupon enter into force for that Party subject to subparagraph (c) below;

(c) On the expiry of one year from the date of the communication of the adoption by the Depositary, the annex shall enter into force for all Parties to this Convention or to any protocol concerned which have not submitted a notification in accordance with the provisions of subparagraph (b) above.

3. The proposal, adoption and entry into force of amendments to annexes to this Convention or to any protocol shall be subject to the same procedure as for the proposal, adoption and entry into force of annexes to the Convention or annexes to any protocol.

4. If an additional annex or an amendment to an annex is related to an amendment to this Convention or to any protocol, the additional annex or amendment shall not enter into force until such time as the amendment to the Convention or to the protocol concerned enters into force.

Article 31. Right to Vote

1. Except as provided for in paragraph 2 below, each Contracting Party to this Convention or to any protocol shall have one vote.

2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States which are Contracting Parties to this Convention or the relevant protocol. Such organizations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

Article 32. Relationship between this Convention and Its Protocols

1. A State or a regional economic integration organization may not become a Party to a protocol unless it is, or becomes at the same time, a Contracting Party to this Convention.

2. Decisions under any protocol shall be taken only by the Parties to the protocol concerned. Any Contracting Party that has not ratified, accepted or approved a protocol may participate as an observer in any meeting of the parties to that protocol.

Article 33. Signature

This Convention shall be open for signature at Rio de Janeiro by all States and any regional economic integration organization from 5 June 1992 until 14 June 1992, and at the United Nations Headquarters in New York from 15 June 1992 to 4 June 1993.

Article 34. Ratification, Acceptance or Approval

1. This Convention and any protocol shall be subject to ratification, acceptance or approval by States and by regional economic integration organizations. Instruments of ratification, acceptance or approval shall be deposited with the Depositary.
2. Any organization referred to in paragraph 1 above which becomes a Contracting Party to this Convention or any protocol without any of its member States being a Contracting Party shall be bound by all the obligations under the Convention or the protocol, as the case may be. In the case of such organizations, one or more of whose member States is a Contracting Party to this Convention or relevant protocol, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention or protocol, as the case may be. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention or relevant protocol concurrently.
3. In their instruments of ratification, acceptance or approval, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.

Article 35. Accession

1. This Convention and any protocol shall be open for accession by States and by regional economic integration organizations from the date on which the Convention or the protocol concerned is closed for signature. The instruments of accession shall be deposited with the Depositary.
2. In their instruments of accession, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.
3. The provisions of Article 34, paragraph 2, shall apply to regional economic integration organizations which accede to this Convention or any protocol.

Article 36. Entry Into Force

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the thirtieth instrument of ratification, acceptance, approval or accession.
2. Any protocol shall enter into force on the ninetieth day after the date of deposit of the number of instruments of ratification, acceptance, approval or accession, specified in that protocol, has been deposited.

3. For each Contracting Party which ratifies, accepts or approves this Convention or accedes thereto after the deposit of the thirtieth instrument of ratification, acceptance, approval or accession, it shall enter into force on the ninetieth day after the date of deposit by such Contracting Party of its instrument of ratification, acceptance, approval or accession.

4. Any protocol, except as otherwise provided in such protocol, shall enter into force for a Contracting Party that ratifies, accepts or approves that protocol or accedes thereto after its entry into force pursuant to paragraph 2 above, on the ninetieth day after the date on which that Contracting Party deposits its instrument of ratification, acceptance, approval or accession, or on the date on which this Convention enters into force for that Contracting Party, whichever shall be the later.

5. For the purposes of paragraphs 1 and 2 above, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.

Article 37. Reservations

No reservations may be made to this Convention.

Article 38. Withdrawals

1. At any time after two years from the date on which this Convention has entered into force for a Contracting Party, that Contracting Party may withdraw from the Convention by giving written notification to the Depositary.

2. Any such withdrawal shall take place upon expiry of one year after the date of its receipt by the Depositary, or on such later date as may be specified in the notification of the withdrawal.

3. Any Contracting Party which withdraws from this Convention shall be considered as also having withdrawn from any protocol to which it is party.

Article 39. Financial Interim Arrangements

Provided that it has been fully restructured in accordance with the requirements of Article 21, the Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development shall be the institutional structure referred to in Article 21 on an interim basis, for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties or until the Conference of the Parties decides which institutional structure will be designated in accordance with Article 21.

Article 40. Secretariat Interim Arrangements

The secretariat to be provided by the Executive Director of the United Nations Environment Programme shall be the secretariat referred to in Article 24, paragraph 2, on an interim basis for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties.

Article 41. Depositary

The Secretary-General of the United Nations shall assume the functions of Depositary of this Convention and any protocols.

Article 42. Authentic Texts

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have signed this Convention.

Done at Rio de Janeiro on this fifth day of June, one thousand nine hundred and ninety-two.

Annex I

IDENTIFICATION AND MONITORING

1. Ecosystems and habitats: containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural or scientific importance; or, which are representative, unique or associated with key evolutionary or other biological processes;
2. Species and communities which are: threatened; wild relatives of domesticated or cultivated species; of medicinal, agricultural or other economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and
3. Described genomes and genes of social, scientific or economic importance.

Annex II

Part 1

ARBITRATION

Article 1

The claimant party shall notify the secretariat that the parties are referring a dispute to arbitration pursuant to Article 27. The notification shall state the subject-matter of arbitration and include, in particular, the articles of the Convention or the protocol, the interpretation or application of which are at issue. If the parties do not agree on the subject matter of the dispute before the President of the tribunal is designated, the arbitral tribunal shall determine the subject matter. The secretariat shall forward the information thus received to all Contracting Parties to this Convention or to the protocol concerned.

Article 2

1. In disputes between two parties, the arbitral tribunal shall consist of three members. Each of the parties to the dispute shall appoint an arbitrator and the two arbitrators so appointed shall designate by common agreement the third arbitrator who shall be the President of the tribunal. The latter shall not be a national of one of the parties to the dispute, nor have his or her usual place of residence in the territory of one of these parties, nor be employed by any of them, nor have dealt with the case in any other capacity.

2. In disputes between more than two parties, parties in the same interest shall appoint one arbitrator jointly by agreement.

3. Any vacancy shall be filled in the manner prescribed for the initial appointment.

Article 3

1. If the President of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the Secretary-General of the United Nations shall, at the request of a party, designate the President within a further two-month period.

2. If one of the parties to the dispute does not appoint an arbitrator within two months of receipt of the request, the other party may inform the Secretary-General who shall make the designation within a further two-month period.

Article 4

The arbitral tribunal shall render its decisions in accordance with the provisions of this Convention, any protocols concerned, and international law.

Article 5

Unless the parties to the dispute otherwise agree, the arbitral tribunal shall determine its own rules of procedure.

Article 6

The arbitral tribunal may, at the request of one of the parties, recommend essential interim measures of protection.

Article 7

The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall:

- (a) Provide it with all relevant documents, information and facilities; and
- (b) Enable it, when necessary, to call witnesses or experts and receive their evidence.

Article 8

The parties and the arbitrators are under an obligation to protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

Article 9

Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the costs of the tribunal shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its costs, and shall furnish a final statement thereof to the parties.

Article 10

Any Contracting Party that has an interest of a legal nature in the subject-matter of the dispute which may be affected by the decision in the case, may intervene in the proceedings with the consent of the tribunal.

Article 11

The tribunal may hear and determine counterclaims arising directly out of the subject-matter of the dispute.

Article 12

Decisions both on procedure and substance of the arbitral tribunal shall be taken by a majority vote of its members.

Article 13

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and to make its award. Absence of a party or a failure of a party to defend its case shall not constitute a bar to the proceedings. Before rendering its final decision, the arbitral tribunal must satisfy itself that the claim is well founded in fact and law.

Article 14

The tribunal shall render its final decision within five months of the date on which it is fully constituted unless it finds it necessary to extend the time-limit for a period which should not exceed five more months.

Article 15

The final decision of the arbitral tribunal shall be confined to the subject-matter of the dispute and shall state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the final decision. Any member of the tribunal may attach a separate or dissenting opinion to the final decision.

Article 16

The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.

Article 17

Any controversy which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the final decision may be submitted by either party for decision to the arbitral tribunal which rendered it.

Part 2

CONCILIATION

Article 1

A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall, unless the parties otherwise agree, be composed of five members, two appointed by each Party concerned and a President chosen jointly by those members.

Article 2

In disputes between more than two parties, parties in the same interest shall appoint their members of the commission jointly by agreement. Where two or more parties have separate interests or there is a disagreement as to whether they are of the same interest, they shall appoint their members separately.

Article 3

If any appointments by the parties are not made within two months of the date of the request to create a conciliation commission, the Secretary-General of the United Nations shall, if asked to do so by the party that made the request, make those appointments within a further two-month period.

Article 4

If a President of the conciliation commission has not been chosen within two months of the last of the members of the commission being appointed, the Secretary-General of the United Nations shall, if asked to do so by a party, designate a President within a further two-month period.

Article 5

The conciliation commission shall take its decisions by majority vote of its members. It shall, unless the parties to the dispute otherwise agree, determine its own procedure. It shall render a proposal for resolution of the dispute, which the parties shall consider in good faith.

Article 6

A disagreement as to whether the conciliation commission has competence shall be decided by the commission.

**SIGNATORIES OF THE CONVENTION ON BIOLOGICAL DIVERSITY AT THE TIME OF
THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT
(RIO DE JANEIRO, 3-14 JUNE 1992)**

<i>Signatory</i>	<i>Date of signature</i>
1. Antigua and Barbuda	5 June 1992
2. Australia	5 June 1992
3. Bangladesh	5 June 1992
4. Belgium	5 June 1992
5. Brazil	5 June 1992
6. Finland	5 June 1992
7. India	5 June 1992
8. Indonesia	5 June 1992
9. Italy	5 June 1992
10. Liechtenstein	5 June 1992
11. Republic of Moldova	5 June 1992
12. Nauru	5 June 1992
13. Netherlands	5 June 1992
14. Pakistan	5 June 1992
15. Poland	5 June 1992
16. Romania	5 June 1992
17. Botswana	8 June 1992
18. Madagascar	8 June 1992
19. Sweden	8 June 1992
20. Tuvalu	8 June 1992
21. Yugoslavia	8 June 1992
22. Bahrain	9 June 1992
23. Ecuador	9 June 1992
24. Egypt	9 June 1992
25. Kazakhstan	9 June 1992
26. Kuwait	9 June 1992
27. Luxembourg	9 June 1992
28. Norway	9 June 1992
29. Sudan	9 June 1992
30. Uruguay	9 June 1992
31. Vanuatu	9 June 1992
32. Cote d'Ivoire	10 June 1992
33. Ethiopia	10 June 1992
34. Iceland	10 June 1992
35. Malawi	10 June 1992
36. Mauritius	10 June 1992
37. Oman	10 June 1992
38. Rwanda	10 June 1992
39. San Marino	10 June 1992
40. Seychelles	10 June 1992
41. Sri Lanka	10 June 1992
42. Belarus	11 June 1992
43. Bhutan	11 June 1992
44. Burundi	11 June 1992
45. Canada	11 June 1992
46. China	11 June 1992
47. Comoros	11 June 1992
48. Congo	11 June 1992
49. Croatia	11 June 1992
50. Democratic People's Republic of Korea	11 June 1992
51. Israel	11 June 1992
52. Jamaica	11 June 1992
53. Jordan	11 June 1992
54. Kenya	11 June 1992
55. Latvia	11 June 1992

<i>Signatory</i>	<i>Date of signature</i>
56. Lesotho	11 June 1992
57. Lithuania	11 June 1992
58. Monaco	11 June 1992
59. Myanmar	11 June 1992
60. Niger	11 June 1992
61. Qatar	11 June 1992
62. Trinidad and Tobago	11 June 1992
63. Turkey	11 June 1992
64. Ukraine	11 June 1992
65. United Arab Emirates	11 June 1992
66. Zaire	11 June 1992
67. Zambia	11 June 1992
68. Afghanistan	12 June 1992
69. Angola	12 June 1992
70. Argentina	12 June 1992
71. Azerbaijan	12 June 1992
72. Bahamas	12 June 1992
73. Barbados	12 June 1992
74. Bulgaria	12 June 1992
75. Burkina Faso	12 June 1992
76. Cape Verde	12 June 1992
77. Chad	12 June 1992
78. Colombia	12 June 1992
79. Cook Islands	12 June 1992
80. Cuba	12 June 1992
81. Cyprus	12 June 1992
82. Denmark	12 June 1992
83. Estonia	12 June 1992
84. Gabon	12 June 1992
85. Gambia	12 June 1992
86. Germany	12 June 1992
87. Ghana	12 June 1992
88. Greece	12 June 1992
89. Guinea	12 June 1992
90. Guinea-Bissau	12 June 1992
91. Lebanon	12 June 1992
92. Liberia	12 June 1992
93. Malaysia	12 June 1992
94. Maldives	12 June 1992
95. Malta	12 June 1992
96. Marshall Islands	12 June 1992
97. Mauritania	12 June 1992
98. Micronesia	12 June 1992
99. Mongolia	12 June 1992
100. Mozambique	12 June 1992
101. Namibia	12 June 1992
102. Nepal	12 June 1992
103. New Zealand	12 June 1992
104. Paraguay	12 June 1992
105. Peru	12 June 1992
106. Philippines	12 June 1992
107. Saint Kitts and Nevis	12 June 1992
108. Samoa	12 June 1992
109. Sao Tome and Principe	12 June 1992
110. Swaziland	12 June 1992

Signatory	Date of signature
111. Switzerland	12 June 1992
112. Thailand	12 June 1992
113. Togo	12 June 1992
114. Uganda	12 June 1992
115. United Kingdom of Great Britain and Northern Ireland	12 June 1992
116. United Republic of Tanzania	12 June 1992
117. Venezuela	12 June 1992
118. Yemen	12 June 1992
119. Zimbabwe	12 June 1992
120. Algeria	13 June 1992
121. Armenia	13 June 1992
122. Austria	13 June 1992
123. Belize	13 June 1992
124. Benin	13 June 1992
125. Bolivia	13 June 1992
126. Central African Republic	13 June 1992
127. Chile	13 June 1992
128. Costa Rica	13 June 1992
129. Djibouti	13 June 1992
130. Dominican Republic	13 June 1992
131. El Salvador	13 June 1992
132. European Economic Community	13 June 1992
133. France	13 June 1992
134. Guatemala	13 June 1992
135. Guyana	13 June 1992
136. Haiti	13 June 1992
137. Hungary	13 June 1992
138. Honduras	13 June 1992
139. Ireland	13 June 1992
140. Japan	13 June 1992
141. Mexico	13 June 1992
142. Morocco	13 June 1992
143. Nicaragua	13 June 1992
144. Nigeria	13 June 1992
145. Panama	13 June 1992
146. Papua New Guinea	13 June 1992
147. Portugal	13 June 1992
148. Republic of Korea	13 June 1992
149. Russian Federation	13 June 1992
150. Senegal	13 June 1992
151. Slovenia	13 June 1992
152. Solomon Islands	13 June 1992
153. Spain	13 June 1992
154. Suriname	13 June 1992
155. Tunisia	13 June 1992
156. Cameroon	14 June 1992
157. Iran	14 June 1992

باسم كندا:

代表加拿大:

In the name of Canada:

Au nom du Canada:

От имени Канады:

En nombre del Canadá:

Ravi Kulkarny

Premé Klemete

Canada

June 11, 1992

APPENDIX B

RATIFICATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

I,
BRIAN MULRONEY,

Je, soussigné,
BRIAN MULRONEY,

Prime Minister of Canada,

Premier ministre du Canada,

do hereby certify that the
Government of Canada ratifies
the Convention on Biological
Diversity, opened for signature
at Rio de Janeiro on
June 5, 1992.

certifie par les présentes que
le gouvernement du Canada ratifie
la Convention sur la diversité
biologique, ouverte à la signature
à Rio de Janeiro le 5 juin 1992.

IN WITNESS WHEREOF,

I have signed and sealed this
Instrument of Ratification.

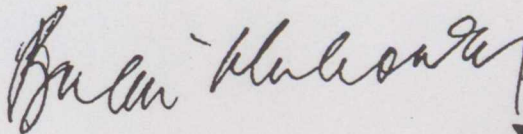
EN FOI DE QUOI,

j'ai apposé ma signature et mon
sceau au présent Instrument de
ratification.

DONE at Delta, B.C., this
4th day of December, 1992.

FAIT à Delta, C.-B.,
ce 4^e jour de décembre 1992.

Le Premier ministre,



Prime Minister





Distr.
GENERAL

A/C.2/37/14 (Part II) Annex I
13 May 1992

ORIGINAL: ENGLISH

INTERGOVERNMENTAL NEGOTIATING COMMITTEE
FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE
This volume, 2000
New York, 30 April 1992

UNITED NATIONS
FRAMEWORK CONVENTION
ON
CLIMATE CHANGE

REPORT OF THE INTERGOVERNMENTAL NEGOTIATING COMMITTEE
FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE ON THE
WORK OF THE SECOND PART OF ITS FIFTH SESSION, HELD
AT NEW YORK FROM 29 APRIL TO 9 MAY 1992

The report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the second part of its fifth session will be issued as document A/C.2/37/14 (Part II). This addendum contains the text of the United Nations Framework Convention on Climate Change, as agreed upon and adopted by the Committee on 9 May 1992, in annex I. Resolutions and decisions on agenda arrangements adopted by the Committee on 5 May 1992, is contained in annex II.



General Assembly

Distr.
GENERAL

A/AC.237/18 (Part II)/Add.1
15 May 1992

ORIGINAL: ENGLISH

**INTERGOVERNMENTAL NEGOTIATING COMMITTEE
FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE**
Fifth session, second part
New York, 30 April - 9 May 1992

**REPORT OF THE INTERGOVERNMENTAL NEGOTIATING COMMITTEE
FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE ON THE
WORK OF THE SECOND PART OF ITS FIFTH SESSION, HELD
AT NEW YORK FROM 30 APRIL TO 9 MAY 1992**

Addendum

The report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the second part of its fifth session will be issued as document A/AC.237/18 (Part II). This addendum contains the text of the United Nations Framework Convention on Climate Change, as agreed upon and adopted by the Committee on 9 May 1992, in annex I. Resolution INC/1992/1 on interim arrangements, adopted by the Committee on 9 May 1992, is contained in annex II.

ANNEX I TO THE REPORT OF THE COMMITTEE

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The Parties to this Convention,

Acknowledging that change in the Earth's climate and its adverse effects are a common concern of humankind,

Concerned that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, that these increases enhance the natural greenhouse effect, and that this will result on average in an additional warming of the Earth's surface and atmosphere and may adversely affect natural ecosystems and humankind,

Noting that the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs,

Aware of the role and importance in terrestrial and marine ecosystems of sinks and reservoirs of greenhouse gases,

Noting that there are many uncertainties in predictions of climate change, particularly with regard to the timing, magnitude and regional patterns thereof,

Acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions,

Recalling the pertinent provisions of the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972,

Recalling also that States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction,

Reaffirming the principle of sovereignty of States in international cooperation to address climate change,

Recognizing that States should enact effective environmental legislation, that environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply, and that standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries,

Recalling the provisions of General Assembly resolution 44/228 of 22 December 1989 on the United Nations Conference on Environment and Development, and resolutions 43/53 of 6 December 1988, 44/207 of 22 December 1989, 45/212 of 21 December 1990 and 46/169 of 19 December 1991 on protection of global climate for present and future generations of mankind,

Recalling also the provisions of General Assembly resolution 44/206 of 22 December 1989 on the possible adverse effects of sea level rise on islands and coastal areas, particularly low-lying coastal areas and the pertinent provisions of General Assembly resolution 44/172 of 19 December 1989 on the implementation of the Plan of Action to Combat Desertification,

Recalling further the Vienna Convention for the Protection of the Ozone Layer, 1985, and the Montreal Protocol on Substances that Deplete the Ozone Layer, 1987, as adjusted and amended on 29 June 1990,

Noting the Ministerial Declaration of the Second World Climate Conference adopted on 7 November 1990,

Conscious of the valuable analytical work being conducted by many States on climate change and of the important contributions of the World Meteorological Organization, the United Nations Environment Programme and other organs, organizations and bodies of the United Nations system, as well as other international and intergovernmental bodies, to the exchange of results of scientific research and the coordination of research,

Recognizing that steps required to understand and address climate change will be environmentally, socially and economically most effective if they are based on relevant scientific, technical and economic considerations and continually re-evaluated in the light of new findings in these areas,

Recognizing that various actions to address climate change can be justified economically in their own right and can also help in solving other environmental problems,

Recognizing also the need for developed countries to take immediate action in a flexible manner on the basis of clear priorities, as a first step towards comprehensive response strategies at the global, national and, where agreed, regional levels that take into account all greenhouse gases, with due consideration of their relative contributions to the enhancement of the greenhouse effect,

Recognizing further that low-lying and other small island countries, countries with low-lying coastal, arid and semi-arid areas or areas liable to floods, drought and desertification, and developing countries with fragile mountainous ecosystems are particularly vulnerable to the adverse effects of climate change,

Recognizing the special difficulties of those countries, especially developing countries, whose economies are particularly dependent on fossil fuel production, use and exportation, as a consequence of action taken on limiting greenhouse gas emissions,

Affirming that responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty,

Recognizing that all countries, especially developing countries, need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow taking into account the possibilities for achieving greater energy efficiency and for controlling greenhouse gas emissions in general, including through the application of new technologies on terms which make such an application economically and socially beneficial,

Determined to protect the climate system for present and future generations,

Have agreed as follows:

ARTICLE 1

DEFINITIONS •

For the purposes of this Convention:

1. "Adverse effects of climate change" means changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare.
2. "Climate change" means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.
3. "Climate system" means the totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions.
4. "Emissions" means the release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time.
5. "Greenhouse gases" means those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.
6. "Regional economic integration organization" means an organization constituted by sovereign States of a given region which has competence in respect of matters governed by this Convention or its protocols and has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to the instruments concerned.

* Titles of articles are included solely to assist the reader.

7. "Reservoir" means a component or components of the climate system where a greenhouse gas or a precursor of a greenhouse gas is stored.
8. "Sink" means any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere.
9. "Source" means any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere.

ARTICLE 2

OBJECTIVE

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

ARTICLE 3

PRINCIPLES

In their actions to achieve the objective of the Convention and to implement its provisions, the Parties shall be guided, inter alia, by the following:

1. The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.
2. The specific needs and special circumstances of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change, and of those Parties, especially developing country Parties, that would have to bear a disproportionate or abnormal burden under the Convention, should be given full consideration.

3. The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties.

4. The Parties have a right to, and should, promote sustainable development. Policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change.

5. The Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change. Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.

ARTICLE 4

COMMITMENTS

1. All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:
 - (a) Develop, periodically update, publish and make available to the Conference of the Parties, in accordance with Article 12, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, using comparable methodologies to be agreed upon by the Conference of the Parties;
 - (b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;

- (c) Promote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol in all relevant sectors, including the energy, transport, industry, agriculture, forestry and waste management sectors;
- (d) Promote sustainable management, and promote and cooperate in the conservation and enhancement, as appropriate, of sinks and reservoirs of all greenhouse gases not controlled by the Montreal Protocol, including biomass, forests and oceans as well as other terrestrial, coastal and marine ecosystems;
- (e) Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods;
- (f) Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change;
- (g) Promote and cooperate in scientific, technological, technical, socio-economic and other research, systematic observation and development of data archives related to the climate system and intended to further the understanding and to reduce or eliminate the remaining uncertainties regarding the causes, effects, magnitude and timing of climate change and the economic and social consequences of various response strategies;
- (h) Promote and cooperate in the full, open and prompt exchange of relevant scientific, technological, technical, socio-economic and legal information related to the climate system and climate change, and to the economic and social consequences of various response strategies;
- (i) Promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process, including that of non-governmental organizations; and
- (j) Communicate to the Conference of the Parties information related to implementation, in accordance with Article 12.

2. The developed country Parties and other Parties included in annex I commit themselves specifically as provided for in the following:

- (a) Each of these Parties shall adopt national ^{1/} policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs. These policies and measures will demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification, and taking into account the differences in these Parties' starting points and approaches, economic structures and resource bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective. These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention and, in particular, that of this subparagraph;
- (b) In order to promote progress to this end, each of these Parties shall communicate, within six months of the entry into force of the Convention for it and periodically thereafter, and in accordance with Article 12, detailed information on its policies and measures referred to in subparagraph (a) above, as well as on its resulting projected anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol for the period referred to in subparagraph (a), with the aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol. This information will be reviewed by the Conference of the Parties, at its first session and periodically thereafter, in accordance with Article 7;
- (c) Calculations of emissions by sources and removals by sinks of greenhouse gases for the purposes of subparagraph (b) above should take into account the best available scientific knowledge, including of the effective capacity of sinks and the respective contributions of such gases to climate change. The Conference of the Parties shall consider and agree on methodologies for these calculations at its first session and review them regularly thereafter;

^{1/} This includes policies and measures adopted by regional economic integration organizations.

- (d) The Conference of the Parties shall, at its first session, review the adequacy of subparagraphs (a) and (b) above. Such review shall be carried out in the light of the best available scientific information and assessment on climate change and its impacts, as well as relevant technical, social and economic information. Based on this review, the Conference of the Parties shall take appropriate action, which may include the adoption of amendments to the commitments in subparagraphs (a) and (b) above. The Conference of the Parties, at its first session, shall also take decisions regarding criteria for joint implementation as indicated in subparagraph (a) above. A second review of subparagraphs (a) and (b) shall take place not later than 31 December 1998, and thereafter at regular intervals determined by the Conference of the Parties, until the objective of the Convention is met;
- (e) Each of these Parties shall :
- (i) coordinate as appropriate with other such Parties, relevant economic and administrative instruments developed to achieve the objective of the Convention; and
 - (ii) identify and periodically review its own policies and practices which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol than would otherwise occur;
- (f) The Conference of the Parties shall review, not later than 31 December 1998, available information with a view to taking decisions regarding such amendments to the lists in annexes I and II as may be appropriate, with the approval of the Party concerned;
- (g) Any Party not included in annex I may, in its instrument of ratification, acceptance, approval or accession, or at any time thereafter, notify the Depository that it intends to be bound by subparagraphs (a) and (b) above. The Depository shall inform the other signatories and Parties of any such notification.

3. The developed country Parties and other developed Parties included in annex II shall provide new and additional financial resources to meet the agreed full costs incurred by developing country Parties in complying with their obligations under Article 12, paragraph 1. They shall also provide such financial resources, including for the transfer of technology, needed by the developing country Parties to meet the agreed full incremental costs of implementing measures that are covered by paragraph 1 of this Article and that are agreed between a developing country Party and the international entity or entities referred to in Article 11, in accordance with that Article. The implementation of these commitments shall take into account the need for adequacy and predictability in the flow of funds and the importance of appropriate burden sharing among the developed country Parties.

4. The developed country Parties and other developed Parties included in annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change in meeting costs of adaptation to those adverse effects.

5. The developed country Parties and other developed Parties included in annex II shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention. In this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties. Other Parties and organizations in a position to do so may also assist in facilitating the transfer of such technologies.

6. In the implementation of their commitments under paragraph 2 above, a certain degree of flexibility shall be allowed by the Conference of the Parties to the Parties included in annex I undergoing the process of transition to a market economy, in order to enhance the ability of these Parties to address climate change, including with regard to the historical level of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol chosen as a reference.

7. The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.

8. In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on:

- (a) Small island countries;
- (b) Countries with low-lying coastal areas;
- (c) Countries with arid and semi-arid areas, forested areas and areas liable to forest decay;
- (d) Countries with areas prone to natural disasters;
- (e) Countries with areas liable to drought and desertification;
- (f) Countries with areas of high urban atmospheric pollution;
- (g) Countries with areas with fragile ecosystems, including mountainous ecosystems;
- (h) Countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products; and
- (i) Land-locked and transit countries.

Further, the Conference of the Parties may take actions, as appropriate, with respect to this paragraph.

9. The Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology.

10. The Parties shall, in accordance with Article 10, take into consideration in the implementation of the commitments of the Convention the situation of Parties, particularly developing country Parties, with economies that are vulnerable to the adverse effects of the implementation of measures to respond to climate change. This applies notably to Parties with economies that are highly dependent on income generated from the production, processing and export, and/or consumption of fossil fuels and associated energy-intensive products and/or the use of fossil fuels for which such Parties have serious difficulties in switching to alternatives.

ARTICLE 5

RESEARCH AND SYSTEMATIC OBSERVATION

In carrying out their commitments under Article 4, paragraph 1(g), the Parties shall:

- (a) Support and further develop, as appropriate, international and intergovernmental programmes and networks or organizations aimed at defining, conducting, assessing and financing research, data collection and systematic observation, taking into account the need to minimize duplication of effort;
- (b) Support international and intergovernmental efforts to strengthen systematic observation and national scientific and technical research capacities and capabilities, particularly in developing countries, and to promote access to, and the exchange of, data and analyses thereof obtained from areas beyond national jurisdiction; and
- (c) Take into account the particular concerns and needs of developing countries and cooperate in improving their endogenous capacities and capabilities to participate in the efforts referred to in subparagraphs (a) and (b) above.

ARTICLE 6

EDUCATION, TRAINING AND PUBLIC AWARENESS

In carrying out their commitments under Article 4, paragraph 1(i), the Parties shall:

- (a) Promote and facilitate at the national and, as appropriate, subregional and regional levels, and in accordance with national laws and regulations, and within their respective capacities:
 - (i) the development and implementation of educational and public awareness programmes on climate change and its effects;
 - (ii) public access to information on climate change and its effects;
 - (iii) public participation in addressing climate change and its effects and developing adequate responses; and
 - (iv) training of scientific, technical and managerial personnel.
- (b) Cooperate in and promote, at the international level, and, where appropriate, using existing bodies:
 - (i) the development and exchange of educational and public awareness material on climate change and its effects; and
 - (ii) the development and implementation of education and training programmes, including the strengthening of national institutions and the exchange or secondment of personnel to train experts in this field, in particular for developing countries.

ARTICLE 7

CONFERENCE OF THE PARTIES

1. A Conference of the Parties is hereby established.
2. The Conference of the Parties, as the supreme body of this Convention, shall keep under regular review the implementation of the Convention and any related legal instruments that the Conference of the Parties may adopt, and shall make, within its mandate, the decisions necessary to promote the effective implementation of the Convention. To this end, it shall:

- (a) Periodically examine the obligations of the Parties and the institutional arrangements under the Convention, in the light of the objective of the Convention, the experience gained in its implementation and the evolution of scientific and technological knowledge;
- (b) Promote and facilitate the exchange of information on measures adopted by the Parties to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention;
- (c) Facilitate, at the request of two or more Parties, the coordination of measures adopted by them to address climate change and its effects, taking into account the differing circumstances, responsibilities and capabilities of the Parties and their respective commitments under the Convention.
- (d) Promote and guide, in accordance with the objective and provisions of the Convention, the development and periodic refinement of comparable methodologies, to be agreed on by the Conference of the Parties, *inter alia*, for preparing inventories of greenhouse gas emissions by sources and removals by sinks, and for evaluating the effectiveness of measures to limit the emissions and enhance the removals of these gases;
- (e) Assess, on the basis of all information made available to it in accordance with the provisions of the Convention, the implementation of the Convention by the Parties, the overall effects of the measures taken pursuant to the Convention, in particular environmental, economic and social effects as well as their cumulative impacts and the extent to which progress towards the objective of the Convention is being achieved;
- (f) Consider and adopt regular reports on the implementation of the Convention and ensure their publication;
- (g) Make recommendations on any matters necessary for the implementation of the Convention;
- (h) Seek to mobilize financial resources in accordance with Article 4, paragraphs 3, 4 and 5, and Article 11;
- (i) Establish such subsidiary bodies as are deemed necessary for the implementation of the Convention;
- (j) Review reports submitted by its subsidiary bodies and provide guidance to them;
- (k) Agree upon and adopt, by consensus, rules of procedure and financial rules for itself and for any subsidiary bodies;
- (l) Seek and utilize, where appropriate, the services and cooperation of, and information provided by, competent international organizations and intergovernmental and non-governmental bodies; and
- (m) Exercise such other functions as are required for the achievement of the objective of the Convention as well as all other functions assigned to it under the Convention.

3. The Conference of the Parties shall, at its first session, adopt its own rules of procedure as well as those of the subsidiary bodies established by the Convention, which shall include decision-making procedures for matters not already covered by decision-making procedures stipulated in the Convention. Such procedures may include specified majorities required for the adoption of particular decisions.

4. The first session of the Conference of the Parties shall be convened by the interim secretariat referred to in Article 21 and shall take place not later than one year after the date of entry into force of the Convention. Thereafter, ordinary sessions of the Conference of the Parties shall be held every year unless otherwise decided by the Conference of the Parties.

5. Extraordinary sessions of the Conference of the Parties shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party, provided that, within six months of the request being communicated to the Parties by the secretariat, it is supported by at least one-third of the Parties.

6. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State member thereof or observers thereto not Party to the Convention, may be represented at sessions of the Conference of the Parties as observers. Any body or agency, whether national or international, governmental or non-governmental, which is qualified in matters covered by the Convention, and which has informed the secretariat of its wish to be represented at a session of the Conference of the Parties as an observer, may be so admitted unless at least one-third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.

ARTICLE 8

SECRETARIAT

1. A secretariat is hereby established.

2. The functions of the secretariat shall be:

- (a) To make arrangements for sessions of the Conference of the Parties and its subsidiary bodies established under the Convention and to provide them with services as required;
- (b) To compile and transmit reports submitted to it;
- (c) To facilitate assistance to the Parties, particularly developing country Parties, on request, in the compilation and communication of information required in accordance with the provisions of the Convention;
- (d) To prepare reports on its activities and present them to the Conference of the Parties;

- (e) To ensure the necessary coordination with the secretariats of other relevant international bodies;
 - (f) To enter, under the overall guidance of the Conference of the Parties, into such administrative and contractual arrangements as may be required for the effective discharge of its functions; and
 - (g) To perform the other secretariat functions specified in the Convention and in any of its protocols and such other functions as may be determined by the Conference of the Parties.
3. The Conference of the Parties, at its first session, shall designate a permanent secretariat and make arrangements for its functioning.

ARTICLE 9

SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE

1. A subsidiary body for scientific and technological advice is hereby established to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely information and advice on scientific and technological matters relating to the Convention. This body shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.
2. Under the guidance of the Conference of the Parties, and drawing upon existing competent international bodies, this body shall:
 - (a) Provide assessments of the state of scientific knowledge relating to climate change and its effects;
 - (b) Prepare scientific assessments on the effects of measures taken in the implementation of the Convention;
 - (c) Identify innovative, efficient and state-of-the-art technologies and know-how and advise on the ways and means of promoting development and/or transferring such technologies;
 - (d) Provide advice on scientific programmes, international cooperation in research and development related to climate change, as well as on ways and means of supporting endogenous capacity-building in developing countries; and
 - (e) Respond to scientific, technological and methodological questions that the Conference of the Parties and its subsidiary bodies may put to the body.

3. The functions and terms of reference of this body may be further elaborated by the Conference of the Parties.

ARTICLE 10

SUBSIDIARY BODY FOR IMPLEMENTATION

1. A subsidiary body for implementation is hereby established to assist the Conference of the Parties in the assessment and review of the effective implementation of the Convention. This body shall be open to participation by all Parties and comprise government representatives who are experts on matters related to climate change. It shall report regularly to the Conference of the Parties on all aspects of its work.
2. Under the guidance of the Conference of the Parties, this body shall:
 - (a) Consider the information communicated in accordance with Article 12, paragraph 1, to assess the overall aggregated effect of the steps taken by the Parties in the light of the latest scientific assessments concerning climate change;
 - (b) Consider the information communicated in accordance with Article 12, paragraph 2, in order to assist the Conference of the Parties in carrying out the reviews required by Article 4, paragraph 2(d); and
 - (c) Assist the Conference of the Parties, as appropriate, in the preparation and implementation of its decisions.

ARTICLE 11

FINANCIAL MECHANISM

1. A mechanism for the provision of financial resources on a grant or concessional basis, including for the transfer of technology, is hereby defined. It shall function under the guidance of and be accountable to the Conference of the Parties, which shall decide on its policies, programme priorities and eligibility criteria related to this Convention. Its operation shall be entrusted to one or more existing international entities.
2. The financial mechanism shall have an equitable and balanced representation of all Parties within a transparent system of governance.

3. The Conference of the Parties and the entity or entities entrusted with the operation of the financial mechanism shall agree upon arrangements to give effect to the above paragraphs, which shall include the following:

- (a) Modalities to ensure that the funded projects to address climate change are in conformity with the policies, programme priorities and eligibility criteria established by the Conference of the Parties;
- (b) Modalities by which a particular funding decision may be reconsidered in light of these policies, programme priorities and eligibility criteria;
- (c) Provision by the entity or entities of regular reports to the Conference of the Parties on its funding operations, which is consistent with the requirement for accountability set out in paragraph 1 above; and
- (d) Determination in a predictable and identifiable manner of the amount of funding necessary and available for the implementation of this Convention and the conditions under which that amount shall be periodically reviewed.

4. The Conference of the Parties shall make arrangements to implement the above mentioned provisions at its first session, reviewing and taking into account the interim arrangements referred to in Article 21, paragraph 3, and shall decide whether these interim arrangements shall be maintained. Within four years thereafter, the Conference of the Parties shall review the financial mechanism and take appropriate measures.

5. The developed country Parties may also provide and developing country Parties avail themselves of, financial resources related to the implementation of the Convention through bilateral, regional and other multilateral channels.

ARTICLE 12

COMMUNICATION OF INFORMATION RELATED TO IMPLEMENTATION

1. In accordance with Article 4, paragraph 1, each Party shall communicate to the Conference of the Parties, through the secretariat, the following elements of information:

- (a) A national inventory of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, to the extent its capacities permit, using comparable methodologies to be promoted and agreed upon by the Conference of the Parties;
- (b) A general description of steps taken or envisaged by the Party to implement the Convention; and

- (c) Any other information that the Party considers relevant to the achievement of the objective of the Convention and suitable for inclusion in its communication, including, if feasible, material relevant for calculations of global emission trends.
2. Each developed country Party and each other Party included in annex I shall incorporate in its communication the following elements of information:
- (a) A detailed description of the policies and measures that it has adopted to implement its commitment under Article 4, paragraphs 2(a) and 2(b); and
 - (b) A specific estimate of the effects that the policies and measures referred to in subparagraph (a) immediately above will have on anthropogenic emissions by its sources and removals by its sinks of greenhouse gases during the period referred to in Article 4, paragraph 2(a).
3. In addition, each developed country Party and each other developed Party included in annex II shall incorporate details of measures taken in accordance with Article 4, paragraphs 3, 4 and 5.
4. Developing country Parties may, on a voluntary basis, propose projects for financing, including specific technologies, materials, equipment, techniques or practices that would be needed to implement such projects, along with, if possible, an estimate of all incremental costs, of the reductions of emissions and increments of removals of greenhouse gases, as well as an estimate of the consequent benefits.
5. Each developed country Party and each other Party included in annex I shall make its initial communication within six months of the entry into force of the Convention for that Party. Each Party not so listed shall make its initial communication within three years of the entry into force of the Convention for that Party, or of the availability of financial resources in accordance with Article 4, paragraph 3. Parties that are least developed countries may make their initial communication at their discretion. The frequency of subsequent communications by all Parties shall be determined by the Conference of the Parties, taking into account the differentiated timetable set by this paragraph.
6. Information communicated by Parties under this Article shall be transmitted by the secretariat as soon as possible to the Conference of the Parties and to any subsidiary bodies concerned. If necessary, the procedures for the communication of information may be further considered by the Conference of the Parties.
7. From its first session, the Conference of the Parties shall arrange for the provision to developing country Parties of technical and financial support, on request, in compiling and communicating information under this Article, as well as in identifying the technical and financial needs associated with proposed projects and response measures under Article 4. Such support may be provided by other Parties, by competent international organizations and by the secretariat, as appropriate.
8. Any group of Parties may, subject to guidelines adopted by the Conference of the Parties, and to prior notification to the Conference of the Parties, make a joint communication in fulfilment of their obligations under this Article, provided that such a communication includes information on the fulfilment by each of these Parties of its individual obligations under the Convention.

9. Information received by the secretariat that is designated by a Party as confidential, in accordance with criteria to be established by the Conference of the Parties, shall be aggregated by the secretariat to protect its confidentiality before being made available to any of the bodies involved in the communication and review of information.

10. Subject to paragraph 9 above, and without prejudice to the ability of any Party to make public its communication at any time, the secretariat shall make communications by Parties under this Article publicly available at the time they are submitted to the Conference of the Parties.

ARTICLE 13

RESOLUTION OF QUESTIONS REGARDING IMPLEMENTATION

The Conference of the Parties shall, at its first session, consider the establishment of a multilateral consultative process, available to Parties on their request, for the resolution of questions regarding the implementation of the Convention.

ARTICLE 14

SETTLEMENT OF DISPUTES

1. In the event of a dispute between any two or more Parties concerning the interpretation or application of the Convention, the Parties concerned shall seek a settlement of the dispute through negotiation or any other peaceful means of their own choice.

2. When ratifying, accepting, approving or acceding to the Convention, or at any time thereafter, a Party which is not a regional economic integration organization may declare in a written instrument submitted to the Depositary that, in respect of any dispute concerning the interpretation or application of the Convention, it recognizes as compulsory ipso facto and without special agreement, in relation to any Party accepting the same obligation:

- (a) Submission of the dispute to the International Court of Justice, and/or
- (b) Arbitration in accordance with procedures to be adopted by the Conference of the Parties as soon as practicable, in an annex on arbitration.

A Party which is a regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance with the procedures referred to in subparagraph (b) above.

3. A declaration made under paragraph 2 above shall remain in force until it expires in accordance with its terms or until three months after written notice of its revocation has been deposited with the Depository.
4. A new declaration, a notice of revocation or the expiry of a declaration shall not in any way affect proceedings pending before the International Court of Justice or the arbitral tribunal, unless the parties to the dispute otherwise agree.
5. Subject to the operation of paragraph 2 above, if after twelve months following notification by one Party to another that a dispute exists between them, the Parties concerned have not been able to settle their dispute through the means mentioned in paragraph 1 above, the dispute shall be submitted, at the request of any of the parties to the dispute, to conciliation.
6. A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall be composed of an equal number of members appointed by each party concerned and a chairman chosen jointly by the members appointed by each party. The commission shall render a recommendatory award, which the parties shall consider in good faith.
7. Additional procedures relating to conciliation shall be adopted by the Conference of the Parties, as soon as practicable, in an annex on conciliation.
8. The provisions of this Article shall apply to any related legal instrument which the Conference of the Parties may adopt, unless the instrument provides otherwise.

ARTICLE 15

AMENDMENTS TO THE CONVENTION

1. Any Party may propose amendments to the Convention.
2. Amendments to the Convention shall be adopted at an ordinary session of the Conference of the Parties. The text of any proposed amendment to the Convention shall be communicated to the Parties by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate proposed amendments to the signatories to the Convention and, for information, to the Depository.
3. — The Parties shall make every effort to reach agreement on any proposed amendment to the Convention by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting. The adopted amendment shall be communicated by the secretariat to the Depository; who shall circulate it to all Parties for their acceptance.

4. Instruments of acceptance in respect of an amendment shall be deposited with the Depositary. An amendment adopted in accordance with paragraph 3 above shall enter into force for those Parties having accepted it on the ninetieth day after the date of receipt by the Depositary of an instrument of acceptance by at least three-fourths of the Parties to the Convention.
5. The amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits with the Depositary its instrument of acceptance of the said amendment.
6. For the purposes of this Article, "Parties present and voting" means Parties present and casting an affirmative or negative vote.

ARTICLE 16

ADOPTION AND AMENDMENT OF ANNEXES TO THE CONVENTION

1. Annexes to the Convention shall form an integral part thereof and, unless otherwise expressly provided, a reference to the Convention constitutes at the same time a reference to any annexes thereto. Without prejudice to the provisions of Article 14, paragraphs 2(b) and 7, such annexes shall be restricted to lists, forms and any other material of a descriptive nature that is of a scientific, technical, procedural or administrative character.
2. Annexes to the Convention shall be proposed and adopted in accordance with the procedure set forth in Article 15, paragraphs 2, 3, and 4.
3. An annex that has been adopted in accordance with paragraph 2 above shall enter into force for all Parties to the Convention six months after the date of the communication by the Depositary to such Parties of the adoption of the annex, except for those Parties that have notified the Depositary, in writing, within that period of their non-acceptance of the annex. The annex shall enter into force for Parties which withdraw their notification of non-acceptance on the ninetieth day after the date on which withdrawal of such notification has been received by the Depositary.
4. The proposal, adoption and entry into force of amendments to annexes to the Convention shall be subject to the same procedure as that for the proposal, adoption and entry into force of annexes to the Convention in accordance with paragraphs 2 and 3 above.
5. If the adoption of an annex or an amendment to an annex involves an amendment to the Convention, that annex or amendment to an annex shall not enter into force until such time as the amendment to the Convention enters into force.

ARTICLE 17

PROTOCOLS

1. The Conference of the Parties may, at any ordinary session, adopt protocols to the Convention.
2. The text of any proposed protocol shall be communicated to the Parties by the secretariat at least six months before such a session.
3. The requirements for the entry into force of any protocol shall be established by that instrument.
4. Only Parties to the Convention may be Parties to a protocol.
5. Decisions under any protocol shall be taken only by the Parties to the protocol concerned.

ARTICLE 18

RIGHT TO VOTE

1. Each Party to the Convention shall have one vote, except as provided for in paragraph 2 below.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States that are Parties to the Convention. Such an organization shall not exercise its right to vote if any of its member States exercises its right, and vice versa.

ARTICLE 19

DEPOSITARY

The Secretary-General of the United Nations shall be the Depositary of the Convention and of protocols adopted in accordance with Article 17.

ARTICLE 20

SIGNATURE

This Convention shall be open for signature by States Members of the United Nations or of any of its specialized agencies or that are Parties to the Statute of the International Court of Justice and by regional economic integration organizations at Rio de Janeiro, during the United Nations Conference on Environment and Development, and thereafter at United Nations Headquarters in New York from 20 June 1992 to 19 June 1993.

ARTICLE 21

INTERIM ARRANGEMENTS

1. The secretariat functions referred to in Article 8 will be carried out on an interim basis by the secretariat established by the General Assembly of the United Nations in its resolution 45/212 of 21 December 1990, until the completion of the first session of the Conference of the Parties.
2. The head of the interim secretariat referred to in paragraph 1 above will cooperate closely with the Intergovernmental Panel on Climate Change to ensure that the Panel can respond to the need for objective scientific and technical advice. Other relevant scientific bodies could also be consulted.
3. The Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development shall be the international entity entrusted with the operation of the financial mechanism referred to in Article 11 on an interim basis. In this connection, the Global Environment Facility should be appropriately restructured and its membership made universal to enable it to fulfil the requirements of Article 11.

ARTICLE 22

RATIFICATION, ACCEPTANCE, APPROVAL OR ACCESSION

1. The Convention shall be subject to ratification, acceptance, approval or accession by States and by regional economic integration organizations. It shall be open for accession from the day after the date on which the Convention is closed for signature. Instruments of ratification, acceptance, approval or accession shall be deposited with the Depository.
2. Any regional economic integration organization which becomes a Party to the Convention without any of its member States being a Party shall be bound by all the obligations under the Convention. In the case of such organizations, one or more of whose member States is a Party to the Convention, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention concurrently.
3. In their instruments of ratification, acceptance, approval or accession, regional economic integration organizations shall declare the extent of their competence with respect to the matters governed by the Convention. These organizations shall also inform the Depository, who shall in turn inform the Parties, of any substantial modification in the extent of their competence.

ARTICLE 23

ENTRY INTO FORCE

1. The Convention shall enter into force on the ninetieth day after the date of deposit of the fiftieth instrument of ratification, acceptance, approval or accession.
2. For each State or regional economic integration organization that ratifies, accepts or approves the Convention or accedes thereto after the deposit of the fiftieth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the date of deposit by such State or regional economic integration organization of its instrument of ratification, acceptance, approval or accession.
3. For the purposes of paragraphs 1 and 2 above, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by States members of the organization.

ARTICLE 24

RESERVATIONS

No reservations may be made to the Convention.

ARTICLE 25

WITHDRAWAL

1. At any time after three years from the date on which the Convention has entered into force for a Party, that Party may withdraw from the Convention by giving written notification to the Depository.
2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depository of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.
3. Any Party that withdraws from the Convention shall be considered as also having withdrawn from any protocol to which it is a Party.

ARTICLE 26

AUTHENTIC TEXTS

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have signed this Convention.

DONE at New York this ninth day of May one thousand nine hundred and ninety-two.

ANNEX I

Australia
Austria
Belarus^{*/}
Belgium
Bulgaria^{*/}
Canada
Czechoslovakia^{*/}
Denmark
European Community
Estonia^{*/}
Finland
France
Germany
Greece
Hungary^{*/}
Iceland
Ireland
Italy
Japan
Latvia^{*/}
Lithuania^{*/}
Luxembourg
Netherlands
New Zealand
Norway
Poland^{*/}
Portugal
Romania^{*/}
Russian Federation^{*/}
Spain
Sweden
Switzerland
Turkey
Ukraine^{*/}
United Kingdom of Great
Britain and Northern Ireland
United States of America

^{*/} Countries that are undergoing the process of transition to a market economy.

ANNEX II TO THE ANNEX II THE COMMITTEE

- Australia
- Austria
- Belgium
- Canada
- Denmark
- European Community
- Finland
- France
- Germany
- Greece
- Iceland
- Ireland
- Italy
- Japan
- Luxembourg
- Netherlands
- New Zealand
- Norway
- Portugal
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom of Great Britain and Northern Ireland
- United States of America

ANNEX II TO THE REPORT OF THE COMMITTEE

RESOLUTION ADOPTED BY THE INTERGOVERNMENTAL NEGOTIATING COMMITTEE
FOR A FRAMEWORK CONVENTION ON CLIMATE CHANGE

INC/1992/1. Interim arrangements

The Intergovernmental Negotiating Committee for a Framework Convention on Climate Change,

Having agreed upon and adopted the text of the United Nations Framework Convention on Climate Change,

Considering that preparations are required for an early and effective operation of the Convention once it has entered into force,

Further considering that, in the interim arrangements, involvement in the negotiations of all participants in the Committee is essential,

Recalling General Assembly resolutions 45/212 of 21 December 1990 and 46/169 of 19 December 1991,

1. Calls upon all States and regional economic integration organizations entitled to do so to sign the Convention during the United Nations Conference on Environment and Development in Rio de Janeiro or at the earliest subsequent opportunity and thereafter to ratify, accept, approve or accede to the Convention;
2. Requests the Secretary-General to make the necessary arrangements for convening a session of the Committee, in accordance with paragraph 4 of General Assembly resolution 46/169, to prepare for the first session of the Conference of the Parties as specified in the Convention;
3. Requests further the Secretary-General to make recommendations to the General Assembly at its forty-seventh session regarding arrangements for further sessions of the Committee until the entry into force of the Convention;
4. Invites the Secretary-General to include in his report to the General Assembly, as required in paragraphs 4 and 9 of resolution 46/169, proposals that would enable the secretariat established under resolution 45/212 to continue its activities until the designation of the secretariat of the Convention by the Conference of the Parties;

5. Appeals to Governments and organizations to make voluntary contributions to the extrabudgetary funds established under General Assembly resolution 45/212 in order to contribute to the costs of the interim arrangements, and to ensure full and effective participation of developing countries, in particular the least developed countries and small island developing countries, as well as developing countries stricken by drought and desertification, in all the sessions of the Committee;

6. Invites States and regional economic integration organizations entitled to sign the Convention to communicate as soon as feasible to the head of the secretariat information regarding measures consistent with the provisions of the Convention pending its entry into force.

9 May 1992

UNITED NATIONS CONVENTION ON CLIMATE CHANGE,
CONCLUDED AT NEW YORK ON 9 MAY 1992

ANNEX D

RATIFICATION OF THE U.N. FRAMEWORK ON CLIMATE CHANGE

باسم كندا:

代表加拿大:

In the name of Canada:

Au nom du Canada:

От имени Канады:

En nombre del Canadá:

Iman Khakouzi
Premier ministre
Canada

le 12 Juin, 1992

APPENDIX D

RATIFICATION OF THE U.N. FRAMEWORK ON CLIMATE CHANGE

I,
BRIAN MULRONEY,

Je, soussigné,
BRIAN MULRONEY,

Prime Minister of Canada,

Premier ministre du Canada,

do hereby certify that the
Government of Canada ratifies
the United Nations Framework
Convention on Climate Change,
concluded at New York on
May 9th, 1992.

certifie par les présentes que
le gouvernement du Canada ratifie
la Convention-cadre des Nations
Unies sur les changements
climatiques, conclue à New York
le 9 mai 1992.

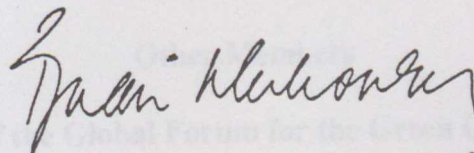
IN WITNESS WHEREOF,
I have signed and sealed this
Instrument of Ratification.

EN FOI DE QUOI,
j'ai apposé ma signature et mon
sceau au présent Instrument de
ratification.

DONE at Delta, B.C., this
4th day of December, 1992.

FAIT à Delta, C.-B.,
ce 4^e jour de décembre 1992.

Le Premier ministre,



Prime Minister



APPENDIX E

Members of Parliament who Attended the United Nations Conference on Environment and Development

Rio de Janeiro – 3–14 June 1992

From the Ministry

The Right Honourable Brian Mulroney, Prime Minister
The Honourable John Crosbie, Minister of Fisheries and Oceans and
Minister for the Atlantic Canada Opportunities Agency
The Honourable Jean Charest, Minister of the Environment

From The Standing Committee on Environment

The Honourable David MacDonald, – Rosedale – P.C.
The Honourable Charles Caccia, – Davenport – Lib.
Marlene Catterall – Ottawa West – Lib.
Yvon Côté – Richmond–Wolfe – P.C.
Jim Fulton – Skeena – N.D.P.
Paul Martin – LaSalle–Emard – Lib.
Brian O’Kurley – Elk Island – P.C.

From The Standing Committee on Forestry and Fisheries

Michel Champagne – Champlain – P.C.
Stan Darling – Parry Sound – Muskoka – P.C.
Lynn Hunter – Saanich – Gulf Islands – N.D.P.
Charles A. Langlois – Manicouagan – P.C.
Peter McCreath – South Shore – P.C.
The Honourable Roger Simmons – Burin – St. George’s – Lib.
Christine Stewart – Northumberland – Lib.

Other Members

On behalf of the Global Forum for the Green Core Proposal

Patrick Boyer – Etobicoke – Lakeshore – P.C.

On behalf of Global Parliamentarians on Habitat

Robert Wenman – Fraser Valley West – P.C.

APPENDIX F

List of Witnesses

Organizations and Individuals	Date	Issue
Environment Canada: The Honourable Jean Charest, P.C., M.P., Minister of Environment; Wendy Parkes, Manager, Operations, Biodiversity Convention Office, Corporate Policy Group; Doug Russell, Director, International Policy, Atmospheric Environment Service.	November 16, 1992	45
Canadian International Development Agency: Nicole Senécal, Vice-président, Policy Branch.	November 17, 1992	46
Pollution Probe Foundation: Janine Ferretti, Executive Director.	November 17, 1992	46
Canadian Council for International Cooperation: Tim Draimin, Director of Politics.	November 17, 1992	46
International Institute for Sustainable Development: Art Hanson, President and Chief Executive Officer.	November 17, 1992	46
Canadian Museum of Nature: Don McAllister, Senior Biodiversity Advisor, Canadian Centre for Biodiversity.	November 23, 1992	47
Environment Canada: John Herity, Director, Biodiversity Convention Office.	November 23, 1992	47

Organizations and Individuals	Date	Issue
Department of Environment and Public Safety, Province of Saskatchewan: Les Cooke, Deputy Minister.	November 23, 1992	47
National Round Table on the Environment and the Economy: Diane Griffin, Member, (Chair, Rural Renewal Task Force).	November 23, 1992	47
Sierra Legal Defence Fund: Stewart Elgie, Professor, Faculty of Law, University of Alberta; Elizabeth May, National Representative, Sierra Club of Canada;	November 23, 1992	47
Department of External Affairs and International Trade: Arthur Campeau, Ambassador for Environment and Sustainable Development Keith Christie, Director, Economic Planning Division, Policy Planning Staff.	November 23, 1992	47
The World Resources Institute (Washington, D.C.): Walter Reid, Vice-President.	November 23, 1992	47
The International Development Research Centre: Keith Bezanson, President; Anne Whyte, Director General, Environment and Natural Resources Division.	November 23, 1992	47
Environment Canada: Elizabeth Dowdeswell, Assistant Deputy Minister, Atmospheric Environment Service.	November 30, 1992	48

Organizations and Individuals	Date	Issue
Barakat-Chamberlin Inc.: Eric Haites, Principal.	November 30, 1992	48
The National Academy of Sciences (Washington, D.C.): Deborah Stine, Study Director, Panel on Policy Implications of Greenhouse Warming.	November 30, 1992	48
TransAlta Utilities: Jim Leslie, Senior Vice-President, Corporate Services.	November 30, 1992	48
The Canadian Trucking Association: Gilles Bélanger, President; John Sanderson, Vice-President, Corporate Development, CP Trucks.	November 30, 1992	
Transport 2000: Darrell Richards, President.	November 30, 1992	48
The Sierra Club of Canada: Louise Comeau, Coordinator, Green Energy Campaign.	November 30, 1992	48
The United Nations Development Program: Mahbub ul Haq Special Advisor to the Administrator	February 2, 1993	51

List of Submissions

Désirée McGraw
Former UNCED Youth Ambassador
United Nations Conference on
Environment and Development
Montreal, Que.

John McCullum
Past President
TRANSPORT 2000
Ottawa, Ont.

Roelof Idema
Biosystematics Illustrator
Turks & Caicos Link, Ltd.
Nepean, Ont.

George E. Ball
Chairman, Scientific Advisory Committee
Biological Survey of Canada
Terrestrial Arthropods
University of Alberta
Edmonton, Alberta

REQUEST FOR GOVERNMENT RESPONSE

The Committee requests that the Government provide a comprehensive response to this Report in accordance with Standing Order 109.

A copy of the relevant Minutes of Proceedings and Evidence of the Standing Committee on Environment (*Issues Nos. 45 to 62*) which includes this report is tabled.

Respectfully submitted,

DAVID MacDONALD, P.C., M.P.

