

ENVIRONMENTAL DIPLOMACY OF THE DEVELOPING  
COUNTRIES AT THE U. N. FROM STOCKHOLM  
TO RIO DE JANEIRO

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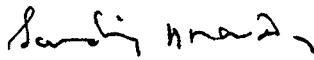
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CERTIFICATE

This is to certify that the dissertation entitled  
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submitted by Nilamani Sahoo in fulfilment of  
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the award of any other degree of this University or of any  
other University.

  
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## P R E F A C E

Awareness of the decisive importance and of the disturbing vulnerability of man's natural environment is bursting upon most alert and public spirited people throughout the world in recent years. Our planet is under siege, due to global warming, ozone layer depletion, acid rain, nuclear and chemical pollution, deforestation, desertification, loss of biological diversity, overpopulation, dumping of hazardous wastes and pollution of international commons. It is now fairly understood that mere economic growth is not enough in bringing welfare to the mankind. Unsustained growth has given rise to many problems and the paradox of growth versus environmental protection is getting more complicated. The balance of environment, economics and technology is the key issue that will need to be addressed for a new phase of development. Therefore, the achievement of sustained and equitable development remains the greatest challenge facing the human race.

Although environmental problems have a very long history - overuse of the natural resource base has in many cases caused empires and civilization to crumble - the concept of "environmental diplomacy" is rather new. It is now becoming an important concern to national governments and international agencies given the apparent intractable nature of such problems. Environmental problems can no longer be approached bilaterally or through the diplomacy of limited participation. The search for viable answers to them calls for a multilateral effort. The conduct of international environmental diplomacy represents

an attempt to resolve such transboundary/transnational environmental problems to the satisfaction of the governments concerned. The last two decades has seen quite extraordinary diplomatic activity in relation to environmental affairs.

Developed and developing countries were sharply divided on environmental issues. While developed countries were concerned with environmental pollution, ozone depletion, global warming, conservation of genetic and natural resources, etc., developing countries tended to dismiss environmental concern as the business of rich countries. What concerned them was poverty, and its effects, shelter, sanitation and industrial development. The international community has come to recognize the imminent threat to human survival posed by environmental degradation. But equally important, it has recognized that an adequate response to this threat must include complementary action to promote sustained pattern of growth, especially in developing countries.

This dissertation is an attempt to fill our perceived need for a reasonably comprehensive work which summarises the current state of environmental diplomacy of the developing countries. It is essentially an analysis of the worldwide movement for protection of the human environment, with emphasis on intergovernmental agreements and institutional arrangements in the United Nations, from (1972-1992), focussing the diplomatic strategy of the developing countries.



This dissertation examined the following hypotheses, (a) that, for developing countries environmental protection shall constitute an integral part of the development process and could not be considered in isolation from it, (b) that, developing countries shall strive for some mechanism from industrialized countries to cover free access, non-commercial and preferential basis of transfer of technology and financial resources for environmentally sound development, (c) that U.N. being global in orientation will play a significant role in relation to international environmental policy, (d) that, it will be difficult to tackle the cause of environment or development problems, without the commitment of developed countries, which holds all the important levers of world economic and political power.

This dissertation is based on narrative empirical method of analysis. Both primary and secondary sources are being used. The text of various reports of United Nations Environmental programme and United Nations Conference on Environment and Development form the primary sources. In secondary sources, books, articles from newspapers and journals are being used.

This dissertation has been divided into six chapters. Chapter one, present how environmental diplomacy emerged as a factor in international relations and a framework of international environmental cooperation between North and South countries. Apart from this, the chapter also discusses about the role of U.N. on international environmental policy. Chapter two

deals with the global environmental issues and its implications to the developing countries. Here an attempt is being made to discuss some of the specific global environmental issues. The relationship between environment and development and the concept of 'sustainable development' is being discussed with developing countries perspectives. Chapter three, provides an analysis of United Nations Conference on Human Environment, Stockholm 1972, the first international environmental conference. The negotiating strategy of the developing countries in this conference has also been discussed. Chapter four deals with the case of 'ozone layer depletion', perhaps the greatest transboundary environmental issue to bring about truly trans-national environmental diplomacy. This chapter comprehensively reviews the status of implementation and development of international arrangements, like Vienna Convention, Montreal Protocol and London revisions, on cooperation in protecting ozone layer depletion. How the consensus for international action was achieved between North and South clearly reflected in ozone negotiations. Chapter five, presents an extensive analysis of the United Nations Conference on Environment and Development (UNCED) Brazil, 1992, starting from the preparatory meeting to the final action plan. The developing countries negotiating strategy with developed countries on certain vital issues like, transfer of technology, financial aid, protection of biological diversity and tropical forest, climate change and the action plan of Agenda-21, has been comprehensively discussed. Chapter six, the concluding chapter, seeks to discover the

perhaps not so complicated underlying roots of the numerous and seemingly complex problems identified and described in the preceding chapters, in international environmental diplomacy. A critical analysis has been made from Stockholm to Rio conference on global environmental policy. For the effective implementation and prospects of environmental diplomacy few suggestions have been made, apart from the concluding remarks.

(Nilamani Sahoo)

New Delhi

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With all these help, the responsibility for any lapses and errors is mine alone; the views and interpretations of events are also personal.

  
(Nilamani Sahoo)

List of Abbreviations

CFC	Chloro Fluro Carbon
CSD	Commission on Sustainable Development
CT	Carbon Tetrachloride
ECE	Economic Commission for Europe (UN)
EC	European Community
EPA	U.S. Environmental Protection Agency
ECOSOC	Economic and Social Council (UN)
EIA	Environmental Impact Assessment
FAO	Food and Agricultural Organization
GESAMP	Group of Experts on the Scientific Aspects of Marine Pollution
GEF	Global Environmental Facility
GEMS	Global Environmental Monitoring System
HCFC	Hydro Chloro Fluro Carbon
HFC	Hydro Fluro Carbon
IPR	Intellectual Property Rights
IUCN	International Union for Conservation of Nature and Natural Resources
INFOTERRA	International Referral Service (UNEP)
IPCC	Intergovernmental Panel on Climate Change
MC	Methyl Chloroform
NASA	National Aeronautics and Space Administration (US)
NGOs	Non-governmental Organizations
OECD	Organization for Economic Cooperation and Development
ODA	Overseas Development Assistance
PREP COM	Preparation Committee (For U.N. Conference on Environment)

UNCHE	United Nations Conference on Human Environment
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
UV	Ultraviolet
WB	World Bank
WHO	World Health Organization (UN)
WMO	World Meteorological Organization
WCED	World Commission on Environment and Development
WWF	World Wildlife Fund

## Chapter 1

### INTRODUCTION

- Environmental Diplomacy; An Emerging Factor in International Relations
- The Concept of Conference/Multilateral Diplomacy - A Theoretical Framework
- International Environmental Problems; The Diplomatic Resolutions; The North-South Conflict-Cooperation Model
- Role of the U.N. on Environment

Global environment vision is "no longer a luxury for idealistic dreamers. It is an essential compass to guide our society. Politicians do say the most awful waffle. Yet no subject of diplomacy is more delicate than the environment, because none so intimately affects the way people live".

- John Major, Prime Minister,  
U.K., Times, London,  
12 August, 1991.



## Chapter I

### INTRODUCTION

#### A. Environmental Diplomacy: An Emerging Factor in International Relations

In the period following World War II, the international relations have undergone profound and complete transformation due to the information revolution, the development needs of newly independent nations and technical advances in nuclear energy and electronics. Since then, diplomacy was concentrated on questions of political and economic relations, i.e., question of development, foreign aid, decolonisation, racialism, arms control and disarmament, regional crises and above all the cold war politics, were the hectic diplomatic activities around the world. As the century closes, and the cold war is over, a third set of international problems - those relating to the health of the planet, i.e., "Environment", coming to fore, presenting new challenges to diplomacy. The environmental problems will test the ability of governments and their diplomats to organize themselves for new dimensions in foreign relations, and to negotiate agreements that require departures from the traditional nation-state orientations of diplomacy toward patterns of global management, still to be developed.<sup>1</sup>

The international environmental movement is the expression of a fundamental change in human perceptions of

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1 Benedick, R.E. (1991), Ozone Diplomacy - New Directions in safeguarding the planet, p. ix.

life on the earth. The state of the environment today is but an indicator of the crucial juncture at which mankind stands in its path of development, progress and prosperity.<sup>2</sup>

The relationship between modern man and his environment is a major and growing social problem. This relationship and the related problems of human population and war have become critical since mid-twentieth century. The very survival of man as a species depends upon intelligent and moral human action with respect to these problems. Unless rapid and effective action is taken to stop population growth, to reduce the threat of war and its costly burdens, and to prevent the further destruction of the planetary biosphere and its living organisms, the early degradation of human species is a certainty, and its untimely extinction is a probability.<sup>3</sup>

Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy and the continuing deterioration of the ecosystems on which we depend our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No

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2 Chris, C.P. (1983), *Environmental Crisis - An International View*, p. 18.

3 Caldwell, L.K. (1971), *Environment - A Challenge to Modern Society*, p. xi.

nation can achieve this without a global partnership for sustainable development.<sup>4</sup>

Over the course of this century, the relationship between the human world and the planet that sustains, has undergone a profound change. When the century began, neither human numbers nor technology had the power to radically alter the planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major unintended changes are occurring in the atmosphere in soils, in waters, among plants and animals, and in the relationship among all of these. The rate of change is outstripping the abilities of the scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions which evolved in a different, more fragmented world, to adopt and cope. It deeply worries many people who are seeking ways to place those concerns on the political agenda.<sup>5</sup>

An international environmental issue is a conceptual hybrid. The international aspect is political; its referents, including its scientific aspects are both cultural and physical. Its implications are often ecological and may be planetary. If there are physical boundaries to environmental

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4 Bramwell, A. (1989), *Ecology in the 20th Century*, p. 25.

5 *Our Common Future* (1987), World Commission on Environment and Development, p. 343.

issues, as there often are, they do not necessarily correspond to national boundaries but may be greater or lesser. Few environmental issues are global in a sense that people and nations are everywhere directly affected. But environmental problems commonly regarded as local, regional, or national may have international or even global ramifications. Many issues arise beyond the jurisdiction of any national government and are inherently international.<sup>6</sup>

✓ Global environmental change addresses the human ecological and public policy dimensions of the environmental processes that are threatening the sustainability of the life on the earth. The major environmental challenges are global warming and greenhouse effect; ozone layer depletion, acid rain, nuclear winter, chemical and technological pollution, toxic waste disposal, desertification, deforestation, loss of biological diversity, population explosion, marine pollution, air, water and soil pollution, noise pollution, environmental hazards - natural disasters and toxic and chemical pollution, and the pollution in global commons - outer space, oceans and Antarctica. The social aspects of the environmental pollution are human settlements, rapid urbanization, health degradation, poverty, illiteracy, unemployment, crime, violence etc. (some of the global environmental issues will be discussed in Chapter 2 in detail).

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6 Caldwell, L.K. (1991), International Environmental Policy: Emergence and Dimensions, pp. 12-13.

✓ The emergence of the environment as a focus for public policy is a consequence of historical developments that have converged in our time. This convergence of expanding knowledge, human populations, and technological capabilities is posing for modern society a challenge without precedence in human experience.<sup>7</sup> One of the manifestations of changes in public perception of the environment is the emergence and consolidation of "green politics" and "green parties" in several countries of the world.<sup>8</sup>

The need for environmental policy in the modern world is in large measure a consequence of human urge for growth and development and the means of obtaining them. In an infinite environment such ambition might seek realization indefinitely, but the earth provides no infinite environment for material growth. Many limitations and hazards of the natural world may be overcome through science and technology, but the geographical earth itself cannot be expanded. When humanity's exactions exceed the capacity of the earth to provide, a breakdown in the life-support systems follows, the quality of life is diminished, and civilization itself may jeopardized.<sup>9</sup>

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7 Caldwell, L.K. (1971), *Environment - A Challenge to Modern Society*, p. xiv.

8 Holdgate, M., Michael, D.F., Munn, R.E., Tolba, M.K., etc., ed. (1992), *The World Environment (1972 - 1992) Two decades of Challenges*, p. 662.

9 Anderson, Walt (1987), *Politics and Environment*, p. 21.

The last two decades brought into focus the importance of international cooperation, which may be regional, between groups of developing countries "South-South Linkages" or between developed and developing countries "North-South Linkages" or among developed countries, not only to solve world development problems but also to safeguard the environment for future generations.<sup>10</sup>

✓ The conduct of international environmental diplomacy represents an attempt to resolve trans-boundary/transnational environmental problem to the satisfaction of the governments concerned. The factors are much greater in both magnitude and complexity from any other trans-boundary problem which has gone before; they introduce a new breed of trans-boundary environmental problems and new challenges for environmental diplomacy. Diplomats and governments find this set of issues as difficult to manage and negotiate as any issue of peace and war. Because solutions to this problem of environment must be global, they will present an unprecedented challenge to concept of national sovereignty.<sup>11</sup> To resolve such conflicts of national and international interests in simultaneously using and preserving the world's environment on the basis of the holistic and ecological approach now generally demanded by scientists and environmentalists,

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10 Holdgate, M.W., Kassas, M., White, G.F. (1982), The World Environment (1972-1982) - A Report by UNEP, pp. xv - xvi.

11 Carroll, J.E., ed. (1988), International Environmental Diplomacy; The Management and Resolution of Transfrontier environmental problems, pp. 1-2.

international fora have to be provided within which the scientific, economic, social, political and legal issues can be debated and negotiated.<sup>12</sup>

✓ Today, however, an extensive and complex network of intergovernmental, non-governmental and scientific organizations addresses a broad range of international environmental problems. Treaties and other international agreements have been negotiated to such an extent that environmental protection is now recognized as a significant aspect of international law. So recent in this comprehensive international effort that it would be unrealistic to expect more than a beginning to have been made.<sup>13</sup> To keep options open for the future generation the present generation must begin now and begin together, nationally and internationally.

✓ This new awareness of the global character of the earth's problems does not make for easy diplomacy. Since solution to the environmental problems is closely linked to development, a matter of intense concern to governments of both developing and developed states, any necessary changes have to be brought about in a phased manner, which marks and delays the pain caused to the electorates of the states affected. Thus, governments continually seek to negotiate

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12 Patricia, B., "Environmental Diplomacy", in Barston R., ed., *International Relations Since 1945: Issues in the Making of the Modern World*, pp. 242-72.

13 Caldwell, L.K. (1991), *International Environmental Policy: Emergence and Dimensions*, p. 303.

compromises and to seek out the forum in which they can arrive at these, either within existing international organizations or through the creation of new ones.<sup>14</sup>

There was an increasing recognition that neither individual nation, nor the North or the South countries acting alone, could adequately protect the global environment. So multilateral/conference diplomacy assumed to play a critical role.

B. The Concept of Conference/Multilateral Diplomacy - A Theoretical Framework

Given the nature, magnitude and complexities of the environmental problems, conference/multilateral diplomacy assumed a significant role. So it is quite necessary to know the meaning, structure and the objectives of conference diplomacy. By looking into this theoretical framework, we could analyse, how in different United Nations conference on 'Environmental Issues' were negotiated.

It is an outstanding feature of the present era that, as the number of sovereign states has constantly increased over a period of 45 years, the new technological environment has made the world progressively grow smaller. Both these phenomena have profoundly affected the scope and depth of international relations. Today's world presents numerous problems which confront several or all states and which by their nature, require common or joint solutions. There is a category of important questions which can no longer be usually

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14 Dobson, A. (1990), Green Political Thought - An Introduction, pp. 221-30.



approached bilaterally or through the diplomacy of limited participation. The search for viable answers to them calls for a multilateral effort.<sup>15</sup>

Consequently, an enormously broad range of topics is being dealt with and acted upon in the forums of multilateral negotiation. The often complex and transboundary nature of the action required technological progress as well as an evolution in the shared values of international community, create a framework of interdependence and underscore the need for cooperation between states. Whether, it can be called plurilateral diplomacy, multilateral diplomacy, parliamentary diplomacy or conference diplomacy, the growth of multilateralism has led to the emergence of new diplomatic styles and methods in the quest for achieving common objectives. These are observed both at occasional and non-institutionalized international conferences and in the permanent and structurally more defined international organizations.<sup>16</sup> Most nations have already accepted or grasped, diplomacy by conference as a fact of life and taken the necessary material measures to participate in it.

#### Conference Diplomacy Defined

Diplomacy has been defined as the management of

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15 Kaufmann, J. (1988), *Conference Diplomacy: An Introductory Analysis*, p. vii.

16 *Ibid.*, pp. viii-ix.

international relations by negotiations; the method by which those relations are adjusted and managed by ambassadors and envoys, the business or the art of the diplomatist.<sup>17</sup>

Conference diplomacy can be defined "as that of management of relations between governments and of relations between governments and international organizations that takes place in international conference. This definition covers not only relations between governments, but also those between governments and the organizations of which they are members. This latter type of relations has introduced new elements into diplomacy. The term conference is used in its most general sense, discarding the old distinction between a conference and a congress, which latter term was used for gatherings at which sovereigns or their principal ministers were present."<sup>18</sup>

The United Nations which now provides a fabulous forum for most of the diplomatic activity, occupies a pivotal place in the study of conference diplomacy. The U.N. in general, has greatly encouraged multilateral diplomacy, in addition to bilateral and regional diplomacy. The U.N., to put in a nutshell, has carried conference diplomacy a step further.<sup>19</sup>

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17 Oxford Advanced Learners Dictionary, p. 338,

18 Kaufmann, J. (1988), *Conference Diplomacy: An Introductory Analysis*, p. 1.

19 Regala, R. (1969), *The Trends in Modern Diplomatic Practice*, p. 83.

In most intergovernmental conferences four main actors can be detected;

- the delegation, as representatives of their governments,
- the secretariat and its executive head;
- the presiding officer(s);
- the various groups of governments.

Sometimes others become actors in conference diplomacy, for example, non-governmental organizations or journalists.<sup>20</sup>

(See Annexure 1 for the organizational setting of conference diplomacy).

#### Objectives of Conferences

There are various ways to distinguish international conferences. Some of these, based on specific organizational or human characteristics. The broad division of the intergovernmental conferences are, deliberative, legislative or informational and sometimes two or three of these at the same time.

A deliberate conference concentrated on general discussions and exchanges of points of view on certain topics. A legislative conference endeavours to make recommendations to governments or make decisions which are binding upon governments. An informational conference has as its main purpose the information exchange on specific questions.<sup>21</sup>

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20 Kaufmann, J. (1988), Conference Diplomacy, p. 2.

21 Ibid., pp. 6-11.

However, there are certain common objectives of conference diplomacy:

- To serve as forum for general discussion of broad or specific issues;
- To make non-binding recommendations to governments or international organizations;
- To make decision binding upon governments;
- To make decision giving guidance or instructions to the secretariat of an intergovernmental organization or on the way in which a programme finalized by governments should be administered;
- To negotiate and draft a treaty or other formal international instruments;
- To provide for the international informational exchange;
- To provide for the pledging of voluntary contributions to international programmes;
- To review progress under an agreement or a treaty concluded earlier.<sup>22</sup>

Decision-Making Process in  
Conference Diplomacy

Some conferences are not intended to arrive at decisions. They do not go beyond general debate or the exchange of information. Most intergovernmental conferences, however, end with some sort of conclusions or decisions. The procedure by which decisions are taken and the form in which they

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22 Ibid., p. 12.

are cast differs from conference to conference, depending on the objectives of the conferences, its rules of procedure and the traditional practices which may have been formed over the years.

There are some general procedures through which decisions took place. They are;

- covers the normal procedure for arriving at decisions on the basis of a draft resolution which is voted upon;
- discusses some important aspects of voting;
- the process of arriving at a decision without voting, i.e. by some form of consensus.<sup>23</sup>

A format of preparation, discussion and adaptation of a resolution in conference diplomacy is given in Annexure 2.

#### Merits of Conference Diplomacy

- It gives to small states a voice and an equal vote with great powers;
- It gives the sponsoring state or states a chance to play a dominant role;
- It helps in developing significant partnership of effort, joint thinking and combined activities that are important to the members or the community;
- It is an 'open diplomacy' and takes on the character of a 'public spectacle' and encourages posturing playing to the audience and engaging in propagandizing;
- It enables the members to settle outstanding issues;

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23 Ibid., p. 13.

- It helps members to seek out informal contacts and engage in informal causing and lobbying and thereby to speed the communication and decision process.<sup>24</sup>

Diplomacy by conference is unquestionably a technique of diplomacy. The crisis of 'multilateralism' is today a widely commented upon phenomenon. The questioning of the volume of multilateral institutions and multilateral diplomacy is indeed intense and it cannot be denied that several organizations in the U.N. systems are facing a profound crisis. Multilateralism is a permanent feature of the contemporary international diplomacy and a feature destined to assume increasing importance in the future. The growing number of international problems that can only be solved through multilateral means permits no other conclusion.<sup>25</sup>

Thus, diplomacy by conference required utmost caution, wisdom and flexibility on the part of the diplomats to achieve and bargain something out of a conference table.

C. International Environmental Problems: The Diplomatic Resolutions; The North-South Conflict and Cooperation Model

International relations as a science is concerned with observation and analysis, and with theorizing in order to explain and to predict. As such it does not seek solutions to problems of peace and security; but in so far as observation,

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24 Feltham, R.C. (1988), Diplomatic Handbook, pp. 25-31.

25 James, D.D. (1987), On Diplomacy, p. 20.

analysis and theorizing succeed in exposing and explaining the operation and process of relation between two states, and of the world system as a whole.<sup>26</sup>

The participants in the process of international politics have some specific common interest and hence there is a scope for cooperation of some kind and other. Other than war, there are certain situations where cooperation is necessary. This is known as 'bargaining situation', in which conflict and cooperation are both found. The actors in international politics often involve themselves in a process of negotiations with a view to making some adjustment in their interrelationship. In view of the fact that international negotiation have come to assume great importance in order to ensure a successful means of the peaceful resolution of international conflict, the bargaining theory have much relevance.<sup>27</sup>

The concept of bargaining has its utility only in regard to those situation in which the conflict is not pure, which means that even though the parties have a conflict among themselves on certain specific issue, they at least have one common interest. This is a situation of competitive cooperation bargaining.<sup>28</sup>

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26 Wright, Q. (1955), *The Study of International Relations*, p. 10.

27 Frankel, J. (1969), *International Politics: Conflict and Harmony*, pp. 20-22.

28 Mahendra Kumar (1984), *Theoretical Aspects of International Politics*, pp. 179-185.

✓ Nations cooperate when convinced that their interest will be served by cooperation. Social learning leading toward an integrated view of man in the biosphere rationalizes international cooperation on numerous environmental issues regardless of differences in other respects. Many environmental issues threatening the biosphere today cannot safely be set aside until the political, social and economic antagonisms among nations are resolved. But people who collectively dislike one another can work together when faced with a common threat. This is the politics of antagonistic cooperation - perhaps the only strategy realistically available to defend the earth against human egoism, aggression and lack of foresight.

The absence of a common view of the human environment and how man should relate to it has been a major obstacle to international environmental policy. Realistically, near unanimity on the varied aspects of so large and complex subject is not to be expected. Yet there must be some underlying consensus model can act on any proposition.<sup>29</sup>

✓ Now, with the end of 'cold war', the beginning of a 'green war' or 'warm war' against the spoiling of the earth's resources emerged which marked a new ecological dimensions in the North-South dialogue for a new international environmental order.

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29 Evans, G., Foreign Policy and Environment, World Review, 30(4), December 1991, p. 123.



The essence of the North-South dialogue is gaining ground; the fact that we on planet earth are mutually dependent upon each other is becoming increasingly recognized. This confirms the need for a close international cooperation, and indeed a type of cooperation that breaks the existing patterns and influences policies and events in the direction of need changes.<sup>30</sup> At least intellectually, the interdependent character of the international order is widely recognised. The events of the post world war II have shown that development in one part of the world can have far reaching consequences in the rest. The future of the human race can be secured only through global solutions. It provides both for a pragmatic and the intellectual foundation for a North-South dialogue. Unfortunately, the recognition of global interdependence becomes empty rhetoric unless it is acted upon. It is not enough to mouth phrases about global interdependence. The starting point of any real problems of the South are the joint responsibility of both the industrialized and developing countries. It is necessary to insist on this point.<sup>31</sup>

✓ The threats posed to the environment are of concern to all countries, North and South, East and West. But it is clear that no country or groups of countries can respond alone to this challenge. The requirement is for action at

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30 Brandt, Willy (1990), Common Crisis - North-South Cooperation for World Recovery, p. 37.

31 Odlee, R. (1980), Environmental Awakening - The New Revolution to Protect the Earth, pp. 20-25.

national, regional and international level. In order to succeed them, these actions must be part of a comprehensive, coherent and coordinated strategy.

The environmental problem has to be placed in its proper perspective, both in developed and developing countries. It should not be presented as a pollution problem in the developed world and a poverty problem in developing countries, instead it should be treated as a problem of the most efficient synthesis of developmental and environmental concerns at different stages of social transitions.<sup>32</sup>

A position commonly taken by developed countries that the basic principles for international action should be "one body, one job". It is stated that world's complex environmental problems cannot be solved by any among international institutional reforms if such changes are not fully supported by the participating countries.

The issues, then as now, were global and could be resolved only by identifying a mutuality of interest between the North and the South. The mutuality of interests should be particularly clear in this case since few things represent the shared destiny of human kind as the environment. This should hardly need any reminding at this juncture. Since there has been so much talk of 'interdependence', globalization of national economies and 'New World Order', emanating from

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32 Joseph, W. (1983), *Environmental Problems in Third World*, p. 115.

the North in the recent past. But the attitude of most developed countries has been informed by narrow perceptions of national interest.

The developed countries must be prepared to meet the cost of pollution control and its eradication wherever and in whichever ways they are causing it. As the major pollutants of the world it should be their primary responsibility. Secondly, they should be prepared for a gradual shift away from their over-consumption waste-oriented life styles. Third, the developing countries should be adequately compensated if they have to bear the cross of environmental preservation at the cost of their own industrial development. Fourth, for developing countries, environmental concerns should not be a barrier to development, but should be a part of the process, since development that is environmentally sound is also likely to be enduring and to avoid unforeseen and unwelcome side effects.<sup>33</sup>

The developing countries are fully conscious of the responsibility to conserve environment and believes that every nation in the world has a similar responsibility. However, it is also necessary to stress the fact that environment should not and cannot be used as an instrument for setting up a new global hierarchy. An unjust international economic order

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33 Hartshori, G.S., Key Environmental Issues for Developing Countries, Journal of International Affairs, 44(2), 1991, pp. 140-50.

cannot be replaced by an equally unjust environmental order. Any just world order would demand that all human beings have an equal right to environmental space to enable them to pursue development.<sup>34)</sup>

The traditional forms of national sovereignty are increasingly challenged by the realities of ecological and economic interdependence. Nowhere is this more true than in shared ecosystems and in the global commons (spaces, high seas, extra-terrestrial space and Antarctica), these parts of the planet that fall outside national jurisdiction. Here, sustainable development can be secured only through international cooperation and agreed regimes or surveillance, development and management in the common interest. But no nation is able unilaterally to administer international activities and concurrent action by nations may require coordination and direction that they cannot individually provide. Each nation may undertake its share of the action provided the action can be apportioned by national jurisdiction.<sup>35</sup>

All governments, moreover, are far from equal in their ability to participate in cooperative programmes. Many of these programmes require advanced technologies, skilled personnel, finance, etc. The paradox then is that international

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34 Hartje, V.J., Environmental Problems in Third World, What Can the North Do?, Economics, 25, 1987, pp. 105-15.

35 Cheryl, S.S and Ruth, S.D. (1991), One Earth, One Future - Our Changing Global Environment, p. 85.



cooperation is impossible without national concurrence, but mere concurrence as a formality is insufficient to insure that effective cooperation will occur. Something more than national governments is needed to attain the objectivity of international environmental cooperation. So for environmental issues, as with other areas of international relations, the structure of international cooperation has been changing.<sup>36</sup>

Given the novelty of the concept 'environmental diplomacy' and the collateral newness of the activity itself, it is only natural that much of the efforts so far have been devoted to the creation of special instruments, through which diplomacy can act in its search for solutions or at least containment of international environmental problems.

Attitudes are changing, but there is nonetheless a lag between the new perception and assumption, practices and institutional policies expressing traditional views of man and nature. Thus, the environmental movement is transitional between those perceptions and policies that have been widely prevalent in human affairs, and those new beliefs and commitments that are exemplified by the reports, declarations, conferences, laws, treaties, etc. While the transition has moved rapidly, many years may yet pass before its implications are fully realized.<sup>37</sup>

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36 Ibid., pp. 90-102.

37 Qnerer, N., Need for Global Perspectives on Environmental Issues, OPEC Bulletin, 23(3), March 1992, pp. 40-45.

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It is now realized that, neither traditional environmental law nor traditional diplomacy could offer proper perspective on environmental policy. However, if the international community is to respond effectively to the new environmental challenges, the action plan has to take the following components; environmental assessment, environmental management, environmental legislation, institutional arrangements and financial arrangements.

For successful international environmental cooperation, diplomats will have to work increasingly closely with environmentalists, public opinion, activities of a multilateral institutions, individual nation's policies and leadership, private sector organizations, experts from science, economics and social leadership, etc., industrialist, citizens groups. The principle of 'consensus' is now generally followed in the negotiation of most issues in international relations. A satisfactory concluded negotiating conference can only be arrived through the process of 'consensus'.

Despite the fact that conflicting interests are there among all states, but at least in regard to environmental matters cooperation is must. So the North as well as the South must realize that the world needs binding commitment and not mere rhetoric about environment.

In the end, the world faces an 'either' 'or' situation, the end of cold war has given governments the opportunity to improve the lives of their people and the planet.

D. Role of the United Nations  
on Environment

One of the principal purposes of the United Nations, as defined in Article 1 of the Charter, is to "... achieve international cooperation in solving international problems of an economic, social and humanitarian character". To that end the Charter directs the organization to promote higher standards of living and conditions of economic and social progress and development.<sup>38</sup>

Since its inception, the U.N. has accordingly offered a standing machinery and framework for international dialogue on major economic and social problems. It is in no small measure due to this ongoing debate that the international community today gives a high priority to the case of development in our increasingly interdependent world.<sup>39</sup>

The Charter of the United Nations encourages us to think in terms of common humanity and shared basic human needs. The web of ties which locks all parts of the world together, the urgency of finding solutions to social and economic problems and the increasing salience of such global issues, like 'environment' underline the need for a global approach.<sup>40</sup>

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38 U.N. Publications (1990), Global Outlook 2000: An Economic, Social and Environmental Perspectives, p. ix.

39 Ibid., p. xv.

40 Gardner, R.N. (1972), The Role of UN in Environmental Problems, p. 10.

The end of cold war about three years ago brought the United Nations to the centre stage of world politics. The UN of today, we have for the first time a near universal international organization. The great potential inherent in the United Nations has already been demonstrated in the last couple of years.<sup>41</sup>

The challenges facing the U.N. are those facing the human kind today. The challenge lies in averting the threat posed to human survival by the accumulation of massive arsenals of mass destruction and the degradation of the planetary environment. It lies in grappling with the imperatives of global economic and ecological interdependence and coordinating macro-economic policies at the global level in a really effective and equitable manner. The United Nations is the unique forum to meet all these challenges because it is the only universal forum mandated by its charter to deal with global problems in a broad perspective and in all their multi-dimensional ramifications. The U.N. would help to counter the current trend whereby, it is being cast in a policing role vis-a-vis the South, and refocus on the development challenge.<sup>42</sup> So at the present juncture, change and adoption have become imperative for the U.N. because of these sweeping dimensions of the recent change in world politics.

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41 Evteev, S.A. and Perelet, R.A., Ecological Security of Sustainable Development, in John P. Renninger, ed., The Future Role of UN in Interdependent World.

42 Muchkund Dubey, Future Role of the U.N., Times of India, 21st July, 1992, New Delhi.



Regardless of the degree to which individual countries are able to develop and implement national sustainable development strategies, the achievement of regional and global strategies is going to involve unprecedented levels of mutual understanding and international cooperation. In most of the cases, international agreement under the U.N. auspices may be the most effective, whereas in others, agreement between groups of countries with common and complementary interest may be more effective. Too often, governments have been prepared to adopt U.N. resolutions and agree to programmes but reluctant to provide funding at the levels needed to result in effective action.<sup>43</sup> Nevertheless, a major strength of the U.N. system is its ability to give visibility and a significant degree of momentum to international environmental issues.

There is no easy way to describe the environment-related activities of the United Nations system that will be at once comprehensive, coherent, concise and accurate. But, to understand the roles and relationships of the various components of the United Nations system in environmental policy it is quite necessary to understand at least the outline of its structure and the functions of its principal parts.<sup>44</sup>

The environmental policy role of the United Nations has both political and technical aspects, and both are affected

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43 Ralph, O.S., Conservation in Changing World, Environmental Conservation, vol. 18, no. 1, Spring 1991, pp. 7-9.

44 Johnson, B. (1980), U.N. System and the Human Environment, p. 13.

by the missions and the organizational histories of the United Nations specialized agencies. These agencies have been established separately, each by its own treaty, thus, adding to the complexity of the structure of international environmental policy.<sup>45</sup>

#### General Assembly and Secretariat

To the politically literate public, the U.N. is most likely to be identified with the General Assembly. Although it is the principal policy making body of the United Nations system, the General Assembly tends to function at a high level of generality.<sup>46</sup>

The United Nations works largely through a structure of committees, commissions, councils and semi-autonomous special bodies. Of the three principal councils only Economic and Social Affairs (ECOSOC) is directly concerned with environmental policies, although environment related issues have been brought before the councils on Security and Trusteeship.<sup>47</sup>

The Secretariat of the U.N. provides administrative services for the General Assembly and its subdivisions. The structure of the Secretariat is complex, and the activities of the offices for which it has responsibilities are diverse.

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45 Caldwell, L.K. (1991), *International Environmental Policy: Emergence and Dimensions*, p. 101.

46 Russell, R.B. (1970), *The General Assembly: Patterns, Problems and Prospects*, p. 10.

47 *Ibid.*, pp. 12-13.

The Secretary-General has little formal power; however, the fractionalization of power in the General Assembly provides openings for him to influence the course of events. Thus, the personal skill of the Secretary-General is a major factor in the effectiveness of his role in the United Nations.<sup>49</sup>

With the establishment of the United Nations Environment Programme (UNEP), 1972, after the United Nations Conference on Human Environment (UNCHE), Stockholm, 1972, much of the initiative in United Nations environmental concerns passed to the executive director and governing council of UNEP. In the actual exercise of its functions, however, UNEP, characteristically acts in concert with UNESCO, FAO and the non-governmental IUCN. Nevertheless a UN Secretary-General could play a significant role in environmental policy, if his interests inclined in this direction. During the years preparatory to the United Nations Conference on the Human Environment, Secretary-General U Thant of Burma made a major contribution to international awareness of a world-wide environmental issue of growing urgency.<sup>50</sup> Same thing also happens, in United Nations Conference on Environment and Development (UNCED), Brazil 1992, where U.N. Secretary-General played

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48 Gerad, J.M., ed., 1966, U.N. Administration of Social and Economic Programs, pp. 1-36.

49 U.N., "Problems of the Human Environment: Report of the Secretary-General", 26th May, 1972.

50 Caldwell, L.K. (1991), International Environmental Policy, p. 102.

a vital role. Being the nationals of third world countries, they blamed the developed countries for global environmental degradation.

### Special Bodies of the United Nations

The greater number of environmental-related United Nations activities occur under the authority or purview of the Economic and Social Affairs Council. But relationships between ECOSOC and programs associated with it are sometimes largely proforma. For example, the UNEP, reports annually to the General Assembly through ECOSOC, which then transmits the report with such comments as it deems necessary. For details about U.N. System, Specialized and Affiliated Agencies, International Funding Agencies, Non-U.N. Intergovernmental, Non-Governmental Scientific Agencies, and Non-Governmental Quasi-Scientific, Technical and Professional Agencies, International programmes and services, concerns with environmental matters, see Annexure 3.

Let us point out, some of the historic events of the U.N. regarding international environmental problems. They are, United Nations Conference on Human Environment, Stockholm, 1972, U.N. sponsored Montreal protocol on Substances that Deplete Ozone Layer, 1987, and United Nations Conference on Environment and Development (UNCED), 1992, at Brazil, Rio de Janerio. (These conferences will be discussed in subsequent chapters). The U.N. also played a major role in producing some important reports on Environment and Development. World

Conservation Strategy - IUQN/UNEP/WWF, 1980, U.N. appointed report on North-South - A Programme for Survival by Willy Brandt, 1980, and Common Crisis - North-South Cooperation for World Recovery - 1983, G.H. Brundtland report, 1983, Our Common Future, World Commission on Environment and Development (WCED). In 1987, the Governing Council of UNEP report on Environmental Perspective to the Year 2000 and Beyond, the World Environment 1972-1982, by UNEP and in 1991, Caring for the Earth: A Strategy for Sustainable Living by IUQN/UNEP/WWF. 51

If one takes into consideration that governments started to perceive the need for U.N. instruments on environmental diplomacy, since last two decades, the result is quite impressive indeed. Mainly as a result of U.N. initiative, international agreements have been negotiated and adopted to regulate multilateral cooperation for the resolution of the environmental problems common to the perspective parties to the conventions, be it in the medium of the sea, inland waters, the air, soils or Antarctica.

The international institutional framework now under U.N., however, impressive in size and diversity it might seem to be, is yet by no means perfect as a tool for environmental diplomacy. We can therefore probably foresee further efforts of organizational and legal ingenuity on the part of diplomacy to sharpen the instruments.

The U.N. system will continue to assist the international community in reducing the impact of pollution and environmental degradation, rehabilitating ecosystems that have already suffered and most important, promoting sustainable development so as to bequeath to future planet where every human being has the opportunity to fulfil his or her full potential. It is necessary to speed up this process and to upgrade its priority status.

The U.N. can meet these challenges only if the basic values and principles underlying the Charter are preserved, upheld and consciously promoted. There is no greater threat to the security of nations and peoples than inequality and injustice inherent in the present world order. The U.N. should therefore attach the highest priority to activities designed to eliminate the sources of inequalities and injustice, economic and environmental matters. All countries should be accountable to the U.N. for acts and policies which have a bearing on the obligations undertaken under the U.N., and implications for other member countries.

So ecological problems rank high on the list of mankind's global problems. Their rational and humanistic solution is one of the conditions for the survival and progressive development of mankind. This new global awareness does not make for easy diplomacy.

## Chapter 2

### GLOBAL ENVIRONMENTAL ISSUES AND THE DEVELOPING COUNTRIES

- Introduction
- The Concept of Environmental Pollution
- Global Environmental Problems
- Environment and Development; A Need for Reconciliation - The Quest for Sustainable Development - The Developing Countries Perspectives
- Environmental Impact Assessment in the Developing Countries

"The environment is where we all live; development is what we all do in attempting to improve our lot within that abode. The two are inseparable".

- Gro Harlem Brundtland, Prime Minister of Norway, Forward to "Our Common Future"; Report of the World Commission on Environment and Development, 1987.

## Chapter 2

### GLOBAL ENVIRONMENTAL ISSUES AND THE DEVELOPING COUNTRIES

#### A. Introduction

Humanity lives in two realities. The abiding reality is that of the earth - the planet - independent of man and his works; the other reality - the transient reality - is that of the world, which is a creation of human mind. The earth and its biosphere form a grand synthesis of complex interactive systems within systems, organic and inorganic, animate and inanimate. The world is the way humanity understands and has organized its occupancy of the earth; an expression of imagination and purpose materialized through exploration, invention, labour and violence. Oceans, islands, species and ecosystems are integral parts of the earth, but the world is not integrated - its culture and their values do not comprise a unity. All living men may be of one species, but their values are diverse. Physically, men belong to the earth, yet intellectually they may transcend it - a dangerous liberty when dissociated from regard for the necessities of life on earth. It is an arrogant conceit that whatever men can imagine, men can one day do.<sup>1</sup>

The environmental crisis of the modern world derives from this physical and intellectual duality. Unlike the

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1 Caldwell, L.K. (1991), International Environmental Policy; Emergence and Dimensions, p. 8.



environmental disasters encountered by prehistoric and primitive man, the modern crisis is largely man-made - a consequence of the failure of human insight and ingenuity to predict and prevent the ill effects of human imagination and purpose. Yet, this shortcoming of perception does not appear to be inherent in human mentality, but more likely an evidence of its uneven expression in human culture. The remedy for failure to assess the needs for continued life on earth lies in the exercise of human capacity to observe, to learn, and to apply, with restraint appropriate to the circumstances.<sup>2</sup>

There has been a growth of understanding that the goals of policy cannot be achieved solely by attack upon apparent and immediate environmental problems, for they are often manifestations of deeper environmental disorders requiring the systematic analysis and explication that the sciences may provide. National and international policy making seldom proceed along lines of systematic scientific relatedness.

Regardless of popular understanding, this chapter discusses, the scientific aspects of critical global environmental issues, because perception derived from science are gaining in recognition and influence upon international environmental policy development.

B. The Concept of Environmental Pollution

Environment is defined as the forces and conditions

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2 Ibid., p. 9.

that surround and influence living and non-living things. Each living organism - from lowest to the highest has its own environment and this is affected by changes in natural cycles. It is broadly divided into two parts: biotic and abiotic for ecological purposes. Biotic environment consists of living organisms, which both interact with each other and are inseparably interrelated with their abiotic environment. Abiotic environment or physical environment includes all those physical and non-living chemical aspects which exert an influence on living organisms. Among these are soil, water, and the atmosphere and influence of energy from various sources.<sup>3</sup>

Environment pollution is a term that refers to all the ways by which people pollute their surroundings. When man and other higher animals began their life on this earth, there was absolutely no sign of pollution. There was a perfect balance in various natural processes. As human population increased there was increase in our working sphere and with this also increased the pollution. On one hand, the advancement of science and technology have added to human comfort by giving us automobiles, electrical appliances, supersonic jets, space crafts, better medicine, better chemicals to control harmful insects and other pests, etc., but on the other hand, they have given us a very serious problem to face pollution.<sup>4</sup>

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3 Alan McGown, "On environmental Pollution", in World Bank Encyclopedia of Nations, pp. 260b-260e.

4 Ibid., pp. 260k-260j.

There is less argument about which issues are environmentally significant than about which among them are the more critical. Every categorization of environmental issues is to some extent arbitrary in the sense that other schema may be equally valid - although not necessarily contradictory. The following enumeration of critical issues lists in a broad categories of environmental significance:

1. Ecosystem disruption and destruction (massive loss of habitat, genetic material, quality of life and regenerative capabilities - marine as well as terrestrial).
2. Genetic loss (threatened extinction of presently endangered species).
3. Devegetation; deforestation and overgrazing (many of the above effects as well as destruction of forest-dwelling peoples, soil deterioration including laterization, flooding situation and possible reduction of atmospheric oxygen).
4. Desertification (caused or exacerbated by human activities, reducing food and fiber productivity and simultaneously causing erosion of top soil by wind and water impairment of atmospheric clarity by dust).
5. Contamination of the environment- air, water, soil and biota (by industrial toxicants including radioactive materials).
6. Degrading and depletion of fresh water (due to acidification of lakes and streams, and exhaustion or contamination of ground water and aquifers and destruction of wet lands).

7. Overpopulation especially in developing countries.
8. Deterioration and erosion of top soil (especially in tropical countries and closely related to overpopulation and deforestation).
9. Climate change and deterioration of atmospheric quality, sea-level rise caused by global warming, disruption of stratospheric ozone layer, precipitation of acidic and other contaminants and impairment of atmospheric clarity by industrial particulates and dust.
10. Disruption of biochemical cycles.
11. Pollution of international commons: (Atmosphere, outer space, oceans and Antarctica).
12. Pollution of marine environment.
13. Nuclear and chemical pollution.<sup>5</sup>

In the above, we have given a broader classification of environmental pollution. Let us discuss some of the specific global environmental issues.

### Climate Changes

#### A. Global Warming and Greenhouse Effect

There are good reasons that global warming figures high on the international policy agenda, but the subject is mired in controversy. The dilemma is two-fold; ecologically, global warming leads to irreversibilities; economically, delayed

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<sup>5</sup> Caldwell, L.K. (1990), *International Environmental Policy: Emergence and Dimensions*, pp. 17-18.

action will mean higher costs for future generations.<sup>6</sup>

### What is the Greenhouse Effect

The earth's climate is driven by solar radiation. In the long run the energy absorbed from the sun must be balanced by outgoing radiation from earth and the atmosphere. Part of this outgoing energy is absorbed and re-emitted by radiative atmospheric gases (green house gases), thereby reducing net emission of energy to space. To maintain the global energy balances, both the atmosphere and the surface will warm until the outgoing energy equals the incoming energy. This is greenhouse effect.<sup>7</sup>

To define the greenhouse effect, it is necessary to understand that in a greenhouse or glass house used for growing plants usually in the cold countries, solar heat radiation enters through the glass walls which are transparent to this type of infra-red radiation (short wave length radiation). The interior of the greenhouse warms up and in turns radiates longer wave-length heat. The glass walls are however less transparent to this second type of heat radiation, and resultantlly check it to be transmitted. That is why the interior of greenhouse heats upto an appreciable extent relative to its surrounding exterior. A similar natural process, with some atmospheric gases is responsible for maintaining the

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6 World Meteorological Organization, No. 772, 1992, Climate Change: Environment and Development, p. vi.

7 World Development Report (1992) - Environment and Development, pp. 158-60.

earth at an average temperature of 15 degree C. The water vapours play a role of glass walls of the greenhouse in the atmosphere. The natural greenhouse effect is thus essential for life on the earth.<sup>8</sup>

### What Causes the Global Warming

Certain industrial and agricultural activities, among them burning fossil fuels and the conversion of forest lands to agricultural purposes, release gases that can change the heat balance in the atmosphere. The principal culprits of global warming is due to the emission of "green house" gases, notably, carbon dioxide (CO<sub>2</sub>), 51%, chlorofluorocarbons (CFC<sub>s</sub>), 11%, methane (CH<sub>4</sub>) 15%, nitrous dioxide (N<sub>2</sub>O), 4% , and others 9%. These gases are present in very small quantities in the atmosphere - taken together they make up less than 1% of the molecules in the air - but they trap significant amounts of heat near the earth surface.<sup>9</sup> (See Table 1 about Greenhouse Gases).

### Impacts of Global Warming

#### Climate Change

The continuing buildup of greenhouses gases is altering the composition and behaviour of the atmosphere. Emission of greenhouse gases during the last century have already

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8 Adams, W.M. (1990), Green Development: Environment and Sustainability in the Third World, p. 18.

9 Ibid., pp. 22-25.

Table 1

The Major Greenhouse Gases

S.No.	Gas	<u>Concentration in Air</u>		<u>Present Annual Increase</u>		Sources
		Pre-industrial	1989	Rate	Percent	
1.	Carbon di-oxide CO <sub>2</sub>	275 ppm	354 ppm	1.7 ppm	0.4	<ol style="list-style-type: none"> <li>1. Fossil Fuel Combustion (coal, oil, natural gas)</li> <li>2. Deforestation and land use changes.</li> </ol>
2.	Methane, CH <sub>4</sub>	0.7 ppm	1.7 ppm	12.3 ppb	0.7	<ol style="list-style-type: none"> <li>1. Enteric fermentation in cattle and insects</li> <li>2. Biomass burning and garbage landfills</li> <li>3. Coal mines and natural gas leaks</li> <li>4. Swamps and tundra</li> </ol>
3.	Chlorofluro CFC - 11	0.0	0.28 ppb	0.01 ppb	3.4	<ol style="list-style-type: none"> <li>1. Aerosols (spray propellants)</li> <li>2. Refrigeration and air conditioning</li> </ol>
	Carbons CFC - 12	0.0	0.47 ppb	0.025 ppb	5.3	<ol style="list-style-type: none"> <li>3. Plastic foams</li> <li>4. Industrial solvents</li> <li>5. Sterilants for medical supplies</li> </ol>

Table 1 cont'd ...

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4.	Nitrous oxide N <sub>2</sub> O	280 ppb	306 ppb	0.6 ppb	0.2	1. Fertilizer use 2. Fossil fuel combustion 3. Biomass burning 4. Changing land use
5.	Tropospheric ozone O <sub>3</sub>	-	35 ppb	-	-	1. Partly from stratospheric ozone  2. Photochemical Production

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Notes: ppm - Parts per Million  
ppb - Parts per Billion  
- - Data not available

Sources: 1. Intergovernmental Panel on Climate Change (IPCC, 1992, Supplement).  
2. U.S. Environmental Protection Agency (EPA), 1992.



committed the planet to an eventual warming of 1-2.5 C. Indeed a warming of 0.5 - 0.8 C has already been observed. This rise will not be steady because of many factors, but may mean a 1 C rise by 2050 and 3 C rise by 2100. Although this may not sound much, a warming of just over 1 C would take the planet outside the range which has been experienced in the last 10,000 years. The long-term effects of such a warming would be complex and pervasive.<sup>10</sup>

The warming trend will change the temperature gradient between the cold polar regions and the warm tropics. As a consequence, the traditional pattern of winds and ocean currents will shift.

Climate changes could prolong droughts in the semi-arid tropics by raising temperature and decreasing rainfall in one or more seasons. Some scientists have speculated that the recent prolonged drought in Africa may be an early manifestation of the regional impact of global warming.<sup>11</sup>

#### Changes of Sea Level

It has been estimated that a global warming of 1.5 C to 4.5 C would lead to a sea level rise of 20 to 140 cm, mainly through the thermal expansion of ocean water. Climate warming could also melt the drifting sea ice in the Arctic ocean and

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10 Brown Neille (1989), Greenhouse Effect - Global Change, pp. 40-42.

11 Ibid., pp. 44-48.

thaw the West Antarctic ice sheet. Melting the sea would substantially increase sea surface temperature and so shift major climatic zones 200 kms., or more northward. There is a considerable debate over the likelihood of Antarctic ice sheet melting. Recent studies conclude that a significant melting would lead to a much larger rise in sea level, but this is not expected during the next century.

A sea-level rise of about 1 to 2 meters would permanently submerge wet land and low lands, accelerate coastal erosion, exacerbate coastal flooding, threaten coastal structures, and increase the salinity of estuaries and coastal agnifers. These would have far-reaching environmental, economic and social implications for many countries. But the worst effects would be felt by low-lying coastal areas and islands.<sup>12</sup>

#### Impacts on Agriculture

Food production and its distribution could be greatly affected by climate change. In general increasing carbon dioxide concentrations in the atmosphere would have beneficial effects on crop yields. Laboratory experiments indicate that a doubling of CO<sub>2</sub> concentration would increase the growth and yield of maize, sorghum and sugarcane, by upto 10%, with a 10-50% increase for wheat, rice and soyabean, depending upon specific crop and growing conditions. Researchers have

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12 Angell, J.R.D. and Justyn, D.C., ed., 1990, *Sustaining Earth: Response to the Environmental Threats*, pp. 18-25.

also found that plants growing in higher CO<sub>2</sub> levels are harder in some respects. Crop impact analysis show that warmer average temperatures decrease both wheat and maize yields in the vital mid-latitude crop regions of North America and Western Europe.<sup>13</sup>

### Changes in Terrestrial Ecosystems

Examining patterns of global vegetation and climatic changes could potentially have profound effects on global ecosystems. Forests may be adversely affected because the climatic changes will occur in time spans comparable to their rotation periods so that there is a little scope for adaptation. These stresses may be greatest in semi-arid areas.<sup>14</sup>

### Climate Change and Human Health

The changes in the planet's climate are likely to damage human health. Food and fresh water supplies will be disrupted, millions of people displaced, and disease patterns altered dangerously and unpredictably. The populations most vulnerable to the negative impacts of global warming are in developing countries, in the lower income groups, residents of coastal lowlands in semi-arid grasslands and the urban poor in the squatter settlements, slums and shanty-towns of large cities.<sup>15</sup>

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13 Ibid., pp. 26-32.

14 Skonpy, Jiri, Global Environmental Problems and Their Solutions, International Relations, 1989, pp. 35-40.

15 Ibid., pp. 42-46.

At present, global warming is basically caused by the developed countries, through burning of fossil fuels and extensive use of CFC<sub>6</sub>. In the 1980s, the industrial countries were responsible for some 75% of the CO<sub>2</sub> and more than 90% of the CFC<sub>5</sub> omissions. Unless action is taken the contribution of the developing countries to global warming will increase rapidly. So far, a high proportion of the CO<sub>2</sub> emissions in the developing countries are the result of deforestation and burning of biomass fuels; industrialization will take over in the future. Clearly, the industrial countries have a responsibility to lead the way, both through their national policies and through bilateral and multilateral assistance.<sup>16</sup>

Developing countries produce only 25% of the world's greenhouse gas emissions. As economics and production grows, in the South, greenhouse gas emission can be expected to increase. In addition, the tropical forests of the South, which play a role in the global climate control are being cut down at unsustainable rates. Southern countries, nonetheless, see climate change as a problem caused exclusively by the North, and they will not accept a disproportionate amount of responsibility, in solving it. They have made it preferably clear that their willingness to slow the rate of their greenhouse gas emissions and to preserve tropical forest, is dependent on few factors; the binding limits on the emissions of industrialized countries, and the provisions of

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<sup>16</sup> Udo E. Simons, *Poverty, Environment and Development, Intereconomics*, March/April, 1992, vol. 27, p. 82.

additional financial resources and appropriate technologies from the North to the South.<sup>17</sup>

Recognizing the universal danger of global climate change, the United Nations General Assembly, established the International Negotiating Committee (INC), for a convention on climate change in 1990. The INC negotiations have held till December 1991. The treaty was made to sign at UNCED - 1992.

The key elements in the negotiations are the commitments of the parties to :

- implement suitable measures to stabilize the emission of greenhouse gases; starting with the industrialized countries;
- adopt policies and measures for reducing greenhouse gases emissions;
- protect the existing and develop sinks and reservoirs for greenhouse gases.
- cooperate in the development and dissemination of scientific, technological, socio-economic and legal knowledge relevant to climate change and potential response there to;
- cooperate in the transfer to developing countries of new technologies and techniques that consume less energy or produce less greenhouse gases;
- establish fund for financing measures to counter the

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17      The Hindu, Madras, 9 March, 1989.

adverse consequences of climate change.<sup>18</sup>

How far the abovementioned proposals were succeeded in UNCED - 1992, will be discussed in the Chapter 5.

So climate and climatic change will certainly have an effect on the future sustainable development of much of our planet's resources such as those relating to biodiversity, water, forest and oceans as well as in relation to various sectoral activities like agriculture and industry.

B. Ozone Layer Depletion

This is one of the important global environmental crisis and so much diplomatic effort has been done on this aspect that, it needs separate elaboration, and is being discussed in Chapter 4.

C. Acid Rains

The precipitation of rain clouds and the resultant shower are exposed to unnatural atmospheric oxides due to industrial pollution. These gases are generated due to manufacturing activities and disperse into the atmosphere. Consequently, the rain has to pass through an atmosphere polluted with two poisonous gases namely sulphur dioxide ( $\text{SO}_2$ ) and several nitrogen oxides (NOx). These gases are mostly emitted from power plants and factories. In the air they become oxidized to form acid sulphate ( $\text{SO}_4$ ) and acid nitrate ( $\text{NO}_3$ ) respectively. These acids return to the earth in rain, snow and hail and as dry microscopic particles, sometimes after travelling hundreds or even thousands of

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18. Tobla, M.K.

miles. This causes widespread harm to the environment.<sup>19</sup>

Source of acid rain is always located in a country different from the country which will act like a sink. It means the harmful effects of acid rain can be observed in any other country. Acid rain does constitute a threat to human health. It creates dying lakes. Acid rain reduces the acid neutralizing capacity of lakes. It also causes breeding failures of fishes. It causes decrease in soil fertility which will lead to forest losses as well as crop losses. In the Gulf War, the burning of oil spills caused serious damage through acid rain to the environment.<sup>20</sup>

A variety of approaches and technologies aimed at the reduction of acid rain are available:

- selection of fuels low in sulphur and nitrogen content;
- combustion modification using limestone, injection multi-stage burners, fluidized bed combustion, and post combustion emission controls using scrubbers, which allow removal of 50 to 90 per cent of the SO<sub>2</sub> in coal fired electric power plants;
- use of the catalytic converter to reduce emissions of nitrogen oxides in new automobiles that burn unleaded gasoline;

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19 Sakhujā, S., Kaur, S., Mukherji, K.K., Gulf War and Its Impact on Environment, World Affairs, December, 1991, p. 44.

20 Global Outlook 2000; An Economic, Social and Environmental Perspective by the United Nations, p. 83.

- increased fuel efficiency;
- vehicle sharing and limitation of private automobile use.<sup>21</sup>

D. Deforestation

One of the world's great ecological disasters in the closing decades of the twentieth century has been the pervasive destruction of tropical forests. The world's forests are disappearing at a rate of 15 million hectares each year, in humid parts of Africa, Asia and Latin America. With the present rate of deforestation, about 40 per cent of the remaining forest cover in the developing countries will be lost by the year 2000.<sup>22</sup>

The forces which have combined to destroy the forests are ;

1. excessive population growth,
2. poverty,
3. inordinate demand for raw materials in the industrial societies,
4. technologies that facilitate forest exploitation, and
5. The desire for foreign exchange, many developing countries to export timber faster than their forests are being regenerated.<sup>23</sup>

Unwise deforestation in temperate latitudes has had all ill effects locally and regionally, but does not approach

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21 Ibid., pp. 84-85.

22 Ibid., p. 86.

23 Ibid., p. 87.



the potential for worldwide harm that could follow the loss of tropical forests. These forests are believed to have a significant role in the maintenance of the global atmosphere. Further, since their soil may not be convertible to agricultural cultivation, deforestation may worsen present social and economic conditions in many developing countries. Exponential population growth and corresponding increase in poverty have not only encouraged governments to sponsor settlement schemes at the expense of the natural environment, but have also forced poor farmers farther and farther into forests and onto marginally productive lands in pursuit of subsistence agriculture. Shortage of energy sources in tropical countries has also led to excessive tree cutting for firewood.<sup>24</sup>

The developing countries face a dilemma. On the one hand, there are great short-run pressures to exploit the forest for economic purposes, but the penalties for over-exploitation to meet urgent necessities today could be irretrievable ecological, social and scientific deprivation in the future. Faced with growing populations of poor and hungry people, governments in tropical countries look upon these forests as logical answers to human needs.<sup>25</sup>

To alleviate tropical deforestation and to promote sustainable exploitation of the world's forests, nations

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24 Caldwell, L.K. (1991), International Environmental Policy, p. 221.

25 Mather, A.S. (1990), Global Forest Resources, p. 18.

should assess the value of their forest resources in a comprehensive way and reflect this in their development plans. The following techniques and approaches are essential for better forest management:

- Agroforestry integrates trees with crop and livestock production system and is a promising way to link food production, especially in low-potential areas;
- Watershed management is necessary to guarantee food production in high-potential areas. Links need to be maintained between forestry and food production through an integrated approach to watershed management;
- Monitoring and evaluation systems should include adequate baseline surveys, geographic information systems and assessment of local environmental impacts and community benefits and involvement;
- Protection of genetic resources is fundamental to any forest strategy. The establishment of the international fund on plant genetic resources was an important step toward ensuring that the genetic resources of the tropical forests are conserved and widely managed.<sup>26</sup>

The tropical forestry action plan was initiated in 1985 to coordinate human needs, environmental management and sustainable forest development. Seeking to find the right balance between development and environmental protection,

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<sup>26</sup> Joseph, J. (1981), Environmental Problems in Third World, pp. 120-28.

this plan represents the first serious international effort to confront the problem of saving the tropical forest in an integrated way. The International Tropical Timber Agreement also came into force in 1985. Its main objective was to improve market intelligence, to assist producing countries to develop better techniques for reforestation and forest management, and to support research and development programmes to achieve these goals. Several developing countries, including Brazil, Indonesia, and the Philippines, have banned most exports of logs, more dramatically.<sup>27</sup>

The conflicting views on the forestry issue between developed and developing countries, and the 'Forestry Convention' will be discussed in the Chapter 5.

E. Desertification and Soil Degradation

Worldwide it is estimated that millions of hectares are losing their biological diversity each year, as human and animal pressures have accelerated the removal of vegetation and consequent soil erosion. Two-fifths of Africa's non-desert land risks being turned into desert, as does one-third of Asia's and one-fifth of Latin America. Disturbances of the ecological system has decreased the infiltration of rain water, increased surface run off, lowered ground water levels, and caused the drying up of surface water and loss of topsoil and soil nutrients. Under these conditions, drought will

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27 UNEP, The State of the World Environment, 1989, op. cit., Para 27.

more quickly reduce food output and lead to famine. However, political, economic and social factors are more important than low rainfall in the process of desertification.

Salinization affects extensive land areas in many countries in North Africa, the Middle East, and Asia. About half of the land under irrigation is affected by secondary salinization and/or alkalization in varying degrees. Inappropriate irrigation has wasted water, polluted ground water and damaged the productivity of millions of hectares in developing countries.<sup>28</sup>

F. Loss of Biological Diversity

The earth's genes, species and ecosystems are the product of over three thousand million years of evolution and are the basis for the survival of our own species. But the available evidence indicates that human activities are now leading to the loss of the planet's biological diversity and as a consequence are eroding biological resources essential for future development.<sup>29</sup>

Biological diversity means the variability among living organism from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes

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28 Global Outlook 2000: An Economic, Social and Environmental Perspective by the United Nations, pp. 87-88.

29 Tolba, M.K., Kholey, O.A., etc. ed., 1992, The World Environment (1972-1992): Two Decades of Challenge, p. 184.

diversity within species, between species and of ecosystems. It is the sum total of species on planet.<sup>30</sup>

Biological diversity provides material wealth in the form of food, fiber, medicine and inputs to industrial processes. It supplies the raw materials that may assist human communities to adapt to future and unforeseen environmental stresses. Furthermore many people value sharing the earth with numerous other forms of life and want to bequeath this heritage to future generations.<sup>31</sup> Scientists, environmentalists and spiritual leaders among those who argue that all species have an intrinsic ethical and aesthetic value beyond the commercial realm, and that extinction represents a loss, whether or not a species proves to have some benefit for humans.<sup>32</sup>

Recently, drug and chemical companies, biologists and others have intensified their research, aided by robots that screen plant sample around the clock. They are seeking better access to species-rich areas such as tropical rain forests in order to catalogue genetic raw materials for later use or synthesis in the laboratory. Their goal is to discover cures for aids, cancer and heart disease, to improve pesticides and food crops, and to profit from patent worthy biotechnologies.<sup>33</sup>

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30 Ibid., p. 186.

31 World Development Report (1992) - Environment and Development, p. 85.

32 Earth Summit in Focus, No. 7, 1992, Protecting the Diversity of Species on the Planet, p. 1.

33 Ibid., pp. 2-3.

By far the greatest cause of species extinction is the disappearance of natural habitats - forests, wetlands, and coastal regions - through deforestation, urban sprawl, rural development, air and water pollution, overpopulation and other pressures linked to human activities. Global warming is another cause for loss of biodiversity. Many plants and animals will no longer be suited to their environments.<sup>34</sup>

### Protecting Biodiversity

Biological diversity is a matter of international concern, but it is not global common property. The habitats supporting biological diversity, other than those in international waters, belong to individual countries that have an interest in managing a valuable national resource well. At the same time protecting biological diversity is of international concern because its benefits accrue not only to the local population but also - sometimes in rather difficult ways - to people all over the world.

Conservation of biological resources means the preservation, maintenance, sustainable use, recovery and enhancement of the components of biological diversity.<sup>35</sup>

Working together, UNEP, IUCN and WWF have prepared a new version of the world conservation strategy, designed to

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34 World Development Report - 1992, p. 166.

35 Earth Summit in Focus, No. 7, Protecting the Diversity of Species on the Planet, p. 4.

meet the needs of 1990s (Caring for the Earth; A New Strategy for Sustainable Living). In order to carry out the broad prescription of this new strategy, UNEP, WFI and IUCN, in consultation with FAO, UNESCO and large numbers of government agencies, NGOs and individual experts have prepared a Global Biological Strategy which includes guidelines for action to save, study and use the earth's biotic wealth sustainably and equitably. Some important points;

- To develop national and international policy frameworks that promote the sustainable use of biological resources and the conservation of biodiversity;
- To create conditions and incentives for effective conservation by local communities;
- To increase the number and effectiveness of protected areas, gene banks, zoos and botanic gardens;
- To develop environmental awareness and strengthen the human skills and training needed to conserve biodiversity particularly in developing countries;
- To analyse conservation through international agreements and national planning.<sup>36</sup>

The North-South strategy on biodiversity, and 'Biodiversity Convention' will be discussed in Chapter 5.

C. Population, Poverty and Environment

In the face of persistent degradation and depletion of

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36 Tolba, M.K., Kholey, O.A., etc. ed., 1992, The World Environment (1972-1992); Two Decades of Challenge, pp. 210-11.

natural resources upon which development depends, no strategy is likely to succeed unless the day to day pressure of poverty that forces the poor to overuse the resource base is removed. To achieve poverty alleviation without adverse impact on the environment, any effective rural development strategy needs to be supplemented by policies to slow down population of growth.<sup>37</sup>

The second half of the twentieth century has been a demographic watershed. By mid-century the rate of population growth in developing countries had risen to unprecedented levels as mortality declined and life expectancy increased. In the 1980s, the population of the developing countries grew by 770 million, and according to the U.N. medium variant projection will increase by an additional 900 million in the 1990s. Assuming an annual rate of growth of 2.5% the population of the developing world would actually double in 25 to 30 years. This implies a further increase of pressure on the natural resource base, especially in rural areas.<sup>38</sup>

Population growth increases the demand for goods and services, and if practices remain unchanged, implies increased environmental damage. It also increases the need for employment and livelihoods, which - especially in crowded rural areas - exerts additional direct pressure on natural resources. More people also produce more wastes, threatening local health

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37 Udo E. Simons, Poverty, Environment and Development in Intereconomics, March/April 1992, vol. 27, p. 77.

38 World Development Report - 1992, p. 26.



conditions and implying additional stress on the earth's assimilative capacity. The pace of urbanization in developing countries poses huge environmental challenges to the cities.<sup>39</sup>

Poverty is the greatest pollution problem in developing countries. The poor are both victims and agents of environmental damage.

#### H. Environmental Hazardous

There are two kinds of hazardous, i.e., natural disasters like earthquakes, volcanic activity, tropical storms, floods, drought and the other is human induced hazardous like forest fires, oil spills, chemical and nuclear accidents.

All countries produce and dispose of hazardous substances on an increasing scale, but many of them especially developing countries, lack awareness of the hazards. They also lack the data and analytical capacity needed for the safe management of hazardous wastes. After decades of uncontrolled dumping, industrialised countries and an increasing number of developing countries have discovered that the cost of ignorance and neglect is extremely high in terms of air, water, and land pollution and consequent harm to health and productivity.<sup>40</sup>

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39 Earth Summit in Focus, No. 6, 1992 - Population Pressures : A Complex Equation, p. 2.

40 Ziram, K.L. and Mayer, J., eds. (1990) - The Management of Hazardous Substances in the Environment, pp. 10-15.

## I. Marine Pollution

The marine environment is one of the main components of the natural environment and is closely linked to the others; inland water resources, air, land and living natural resources. The marine environment, because of the diversity and quantity of its biological resources plays a crucial role in the equilibria of the biosphere.

The most cited definition of marine pollution is that proposed in 1969 by the joint group of experts on the scientific aspects of marine pollution (GESAMP), and thereafter adopted in the following, slightly amended form by the intergovernmental oceanographic commission (IOC) of UNESCO: "Introduction of man, directly or indirectly, of substances or energy into the marine environment (including estuaries) resulting in such deleterious effects as harm to living resources, hazard to human health, hindrance to marine environment including fishing, impairment of quality for use of sea water and reduction of amenities.

The main sources of marine pollution are usually identified as land-based pollution, pollution from dumping, vessel-based pollution and incineration at sea, pollution from exploration and exploitation of the sea-bed and from other marine activities.<sup>41</sup>

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41 Satu Nurmi, Issues and Problems in the Protection of the Marine Environment, pp. 207-12, in John E. Carroll (1988), ed., International Environmental Diplomacy: The Management and Resolution of Transfrontier Environmental Problems.

Efforts to solve the problem of marine pollution have been made and are being made in various directions, at national level, by bilateral agreements, on a regional basis, through multilateral action. Multinational control has clearly resulted in better compliances with environmental objectives, which quite often benefit areas beyond national jurisdictions.<sup>42</sup>

J. Pollution in International Commons:  
Atmosphere, Outerspace, Oceans,  
Antarctica

Atmosphere, outer space, high seas and Antarctica, these areas, over which national jurisdiction is ambiguous or ineffective, are nevertheless of increasing concern to so large a number of nations that they may be appropriately termed "international commons". It has become evident that the developed countries have the power to exploit the international commons to the point of severe depletion of many critical resources. Ecologically harmful use, ultimately hurts all people, impairing the quality of life on earth, foreclosing opportunities and diminishing wealth.<sup>43</sup>

The international commons are the proving ground for testing humanity's beliefs about its relationships with the earth and the biosphere. If nations cannot cooperate effectively in areas belonging to none of them, if they cannot refrain from predatory extensions of national economic and military

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42 Ibid., p. 214.

43 Caldwell, L.K. (1991), International Environmental Policy, pp. 257-302.

ambitions into the common spaces, it is difficult to see how they will fulfil environmental commitments already made in which economic interest are in conflict.

In the above discussion on global environmental issues, it is clear that developed countries are mostly responsible for global environmental damage - by life style based on high levels of consumption, waste generation and material expectation. The developing nations fully share the dangers of the deteriorating situation and will, unless assisted to do otherwise, contribute to it. Mired in poverty, over-population and debt, they are being asked to take expensive steps to avoid the disastrous environmental path already followed by the developed countries.

The ecological crisis now facing the planet is forcing both North and South to make painful choices in the name of mutual security. In an increasingly interdependent global economy, the active engagement of both sides in sustainable development practice could save the earth from environmental crisis. The sooner these issues are addressed in a cooperative endeavour, the better it would be for the future of the world as a whole.

## 2.2 Environment and Development; A Need for Reconciliation; The Quest for Sustainable Development - The Developing Countries Perspectives

The protection of the environment is an essential part of development. Without adequate environmental protection, development will be undermined; without development, resources

will be inadequate for needed investment, and environmental protection will fail.<sup>44</sup>

An important element in the understanding of environmental problems was the recognition of their dynamic relationship with the process of social and economic development. Rapid industrial and agricultural development without due regard to environmental factors results in sharp growth of pollution levels and depletion of resources required for development. Equally detrimental to the environment is the lack of development and the impossibility to meet the basic human needs, such as food, shelter, clothing and health, especially in developing countries.<sup>45</sup>

The environmental problems that countries face vary with their stage of development, the structure of their economies, and their environmental problems. Some problems are associated with the lack of economic development, due poverty, population growth, lack of infrastructural facilities in developing countries. But many other problems such as carbon dioxide emissions, depletion of stratospheric ozone layer depletion, smogs-acid rain and hazardous wastes, are exacerbated by the growth of excessive economic activities, in developed countries. Here the challenge is to build the recognition of environmental

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44 World Development Report (1992) - Environment and Development, p. 2.

45 Evtsev, S.A., Voronin, V.P., Ecological Security of Sustainable Development, in John P. Renninger, ed., 1989, The Future Role of the United Nations in an Interdependent World, pp. 162-163.

scarcity into decision-making. With or without development, rapid population growth may make it more difficult to address many environmental problems.<sup>46</sup>

There is no alternative but to pursue economic and social development in developing countries, wherein more than two-thirds of mankind live, in order to meet and to secure better perspective for their citizens. While development is essential to improve the quality of life, it is equally essential to ensure that development takes place on a sustainable basis.

It is neither scientific nor rational to accept the argument that developing countries should develop and progress first, and having developed, then attempts can be made to rectify the environmental disruptions that may have been caused during the development process. The argument is not only unacceptable from an ethical viewpoint, it is also incorrect from economic considerations. The "get rich quick" syndrome generally produces short-term benefits at long-term cost which often could far exceed the initial gains.

Some may argue that since industrialized countries developed first and then looked after their environmental problems, why can the developing countries not follow the same path? There are important reasons why such an argument cannot be valid. During the industrialization of the presently developed countries, resources, energy and labour were

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46 Shanmugarathnam, N., Development and Environment - A View from South, Race and Class, 30(3), January-March, 1989, pp. 40-45.

plentiful and cheap. The era of cheap energy and labour has now been over since last two decades.<sup>47</sup>

Industrial countries need to solve their own problems, but they also have a crucial role to play in helping to improve the environments of developing countries.)

- First, developing countries need to have access to less-polluting technologies and to learn from the successes and failures of industrial countries' environmental policies.
- Second, some of the benefits from environmental policies in developing countries - the protection of tropical forests and of biodiversity, for example - accrue to rich countries, which ought therefore to bear an equivalent part of the costs.
- Third, some of the potential problems facing developing countries - global warming and ozone depletion, in particular stem from high consumption levels in rich countries; thus the burden binding and implementing solutions should be on the rich countries.
- Fourth, the capacity of developing countries to enjoy sustained income growth will depend on industrial countries' economic policies; improved access to trade and capital markets, policies to increase savings and lower world interest rates and policies that promote

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47 Biswas, A.K., and Qu Geping, ed., 1987, Environmental Impact Assessment for Developing Countries, pp. ix - xi.

robust, environmentally responsible growth in industrial countries, will all help. Policy reforms and institutional changes are required to bring about accelerated development and better environmental management.<sup>48</sup>

In any consideration of international environmental and developmental policy in changing world, there is a practical proposition called New International Economic Order (NIEO), which incorporates grievances of the Third World against the developed countries. The literature of the NIEO is voluminous, its ultimate significance uncertain and its concern with environmental policy only partial and indirect. Among its declared objectives with direct bearing on environmental policy are:

- continuation and expansion of technical assistance for development to the developing countries;
- development of an international agricultural program to assist developing countries to reclaim and utilize fully the vast potential of unexploited or underexploited land, and the initiation of projects to arrest desertification, salinization, and damage by locusts or other similar phenomena;
- to avoid equitable access to resources of seabed and the ocean floor; and
- reaffirmation of the economic sovereignty of states, the full and permanent control over all their wealth, natural resources, and economic activities, and the

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48 World Development Report (1992) - Environment and Development, p. 3.



sovereign and inalienable right to choose its economic system as well as its political, social and cultural systems in accordance with the will of its people, without outside interference, coercion or threat in any form whatsoever.<sup>49</sup>

Other matters of economic, social and political systems are detailed at length in several NIEO documents, but the foregoing appear to be the more significant in relation to environmental policy.

#### Sustainable Development

An integrative theme for international environmental policy has emerged in the concept of "sustainable development". To be sustainable, development must possess both economic and ecological sustainability. The concept, which signifies a policy approach or goal rather than a substantive prescription, gained acceptance during the decade of the 1980s. It began to acquire the status of de facto official policy among governments generally as a consequence of its adoption by the World Commission on Environment and Development (WCED), established in 1983 (Chairman Gro Harlem Brundtland, former Prime Minister of Norway), by the General Assembly of the United Nations, and the publication in 1987 of its report,

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49 "Charter of Economic Rights and Duties of States" (1974), Resolution 3281 (XXIX) ; The Objectives of New International Economic Order. From Gary A. Hart (1982) - The New International Economic Order, pp. 20-25.

"Our Common Future".<sup>50</sup>

'Sustainable development', means development which "meets the needs of the present without compromising the ability of future generations to meet their own needs" - pointed out that economic and ecological considerations must be integrated in decision-making.<sup>51</sup> We have in the past been concerned about the impacts of economic growth upon the environment. We are now forced to concern ourselves with the impacts of ecological stress - degradation of soils, water regimes, atmosphere, and forests, upon our economic prospects .... Environmental degradation can undermine economic development", says the Brundtland report. "In one area after another, environmental degradation is eroding the potential for development".<sup>52</sup>

Sustainable development does not imply cessation of economic growth. Rather, it requires a recognition that the problems of poverty and underdevelopment and related environmental problems cannot be solved without vigorous economic growth. Sustainable development will require changes in current patterns of growth, however, to make them less resource and energy intensive and more equitable.<sup>53</sup>

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50 World Commission on Environment and Development, Our Common Future, 1987, Chairman Gro Harlem Brundtland.

51 Ibid., p. 42.

52 Ibid., p. 44.

53 Ibid., p. 45.

The Brundtland report notes that sustainable development requires .... "a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs ... painful choices have to be made ... in the final analysis, sustainable development must rest on political will".<sup>54</sup>

Meeting the needs of the poor in this generation is an essential aspect of sustainably meeting the needs of subsequent generations. There is no difference between the goals of development policy and appropriate environmental protection. Both must design to improve welfare. Basing developmental and environmental policies on a comparison of benefits and costs and on careful macroeconomic analysis will strengthen environmental protection and lead to rising and sustainable levels of welfare.<sup>55</sup>

#### Strategic Imperatives

Critical objectives for environment and development policies that follow from the concept of sustainable development include:

- reviving growth,
- changing the quality of growth,
- meeting essential needs for jobs, foods, energy, water and sanitation,
- ensuring a subsistence level of population,

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54 Ibid., p. 46.

55 Ibid., p. 47.

- conserving and enhancing the resource base,
- reorienting technology and managing risk, and
- merging environment and economics in decision-making.<sup>56</sup>

In broadest sense, the strategy for sustainable development aims to promote harmony among human beings and between humanity and nature. In the specific context of development and environment crises in the 1990s, which current national and international political and economic institutions have not and perhaps cannot overcome. The pursuit of sustainable development requires:

- A political system that secure effective participation in decision-making;
- An economic system that is able to generate surplus and technical knowledge, on a self-reliant and sustained basis;
- A social system that provides for solutions for the tension arising from disharmonious development;
- A technological system that can search continuously for new solutions;
- An international system that fosters sustainable pattern of trade and finance; and
- An administrative system that is flexible and has the capacity for self-correction.

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56 Ibid., p. 49.

These requirements are more in the nature of goals that should underline national and international action on environment.<sup>57</sup>

The South Commission recognized that the primary responsibility for the future of developing countries rests, of course, with them, and their success will depend largely on their own efforts. While there is much that the developing countries can and should do on their own to reduce their impacts, particularly through increased energy efficiency, they will need access to substantially scientific, technological, professional and related institutional capacities and the best available technologies to become full partners in achieving climatic security. They also deserve and require an international system that lends strong support to these efforts.<sup>58</sup>

Green economics is all about sustainability and social justice; finding and sustaining such means of creating wealth and allow us to meet the genuine needs of all people without damaging our fragile biosphere. It implies a straight choice between what we have now (a consumer economy) and what we will need in the near future (a conserver economy). It is no longer possible to manufacture abundance through making unsustainable demands on the world's resources and environment;

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57      ibid., p. 65.

58      World Meteorological Organization 1992, No. 772, Climate Change; Environment and Development World Leaders Viewpoints, Statement by Mr. Maurice Strong, Secretary-General of UNCED, p. xxi.

we must therefore substitute more appropriate patterns of consumption that will make for wiser use of both the world's resources and the human resources at our disposal.<sup>59</sup>

Reconciliation of the goals of development and of environmental quality is thus, essentially a reconciliation of values, i.e., change in attitudes toward population growth and economic priorities. The 'laws' of nature are unaffected by human choice, but human behaviour that disregard those "laws" invites environmental degradation and ultimately economic and ecological impoverishment. Humans cannot choose which laws of nature will or will not apply to human affairs, but humanity can choose goals and behaviours which will coincide with those natural tendencies that protect and enrich human life. Nature is not wholly beneficent, but it is nonetheless the foundation of human welfare, survival and opportunity. Sustainable development in any meaningful sense requires that the environmental life support system of the earth can be respected and that its self-renewing capabilities remain unimpaired.

### 2.3 Environmental Impact Assessment in the Developing Countries

In view of the extent of environmental destruction in the developing countries, it is necessary to make urgent use of all the instruments available in order to protect the environment and conserve the natural resources. However, the

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59 Jonathan, P., 1984 - Seeing Green: The Politics of Ecology, p. 126.

priorities both of the people there and of their governments are more often aimed at economic growth than environmental protection, due to low standards of living prevailing in these countries. How can this conflict of interests, could be resolved is an important task. One way to ensure that development takes place without destruction is use environmental impact assessment. Thus, it is essential that developing countries should undertake environmental impact assessment (EIA), at planning stage, and ensure that the results are incorporated firmly into the planning process.<sup>60</sup>

EIA can be considered to be a planning tool which assist planners in anticipating potential future impacts of alternative development activities, both beneficial and adverse with a view to selecting the "optimal" policy, which maximize beneficial effects and mitigates adverse impacts on the environment.<sup>61</sup>

The objectives of applying EIA in developing countries are as follows;

- to identify adverse environmental problems that may be expected to occur;
- to incorporate into development action appropriate mitigation measures;

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60 Wickramasinghe, R.H., Environmental Impact Assessment and Developing Countries, Marqa, 11(1), 1990, pp. 20-25.

61 Canter, L.W. (1977), Environmental Impact Assessment, p. 10.

- to identify the environmental benefits and disbenefits of the project, as well as its economic and social acceptability to the community;
- to examine and select the optimal alternative from the various relevant options available;
- to involve the public in the decision-making process related to the environment; and
- to assist all parties involved in development and environmental affairs to understand their roles, responsibilities and overall relationships with one another.<sup>62</sup>

The EIA comprises three sequential elements: identification, prediction and evaluation.

In identification, includes :

- description of the existing environmental system,
- determination of the components of the project.

In prediction,

- identification of the environmental modification that may be significant;
- forecasting of the quantity and/or spatial dimension of change in the environment identified;
- estimation of the probability that the impact will occur.

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62 Biswas, A.K. and Gu Geping, ed., 1987, Environmental Impact Assessment for Developing Countries, pp. 192-93.



In evaluation,

- the determination of the incidence of cost and benefit for user groups and population affected by the project,
- specification and comparison of the trade off (costs and effects being balanced between various alternatives).<sup>63</sup>

In short, EIA provides an important methodology for acquiring a clear understanding of the relationship between the economy, society and environment and offers positive measures for better harmonizing the relationship between economic development and environmental protection as well as an effective means for strengthening environmental planning and management.

EIA procedures have been successfully used in several developed countries during the past few decade, but only within the past few years or so has EIA has been introduced in developing countries, after a meeting of the "Expert Group on Environmental Impact Assessment in Developing Countries" held in Guangzhou, of China, 1983, has formulated the general guidelines EIA, where 68 developing countries participated.

The need to incorporate environmental considerations into the development process is now a generally accepted principle, in all developing countries. The question is no longer whether the principle is valid and applicable, but rather how it can be operationally incorporated in the

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63 Holling, C.A., ed., (1978), Adaptive Environmental Assessment and Management, p. 12.

development planning and management process.

Major changes have taken place in the attitudes and perceptions of developing countries to environmental problems and issues since last two decades. It is not generally recognized that it is both desirable and essential to pursue the short and long term developmental goals while simultaneously ensuring sound environmental management.

## Chapter 3

### STOCKHOLM CONFERENCE AND THE DEVELOPING COUNTRIES

- The Background of the Conference
- Preparation for Stockholm and Negotiation at Preparatory Meeting
- The Stockholm Action Plan
- Negotiating Strategy of the Developing Countries at Stockholm
- Assessment of Stockholm Conference
- Post-Stockholm Conference
- Conclusion

"Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on the planet a stage has been reached when, through the rapid acceleration of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights, even the right to life itself".

- Paragraph 1, Declaration on Human Environment, Stockholm 1972

## Chapter 3

### STOCKHOLM CONFERENCE AND THE DEVELOPING COUNTRIES

#### 3.1 The Background of the Stockholm Conference

The United Nations conference on the Human Environment marked the culmination of efforts to place the protection of the biosphere on the official agenda of international policy and law. Specific aspects of the environment had been the objects of international negotiations and arrangements, but the concept of the collective responsibility of nations for the quality and protection of the earth as a whole did not gain political recognition until the years immediately preceding the Stockholm conference. Stockholm enlarged and facilitated means toward international action previously limited by inadequate perception of environmental issues and by restrictive concept of national sovereignty and international interest.<sup>1</sup>

The worldwide explosion of environmental concern in the 1970's and recurrence in the later 1980's did not occur without causes and antecedents which influenced the substance and direction of international action.<sup>2</sup> The Stockholm conference in 1972, marked a watershed in international relations. It is the first real attempt on a global level to set down basic principles and agree on new forms of world

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1 Caldwell, L.K. (1991), International Environmental Policy: Emergence and Dimensions, p. 55.

2 Ibid., p. 1.

cooperation, was the culmination of a major effort on the part of many nations and committed individuals.<sup>3</sup> It legitimized environmental policy as a universal concern among nations, and also created a place for environmental issues on many national agendas, where they have been previously unrecognized.

The growth of international environmental cooperation during the 1970's and thereafter is an aspect of a larger social transition. It is an expression of a changing view of mankind's relationship to earth. Social scientists have called this new view of human life on earth the "new environmental paradigm". The term paradigm here represents people's assumptions regarding how the world works. The change marked by Stockholm is from the view of an earth unlimited in abundance and created for man's exclusive use to a concept of earth as a domain of life or biosphere for which mankind is a temporary resident custodian.<sup>4</sup>

The ratification of a number of international and regional conventions on matters relating to environment, in the 1970s, is an encouraging sign on the road of international cooperation. The interest governments have shown in environmental matters, demonstrated by the establishment of national environmental machineries in many countries and by the enforce-

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3 Erwan Fouere, *Emerging Trends in International Environmental Agreements*, in John E. Carroll, ed., 1986, *International Environmental Diplomacy*, p. 30.

4 Catton, W. and Dunlap, R. (1980), *A New Ecological Paradigm for Post-Exuberant Society*, p. 12.

ment of environmental protection measures, is further evidence of concern for environmentally-sound development.<sup>5</sup> /

Progress along the road to Stockholm was neither straightforward nor evenly paced. Significant steps in the development of international cooperation were taken after World War II with the establishment of United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 1945 and the International Union for Conservation of Nature and Natural Resources (IUCN) in 1948 and by the Biosphere Conference of 1968.<sup>6</sup> Major United Nations agencies (FAO, WHO, WMO) and IMCO, the Inter-governmental Maritime Consultative Organisation had well-established programmes by the start of the 1970s. The United Nations Economic Commission for Europe (ECE), other regional commissions, and non-UN bodies like the Organization for Economic Cooperation and Development (OECD) and EEC were active. Many nations had established departments of the environment or national environmental agencies. By the end of the 1970s regular statistics or reports on the state of the environment (or both) were being produced in many countries.<sup>7</sup>

The United Nations Conference on the Human Environment in 1972 extended international consideration to the social,

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5 Holdgate, M.W., Kassas, M. and White, G.F., ed., 1982, *The World Environment 1972-1982 - A Report by the United Nations Environment Programme*, p. xvi.

6 Caldwell, L.K. (1991), *International Environmental Policy*, pp. 22-23.

7 Holdgate, M.W., etc. (1982), *The World Environment (1972-1982)*, pp. 7-8.

political and economic factors that influence man-environment relationships, and so led to the establishment of international institutions with special responsibility for these matters. It may be premature to state that nations now generally recognize the need to protective management of human impact upon the biosphere, but practical necessities and cumulating scientific evidence are forcing often reluctant governments toward environmental cooperation. In retrospect, the international conservation efforts of the first three-quarters of the twentieth century may be viewed as a phase through which it was necessary to pass in order to obtain a foundation upon which international environmental policies might be established.<sup>8</sup>

### 3.2 Preparations for Stockholm And Negotiations at Preparatory Committee Meeting

Official initiation of the conference began with a letter dated 20 May, 1968 from the permanent representative of Sweden to the Secretary-General of the United Nations "on the question of convening an international conference on the problems of human environment".<sup>9</sup> The possibility of such a conference had been previously introduced by the Swedish delegation to the plenary session of the UN General Assembly

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8 Caldwell, L.K. (1991), International Environmental Policy, pp. 25-40.

9 UN, ECOSOC, E/446/Add.1 1968, in ECOSOC, Official Records, Forty-fifth Session. (Collection from U.N. Information Centre Library, New Delhi).

on 13 December 1967.<sup>10</sup> The Swedish proposal was referred to ECOSOC for consideration, and the UN Secretariat prepared a short paper outlining the activities of the UN and programs relevant to the human environment.<sup>11</sup> On July 30, 1968 ECOSOC adopted Resolution 1346 (XLV) which requested that the United Nations proceed with plans for a conference. The resolution stated that the Council:

1. Recommends that the General Assembly at its twenty-third session, consider, ... the desirability of convening a United Nations Conference on problems of the human environment, taking into consideration, inter alia, the views expressed during the forty-fifth session of the ECOSOC ... and the results of the Intergovernmental Conference of Experts, on the scientific basis for rational use and conservation of the resources of the biosphere.
2. Consider that, in order to assure the success of a conference, should its convening be decided by the General Assembly, detailed and careful preparations would be necessary ....
3. Proposes to the General Assembly that it include in the agenda of its twenty-third session an item entitled, "the problems of human environment".<sup>12</sup>

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10 U.N. General Assembly, Official Records, Twenty-seventh session.

11 U.N., "Report of the Secretary-General, E/4553, 11 July, 1968.

12 Information letter of United Nations Conference on the Human Environment, Stockholm, 5-16 June 1972, UN Release, pp. 3-4.



On 3 December 1968, the UN General Assembly took up agenda item - 91, "the problems of the human environment", and after generally supportive discussion adopted Draft Resolution 2398 (XXVIII) without opposition, thereby setting in motion the preparatory efforts leading to the conference to be held in Stockholm, Sweden from 5-12 June, 1972.

The resolution of 3 December 1968 seems certain to be a conceptual milestone in the history of the relationship between man and his environment, marking a worldwide recognition that, in the words of resolution, there was "need for intensified action at the national, regional and international level in order to limit and, where possible, to eliminate the impairment of the human environment and ... to protect and improve the natural surroundings in the interest of man ...."<sup>13</sup> Thus, the question whether or what extent nations would surmount their differences to meet this need was placed on the agenda of world politics.

✓ The objectives of the conference stated in the resolution were "to provide a framework for comprehensive consideration within the United Nations of the problems of the human environment in order to focus the attention of the governments and public opinion on the importance and urgency of this question and also to identify those aspects of it that can only, or at best be solved through international cooperation and agreement, bearing in mind the particular importance of

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13 Ibid., pp. 5-6.

enabling developing countries to forestall the occurrence of such problems."<sup>14</sup> Following the endorsement of ECOSOC the report was brought before the General Assembly, which by Resolution 2581 (XXIV) on 15 December 1969 established the Preparatory Committee (PREPCOM), whose words would be essential to the success of the Stockholm Conference.<sup>15</sup>

The participants to this conference include all member states of the United Nations. The twenty-seven nation preparatory committee together with alternates and advisors, was too large actually to organize the conference. Therefore a special staff was appointed under the direction of Maurice Strong, an official of the government of Canada, who was also designated as Secretary-General of the Conference. Under Strong's clear-focused and energetic leadership, preparations for Stockholm proceeded with a thoroughness unknown to previous international conferences. The members of the preparatory committee include countries from all sub-continent.<sup>16</sup>

The symbolic value of the Stockholm Conference could be very great, but its practical accomplishment would heavily depend upon the preparatory work preceding it. The important agreements among nations would have to be achieved prior to

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14 U.N. Secretary-General, "Problems of the Human Environment: Report of the Secretary-General", S/4667, 26 May 1969, Summarizes activities and programs of U.N. bodies relative to the human environment.

15 Information letter of UNEP - 1972, U.N. Release, p. 8.

16 Ibid., pp. 9-10.

Stockholm. A number of intergovernmental working groups were organized to develop proposals and bases for agreement on the major items of an agenda. One group was to prepare a draft of a Declaration on the Human Environment (membership identical to the full (PREPCOM), and there were additional groups on marine pollution, soils, conservation and monitoring and surveillance.<sup>17</sup>

The first session of the preparatory committee was held at U.N. headquarters in New York, 10-20 March, 1970. The discussion revealed substantial consensus on the characteristics and seriousness of environmental problems, but the complex diversity in the ways in which these problems had arisen in various countries was seen as complicating the protective task.<sup>18</sup>

The second session of the preparatory committee held in Geneva, 8 - 19 February, 1971 considered a proposed agenda for the conference culminating in the adoption and signature of a Declaration on the Human Environment. The proposed agenda consisted of six main subjects, consideration of which was divided among three principal committees and which were subsequently the principal working divisions of the Stockholm conference. The subjects were:

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17 U.N. Conference on the Human Environment, Information Letter, June 1971, pp. 3-4.

18 U.N. General Assembly, "Reports and other Documents of the Preparatory Committee for the United Nations Conference on Human Environment", First session, New York, 10-20 March, 1970, A/Conf. 48/PC/6.

- planning and management of Human Settlements for Environmental Quality;
- environmental aspects of natural resources management; natural resources are broadly defined as animal, botanical and mineral resources;
- identification and control of pollutants and nuisances of broad international significance (manufacture, transportation, energy, hydrosphere, atmosphere and lithosphere);
- educational, informational, social and cultural aspects of environmental issues;
- development and environment, including environmental policies as a component of comprehensive planning in the developing countries;
- international organizational implications of action proposals, including reviews of existing international organizations, activities dealing with environmental issues and considerations of alternative means of meeting the needs of the United Nations system.<sup>19</sup>

On the international scene, the International Council of Scientific Unions (ICSU) and the International Union for Nature and Natural Resources (IUCN) were especially active in efforts to influence the conference agenda. In the United States non-governmental organizations were busy developing

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19 Prepcom Report of UNCHE - 1972, A/Conf./48/PC/9.

position papers and arousing public interest.<sup>20</sup>

One of the more important preconference meetings was the PREPCOM-sponsored study on environment and development undertaken by a panel of twenty-seven experts in economics, development planning, banking, social research, and ecology, held at Founex, Switzerland, in June, 1971. This meeting began to clarify the links between environment and development, destroyed the false idea that they were necessarily incompatible, and began to convince the representatives of the developing countries that environmental concerns were both more widespread and more relevant to their situation than they had appreciated.<sup>21</sup>

Another link was forged by the recognition that many problems confronting developing countries had been encountered earlier by developed countries, whose mistakes could be avoided. At Founex and Stockholm the phrase "the pollution of poverty" came into use to describe the worst of all the world's environmental problems, and it was recognized that the skills of all nations were needed to tackle it.

The Founex meeting thus began to bridge the gap in understanding. There was general recognition that virtually all countries needed to undergo further development, so that

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20 Caldwell, L.K. (1991), International Environmental Policy: Emergence and Dimensions, p. 52.

21 Development and Environment; Report and Working Papers of a panel of experts convened by the Secretary-General of UNCFE, at Founex, Switzerland, June 4-12, 1971.

sound approaches to environmental planning and management would be required everywhere. Environmental concerns should not be a barrier to development, but should be a part of process, since development that is sound environmentally, is also likely to be enduring and to avoid unforeseen and unwelcome side effects. "ECO development" - a word coined to describe this process of ecologically sound development, a process of positive management of the environment for human benefit - emerged as a central theme from Stockholm.<sup>22</sup> Founex helped to alleviate some of the third world misgivings concerning their developmental aspirations. It also set terms for the debate over relative priorities of ecology and economics that has continued to the present, reconciled in some measure by the concept of sustainable development. These redefined concepts made the Stockholm conference more attractive to developing countries.

A listing of all official, quasi-official and unofficial meetings preparatory to the Stockholm Conference would be very extensive and impossible to compile without risk of significant omissions. In addition to international gatherings, meetings were organized within countries in which environmental awareness had become high. In developed as well as developing countries public participation was very crucial impetus to Stockholm conference. The consequences of this pre-conference activity may have had a more extended and lasting significance than did the actual conference itself. Certainly with respect

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22 Ibid., pp. 20-30.

to the state of the earth and man's environmental relationships the years 1968 to 1972 witnessed a worldwide raising of consciousness for which there appears to have been no precedent.

The PREPCOM held its third session in New York in September 1971 with the draft Declaration on the Human Environment being a major item on the agenda. On 23 December 1970 the Secretary-General had invited governments to comment on the possible form and contents of a draft declaration that one of the intergovernmental working groups had been assigned the task of preparing for consideration by the full preparatory committee. There was substantial agreement among committee members that the declaration should be a document of universally recognized fundamental principles, recommended for action by individuals, national governments, and the international community. Preconference approval of the declaration was accomplished at the fourth session of the PREPCOM, 6-10 March, 1972, at which final arrangements for the conference were ratified.<sup>23</sup>

The preparatory work had been comprehensive and thorough - four years and the tireless efforts of hundreds of people in nearly all parts of the world having been enlisted in the action. The scene now shifted to Stockholm where the Swedish government and the conference secretariat were already engaged in completing the extensive physical arrangements that a

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23 Information Letter of UNCFE, Prepcom Reports, Third Session, 1971, A/Conf.48/PC/13.

meeting of this character required, especially in view of the political, social and ideological tensions associated with the environmental issue in its international dimension.

### 3.3 The Stockholm Action Plan

On 5 June 1972, after more than two years of extensive preparation, the United Nations conference on Human Environment opened its first plenary session at the Royal Opera House in Stockholm. In addressing the conference, Olaf Palme, Prime Minister of Sweden, declared that his government attached "the greatest importance to the stress laid in the declaration upon the need for development". He found it "an inescapable fact that each individual in the industrialized countries draws, on the average, thirty times more heavily on the limited resources of the earth than his fellow man in the developing countries. He concluded that "these simple facts inevitably raise the question of equality of more equal distribution between countries and within countries."<sup>24</sup> Palme's highly selective examples of ecological and economic exploitation by the industrialized countries, particularly by the United States, set the tone of much of the debate in plenary sessions of the conference.

For the 114 governments represented at Stockholm to have agreed generally on a declaration of principles (see Annexure 5 - the 26 principles adopted in Stockholm conference),

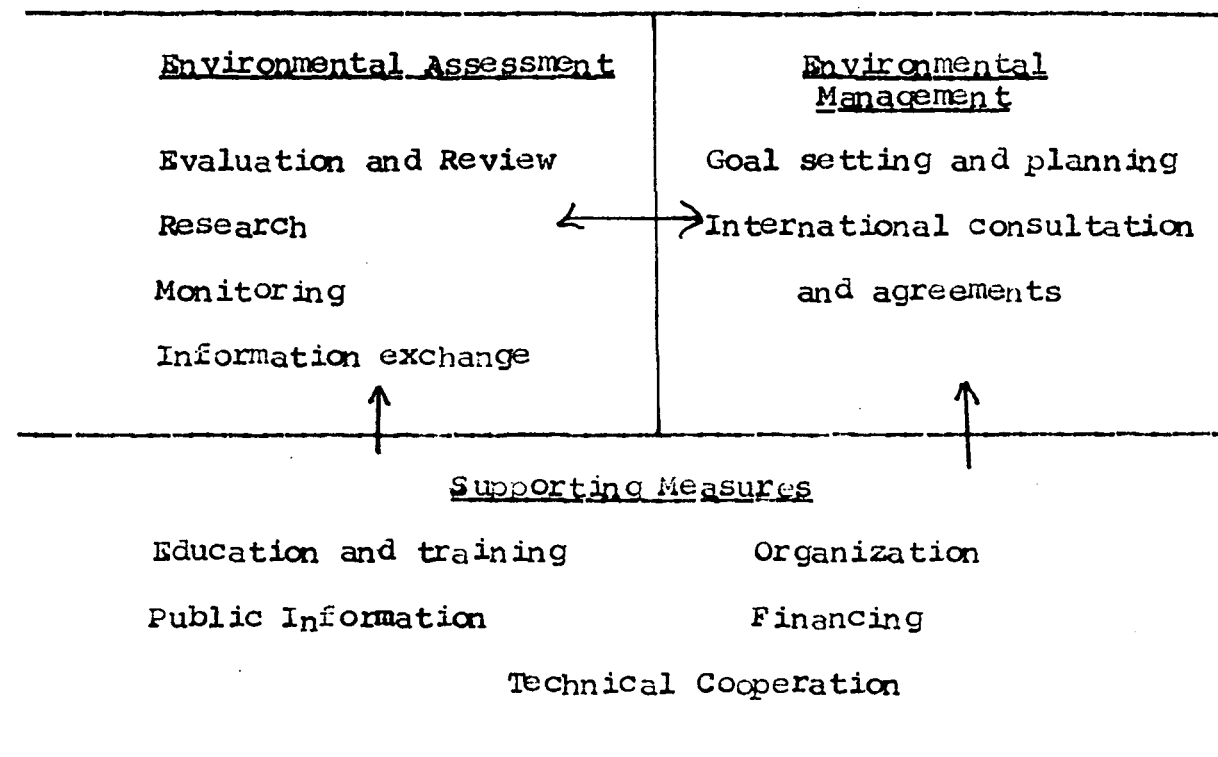
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24 Caldwell, L.K. (1991), International Environmental Policy, p. 57.



and an action plan was a remarkable accomplishment.

Figure 3.1 The Framework of the Stockholm Action Plan (25)



The report of the conference (Action Plan) submitted to the United Nations General Assembly in 1972 and endorsed in General Assembly Resolution 2994 (XXVII). The recommendations in the plan fell into three groups concerned respectively with environmental assessment, environmental management and supporting measures (in the Figure 3.1).

The first, (the 'Earthwatch function') demanded a process of evaluation and review, providing a world 'intelligence service

25 Holdgate, M.W., Kassas, H., White, G.F., ed., 1982, The World Environment 1972-1982, A Report by the United Nations Environment Programme, pp. 8-9.

describing the state of the world environment, and providing a means of international exchange of knowledge of environmental situations, problems and management techniques. For this reason one of the key components was seen to be an International Referral System (now called INFOTERRA), to be designed as a kind of switchboard. The surveillance of the environment was to be the concern of a Global Environmental Monitoring System (GEMS), again conceived as a network, drawing upon the information many governments collected for their own purposes and assembling the data to give a coherent picture of regional or global trends. The process of information-gathering and evaluation was recognized as the heart of the earthWatch function of United Nations Environment Programme (UNEP).<sup>26</sup>

The second area, Environmental Management, had as its broad objective the development of comprehensive planning and the protection and enhancement of the environment for future generations. Action to protect oceans and seas of the world against pollution was given priority.

The third area, of supporting measures, had three components. The first was education, training and public information, for it was recognized that there was great need for specialists, multi-disciplinary professionals and technical personnel in many countries. The second subject was organizational arrangements and the third financial and other forms of assistance.<sup>27</sup>

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26 Ibid., p. 10.

27 Ibid., p. 11.

These activities were to constitute the U.N. Environment programme, and it is important to stress that this programme was conceived of as drawing together and giving added strength to the environmental activities of the whole United Nations system. To service the programme the Stockholm Conference recommended the establishment of a small United Nations Environment Secretariat and this was endorsed by the General Assembly in Resolution 2997 (XXVII) which established a fifty-eight nation governing council for the programme, a Voluntary Environment Fund, and an Environment Coordination Board under the Chairmanship of the Executive Director of UNEP to ensure cooperation and coordination among all U.N. bodies. By resolution 3004 (XXVIII) the General Assembly decided to locate the UNEP Secretariat in Nairobi, Kenya.<sup>28</sup>

#### 3.4 Negotiating Strategy of the Developing Countries at Stockholm Conference

In Stockholm conference, it was evident, however, that not all national governments and not all people would agree that environmental protection should receive a high priority on the agenda for international action. Moreover, among those who agreed that an environmental crisis had been reached, there were differences of viewpoint regarding its causes and what should be done about them. Thus, the convergence of concern was accompanied by a divergence of opinion, particularly

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28 Ibid., pp. 11-12.

among the socialist and third world countries. Because environmental concern was strongest among the more developed nations, suspicions arose among third world countries that the movement concealed a neo-imperialist scheme to regard their economic growth and to keep them subservient suppliers of underpriced raw materials and consumers of the industrial output of developed countries.

There is emulation among nations as among people. Rhetoric of resentment among third world nations coexisted with conspicuous and too often uncritical emulation of the industrialized first world. Not all third world leaders favoured replicating the West, and for some of them the harsh impact of Western industrialism on the environment was something to be avoided. For example, Julius Nyerere of Tanzania rejected both Western and Soviet style of industrialization, favouring an indigenous essentially rural economy.<sup>29</sup>

Indira Gandhi, Prime Minister of India, found "poverty the greatest pollutor". She declared that: "many of the advanced countries of today have reached their present affluence by their domination over other races and countries, the exploitation of their own masses and own natural resources. They got a head start through sheer ruthlessness, undisturbed by feeling of compassion or by abstract theories of freedom, equality or justice." She expressed the sentiments of many

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29 Caldwell, L.K. (1991), International Environmental Policy, pp. 48-49.

developing countries leaders when she said, "How can we speak to those who live in the villages and in the slums about keeping the oceans, the rivers and the air clean, when their own lives are contaminated? Are not the poverty of the poor and the greed of the rich, the greatest polluters?"<sup>30</sup>

Mrs. Gandhi's reading of history was widely shared among third world representatives and expressed most violently by the Maoist spokesman of the People's Republic of China. Even the more moderate third world delegates such as Helena Z. Benitaz of the Philippines emphasised the injustice theme, asserting that : "A past age of domination has left in many countries of the so-called third world ... stunted and malformed economies perpetuating to this day the poverty of blighted, stagnant and benighted rural communities."<sup>31</sup>

Throughout the Stockholm conference, the developing countries representatives repeatedly emphasized the absolute sovereign discretion of their governments in disposing of their natural resources in whatever way they chose. Logically the proposition should also apply to developed countries. But the prospect that developed countries might reduce their imports from developing countries as a consequence of conservation or environmental protection measures and through

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30 "What Happened at Stockholm - A Special Report", Science and Public Affairs, Bulletin of the Atomic Scientists, 28 Sept., 1972, pp. 44-48.

31 Ibid., p. 56.

development of synthetic products and substitutes was viewed with alarm and regarded as an injustice for which "appropriate measures for compensation should be worked out".

The developing countries also demanded additional financial and technological flow from developed countries for their development and bearing in mind their priorities and the need to safeguard and improve the environment. The third world representatives argued for development as a necessary precursor of environmental protection - as necessary to provide an economic base from which environmental protection measure could be financed. But with growing awareness of the connection between uses of technology and environmental damage, development of conserving or appropriate technologies was gaining interest among many developing countries leaders.<sup>32</sup>

The developing nations were able to change the location of UNEP Secretariat from what had been believed to be its probable site in Geneva to Nairobi, Kenya. (under U.N. General Assembly Resolution 3004).

### 3.5 Assessment of Stockholm Conference

The accomplishments of United Nations Conferences have generally been impressive. Their outputs have tended to be heavily rhetorical. Characteristically their resolutions are ambiguous compromises among conflicting ideologies, and in the years after Stockholm they have tended to become

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32 Information Letter of UNCHE, vol. 6, 1972.

vehicles for the complaints of the developing nations against developed nations.

The positive elements in these conferences have been:

- stimulation of awareness of issues affecting all or most nations,
- opportunity for airing grievances and revealing hidden tensions, and
- obtaining agreement among nation-states sufficient to afford a basis for cooperative action, including research and institutional arrangements.

The negative elements have been:

- opportunities for inflammatory rhetoric and distortion of issues for purposes of propaganda,
- a tendency to compromise issue to a point of inaction, and
- uncertainty regarding the ability of governments to honour conference commitments.<sup>33</sup>

Particularly for the last reason, some institutionalized follow-up has been essential to the success of most international conferences. Establishment of the United Nations Environment Programme (UNEP), and Environment Fund was indispensable to a productive consequence of the Stockholm conference. Unwilling to recommend a major new organization for the environment having special agency status, the

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33 Harold H. Leich (1973), *The Environment Conference at Stockholm*, pp. 112-19.

Stockholm conference provides a special body within UN Secretariat to stimulate, assist and coordinate the international protective efforts. This institution, established by U.N. General Assembly Resolution 2993 (XXVIII), 1972, December 15. Its role is best described as 'catalytic', its program initiatives are largely carried on by other organizations, with UNEP providing functions of coordination, information, and reporting. UNEP has provided a forum acceptable to the third world countries for examining their mutual problems free from suspicion of solutions imposed by the first world.<sup>34</sup>

The politics of UNEP has been somewhat eased as the developed countries have sought their international environmental objectives through other organizations, such as NATO, OECD and European Community, leaving UNEP to concern itself largely with environmental problems of the third world or those that require a North-South dialogue. At its inception in 1973 there was danger in its being ignored by the old-line U.N. agencies, and that the so-called North-South tensions among the developed and developing nations would polarize UNEP or dissipate its very limited resources. But with the passing of time, UNEP appears to have established itself within the U.N. system and has to some extent alleviated North-South tensions in which environment and development appeared to represent conflicting values.

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34 Caldwell, L.K. (1991), International Environmental Policy, pp. 74-75.



The Stockholm action plan, eventually lead to a unified political order for the biosphere, one may identify four ways in which novelty characterized the influence of Stockholm on international relations. There were significant elements of innovation in:

- the redefinition of international environmental issues,
- the rationale for cooperation,
- the approach to international responsibility, and
- the conceptualization of international organizational relationships.

Rhetoric flourished at Stockholm, but the UNCHE differed from other U.N. conferences in its initiation of a sequence of positive measures that have translated published resolutions into actual accomplishments. This positive outcome has been the principal distinguishing feature of the Stockholm conference, and was the result of four factors which at least in degree made this conference different from the others. First, the conference from its preparatory stage was action oriented; it was intended by its managers to lead to positive results and not merely to statements of principles.

Second, the preparation of the conference were extensive and thorough, with sufficient time to obtain agreements and to resolve or manage the more dangerous political differences. Accommodation among political viewpoints did not necessarily imply agreement, but rather that respective parties understood their differences and were able to find compromises that would avoid disruption of the conference.

Third, popular interest and support reinforced the sense of the necessity for the conference and its action orientation, even though their direct influence upon the delegates at Stockholm was not great. The presence of non-governmental organizations (NGOs), has become common to all U.N. conferences, but the number, variety and attendance at Stockholm was exceptional. Various peoples forum and environmental forum also present there. The information media - using photographic film, radio, television, cheap printing, and low international air fares - made possible a degree of communication, shared purpose and a visible presence that had never previously characterized high-level international conferences. The unofficial assembly of ecologically concerned youth, radicals, scientists, and conservationists from around the world was more than facetiously described as "Woodstockholm" - a ritual celebration of an emotional commitment to a new orientation towards life and on earth.

Fourth and finally, the success of the conference in achieving a positive outcome owed much to skill management before, during and after it. The leadership of the conference Secretary-General, Maurice Strong was consistently directed toward holding the collective effort together and focussing its deliberations on positive outcomes. The continuity of his coordinative role both in the preparatory phases, at Stockholm, and subsequently as the first executive director of the UNEP must surely be counted as a major factor in its success.

It could be concluded that the Stockholm conference is a major landmark in the effort of nations to collectively protect their life-support base on earth.

### 3.6 Post-Stockholm Assessment

Perceived national interest rather than the Stockholm Declaration of principles or the interventions of UNEP has been the prime mover of international environmental cooperation. Separate roles have been played by other international organizations, such as OECD, EEC, NATO, ICSU and IUCN, but the UNEP as an activator of the Stockholm Action Plan has given the international environmental movement a universality, a legitimacy, and an acceptability in third world countries which under the circumstances could hardly have been obtained otherwise.<sup>35</sup>

Maurice Strong's assessment one year after Stockholm is still valid: "Environmental actions taken to date are still of fairly marginal significance compared with those yet to be confronted. The difficult choices - about the imbalance created by man's activities, about equity in the use of common resources, about the sharing of power both within national societies and internationally about the fundamental purposes of growth and the sharing of its benefits as well as its costs remain to be made."<sup>36</sup>

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35 Ibid., p. 83.

36 Foreign Affairs, "The Stockholm Conference", July, 1973, p. 690.

National governments determine if, how, and when the Stockholm recommendations are implemented. Post-Stockholm efforts to extend international law by conventional methods have been slow to yield positive results. The NGOs urged the UNEP Governing Council to push the ratification of four major conventions negotiated during or after the Stockholm conference. The four were as follows:

- convention on the protection of the World Cultural and Natural Heritage, Paris, 1972,
- convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter, London, 1972,
- convention on International Trade in Endangered species of Wild Fauna and Flora, Washington, 1973,
- convention on the Prevention of Pollution from Ships (MARPOL), London, 1973.

These treaties had been negotiated with considerably difficulty, but also with sustainable international support. But once open for ratification, the nations were not in hurry to act - low priority rather than domestic opposition being the usual retrading factor.<sup>37</sup>

A decade after Stockholm three of these treaties were at least technically in effect, but the convention on the prevention of pollution from ships did not come into force until 2 October, 1983, one year after it had received the

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37 Caldwell, L.K., 1991, International Environmental Policy, pp. 84-85.

required number of ratifications. It has been described as "the most important and comprehensive treaty to fight marine pollution".

Only modest success was achieved with several additional treaties, some of which were negotiated prior to Stockholm or apart from UNEP. There were twelve important treaties which were signed and ratified from 1972 to 1990.

The politicizing of the international environmental movement following Stockholm was to some extent inevitable. Obviously important interests and values are affected by changes or innovations in environmental policies. There is evident in many countries a disenchantment with government and international organizations, in part because of failure to honour commitments or to get things done without seemingly interminable maneuvering and delay. Further, governments and some international agencies are mistrusted because of environmentally destructive policies that they have historically pursued. Nevertheless, given sufficient time it appears that rational consensus can not necessarily will be achieved in international bodies and a conceptual basis established upon which more effective environmental action can be taken.

The overall achievement of international environmental policy in the post-Stockholm decade, was slightly paraphrased from "The Environment in 1982 - Retrospect and Prospect" provides a concise yet specific summation of the progress under Action Plan,

... the United Nations Conference on Human Environment was a powerful force for change, which led to two major achievements of a general nature:

- Awareness of the significance of the environment and of the implications of environmental change increased substantially at the policy-making level (Governments and legislatures) and among the public at large;
- New environmental programmes were created at all levels (international, regional and national), and existing programmes were intensified, extended and accelerated.

... Following were the major achievements in terms of functional components of the Action Plan, i.e. assessment, management and supporting measures.<sup>38</sup>

The Stockholm resolutions were a Charter for a revolution in national and international values, and behaviour. It would be unrealistic to expect that, in no more than a decade of post-Stockholm effort, the priorities of the national governments would be redirected and the erosive effects of overpopulation, overconsumption, poverty, socio-economic disturbances and reluctance to commit today's resources to preventing tomorrow's problems would be overcome. Nevertheless significant changes had occurred at national levels during the decade, and these may be more reliable indicators by the future of international environmental policies than

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38 Holdgate, M.W., Kakassas, M., White, F.G., (1982), The World Environment 1972-1982, A Report by the United Nations Environment Programme.

in current implementation of the Action Plan. In a world of nation-states, the ultimate results of any international effort depend upon what national governments actually do. Changes in popular perspectives on man-environment relationships could thus be precursors of impending changes in national policies.

## Chapter 4

### U.N. OZONE DIPLOMACY AND THE DEVELOPING COUNTRIES

- Global Concern on Depletion of Ozone Layer - The Concept of Ozone Layer Depletion
- Diplomatic Initiatives of UNEP to Protect Ozone Layer Depletion
- The Vienna Convention 1985
- The Montreal Protocol 1987
- The London Revision 1990
- Diplomatic Strategy of the Developing Countries
- Conclusion

... this most excellent canopy, the air, look you,  
this brave o'erhanging firmament, this majestical  
roof fretted with golden fire, why, it appeareth  
nothing to me but a foul and pestilent congregation  
of vapors.

- Shakespeare, Hamlet, Act-II,  
Scene - 2



## Chapter 4

### U.N. SPONSORED CONVENTION ON SUBSTANCES THAT DEplete OZONE LAYER AND THE DEVELOPING COUNTRIES

#### 4.1 Global Concern on Depletion of Ozone Layer

✓ The existence of a ozone hole was discovered way back in the 1970s. However, it is only in recent times that the real magnitude of the problem has been assessed. Widespread concern about the likely impact of the rapid disappearance of this protective layer of gas has prompted many developed and developing countries to take hard and serious look at the problem. The problem of protecting the stratospheric ozone layer presented an unusual challenge to diplomacy.)

#### The Concept of Ozone Layer

Ozone is a form of oxygen in which the molecules have three atoms, rather than the customary two, and has been described as "the most important chemically active trace gas in the earth's atmosphere".<sup>1</sup> This significance derives from two singular properties. First, certain wavelengths of ultra-violet radiation are absorbed by the very thin "layer" of ozone molecules surrounding earth, particularly in the upper part of the atmosphere known as stratosphere, approximately 6 to 30 miles above the surface. If these biologically active ultra-violet (UV-B) lightwaves were to reach the planet's surface in excessive quantities, they could damage and cause mutations

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1 Albritton, D.L. (1987), Stratospheric Zone, p. 1.

in human, animal and plant's cells. Second, the distribution of ozone throughout different altitudes could influence the temperature structure and circulation patterns of the stratosphere and thus have major implications for climate around the world.<sup>2</sup> It is no exaggeration to conclude that the ozone layer as currently constituted, is essential to life as it has evolved on earth.

### What is Ozone Depletion

About 78 per cent of the atmosphere is nitrogen gas and 21 per cent is oxygen. Both these gases exist as two-atom molecules. The ultraviolet rays from the sun break up some of the oxygen molecules, realising oxygen atoms. These atoms recombine to form a three-atom molecule of oxygen called ozone.<sup>3</sup>

Ozone, being highly reactive combines with another chemical, nitrous oxide present in the stratosphere. Thus in this layer, ozone is continuously created and destroyed by the sun's radiation. However, an imbalance (more destruction than creation of ozone) is created when chlorine atoms, released from the earth, react with the ozone molecules. These chlorine atoms, suspected to be released from the man-made chemicals such as CFCs (chloroflourocarbons) waft into the atmosphere. When they reach the ozone layer, which takes 50 to 100 years, the chlorine atoms break down the bonds holding the three

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2 UNEP, The Ozone Layer (Nairobi, 1987), pp. 8-9.

3 Suresh, N., What is Ozone Layer, in Times of India, New Delhi, 22 July, 1990.

atoms of ozone. The chlorine is converted into chlorine monoxide and oxygen gas is released. This loss of ozone molecules is what is called as depletion of ozone layer. When this happens, the ozone layer's capacity to filter out the harmful ultra-violet rays from the sun decreases.

This happens especially near the poles in spring. Here the prevailing low temperature of the stratosphere makes the ozone more vulnerable to reaction with chlorine. As a result, even small amounts of chlorine which waft to these heights can cause immense damage to the ozone layer. In the normal course, the nitrous oxides destroy the ozone-cater chlorine monoxide and prevent depletion of the layer. However, in the sub-zero temperature at the stratosphere, above the polar regions, these nitrogen oxides freeze to form ice clouds. And chlorine monoxide accumulates. With increasing dilution of the ozone, it thins and a hole appears.<sup>4</sup>

The phenomenon, which has been occurring for a long time, was not known to the world till 1974. In that year, an American Scientist Dr. Sherwood Rowland and his research associate Dr. Mario Molina at the University of California, became infriended with some peculiar properties of a family of widely used anthropogenic chemicals, the CFCs. Molina and Rowland discovered that, unlike most other gases, CFCs are not chemically broken down or rained out quickly in the lower atmosphere but rather, because of their exceptionally

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4 Ibid., p. 8.

stable chemical structure, persist and migrate slowly upto the stratosphere. Depending upon their individual structure, different CFCs can remain intact for many decades to several centuries. The two researchers concluded that CFCs are eventually broken down by solar radiation and in the process release large quantities of chlorine into the stratosphere.<sup>5</sup> The findings confirmed by other studies, became public only in 1975. As a result, aerosols, which use CFCs are a propellant, were banned in the U.S. and some European countries. Nothing much happened for the next 10 years and the chemical industry also gave up its plans to develop substitute for CFCs.

CFCs, a group of synthetic chemicals, were developed in 1930 by Dr. Thomas Midgley for Du Pont General Motors combine for their refrigeration purposes. Earlier, they were using ammonia or sulphur dioxide which were toxic and corrosive. Because CFCs vapourize at low temperatures, they are energy-efficient coolants in refrigerators and air-conditioners, as well as effective propellants in spray containers for cosmetics, household products, pharmaceuticals, and cleaners (CFC-11 and CFC-12). They are also excellent insulators and are standard ingredients in the manufacture of a wide range of rigid and flexible plastic-foam materials. Their non-reactive properties make them seemingly perfect solvents for cleaning microchips and telecommunications equipment and for use in a myriad of other industrial equipment (CFC-113).

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5        Benedick, R. (1991), *Ozone Diplomacy - The New Directions in Safeguarding the Planet*, p. 10.

Emissions of carbon dioxide (through fossil fuel combustion and deforestation) and CFCs are also influenced by industrial and energy policies, along with population-related demand. The increase of nitrogen compounds in the atmosphere is affected by such factors as agriculture (fertilizers), industry (steel mills), and transportation (automobiles and aircraft). Thus, the ozone-depletion theory began by the late 1970s to assume much more complicated dimensions. Various model projections of global-average ozone depletion 50 to 100 years in the future began at about 15 per cent in 1974, fell to around 8 per cent in 1976, climbed again to almost 19% in 1979, and then dropped steadily to only about 3 per cent by 1983. These swings began to affect the credibility of the science and to dampen both public and official concern about the urgency of the problem.<sup>7</sup>

#### A Landmark International Report

In late 1984, in a conscious effort "to provide governments around the world with the best scientific information currently available on whether human activities represent a substantial threat to ozone layer", a remarkable cooperative international scientific venture was launched. This integrative research was cosponsored by NASA, NOAA, the U.S. Federal Aviation Administration, the UNEP, WHO, the West German ministry of Research and Technology, and the EEC.<sup>8</sup>

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7        *ibid.*, p. 12.

8        Lydia Dotto and Schiff, H. (1978), *The Ozone War*, p. 15.

Coordinated by NASA, the work occupied approximately 150 scientists of various nations over a year. The result, published by WMO and UNEP in 1986, was the most comprehensive study of the stratosphere ever undertaken. A major finding of the WMO/UNEP report was that accumulations of CFCs-11 and 12 in the atmosphere had nearly doubled from 1975 through 1985. Since actual production of these chemicals had stagnated over this period, these measurements confirmed the existence of a potential for large future increases in stratospheric concentrations of these long-lived substances, particularly if the growth rate of their emissions were to resume.<sup>9</sup>

The WMO/UNEP assessment predicated that continued emissions of CFCs 11 and 12 at the 1980 rate could, through release of chlorine in the stratosphere, reduce the ozone layer in by about 9 per cent on a global average by the last half of the 21st century, with even greater seasonal and latitudinal declines. As a result, higher levels of biologically harmful ultraviolet radiation could reach heavily populated regions of the Northern Hemisphere.<sup>10</sup>

The models further agreed that high atmospheric concentrations of chlorine could result in a potentially significant redistribution of ozone, with depletion in the upper stratosphere partially offset by increases in ozone at lower altitudes.

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9 World Meteorological Organization, *Atmospheric Ozone*, 1985, p. 4.

10 *Ibid.*, Chapter 13.

This development could have major, if not fully understood, implications for global short-term weather, and long-term climate. In addition, the findings confirmed that CFCs themselves were thousands of times more powerful than carbon dioxide in their heat trapping capability and therefore could significantly aggravate the greenhouse warming effect.<sup>11</sup>

The study indicated that, the ozone layer was threatened not only by CFCs 11 and 12, which had been the original focus of international scientific concern, but also by other fully halogenated alkanes, which included the related CFCs 113, 114, and 115 and two bromine compounds, halons 1211, 1301, and 2402, and HCFCs - 22, 123, 124, 141b, and 142b. All these chemicals shared the properties of long atmospheric lifetimes and high efficiency in triggering the catalytic reactions that destroy ozone, but they were not yet included into the predictive models because of insufficient data.<sup>12</sup> (See Table 4.1 - Ozone Depleting and Related Substances: Characteristics and Uses).

#### The Antarctic Ozone Hole

Too late for analysis under WMO/UNEP assessment, British scientists in 1985 published astonishing findings based on a review of land-based measurements of stratospheric ozone made at their Halley Bay Station in the Antarctic. They find

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11 Ibid., Chapter 13.

12 Ibid., Chapter 12.

Table 4.1

## Ozone-Depleting and Related Substances; Characteristics and Uses

Ozone depletion potential (ODP), chlorine loading potential (CLP), and global warming potential (GWP) are index numbers developed by scientists, expressed in relation to CFC 11 (which is arbitrarily assigned a value of 1). The higher the value, the more environmentally detrimental the chemical.

Substances	Ozone depletion potential	Chlorine loading potential	Global warming potential	Atmospheric lifetime (years)	1986 world consumption (1000 metric tons)	Current and potential uses <sup>a</sup>
<i>Substances controlled at Montreal</i>						
CFC 11	1	1	1	60	411	A, PF, R, S
CFC 12	1	1.5	3	120	487	A, AC, PF, R
CFC 113	0.8	1.1	1.4	90	182	A, R, S
CFC 114	1	1.8	4	200	15	A, PF, R
CFC 115	0.6	2	7.5	400	15	A, R
Halon 1211	3	0	n.a.	25	18	FF
Halon 1301	10	0	n.a.	110	11	FF
Halon 2402	6	0	n.a.	n.a.	1	FF
<i>Other substances</i>						
CT	1.1	1	0.3	50	1,116	CF, P, S
MC	0.15	0.1	0.02	6	609	A, Ad, P, S
HCFC 22	0.05	0.14	0.4	15	140	A, AC, PF, R
HCFC 123	0.02	0.02	0.02	2	n.y.p.	A, PF, R, S
HCFC 124	0.02	0.04	0.1	7	n.y.p.	A, AC, PF, R
HCFC 141b	0.1	0.1	0.1	10	n.y.p.	A, PF, R, S
HCFC 142b	0.06	0.14	0.4	20	n.y.p.	A, AC, PF, R, S
HFC 125	0	0	0.6	28	n.y.p.	R
HFC 134a	0	0	0.3	16	n.y.p.	A, AC, PF, R
HFC 143a	0	0	0.7	41	n.y.p.	R
HFC 152a	0	0	0.03	2	n.y.p.	AC, R

Sources: Ozone depletion potentials, global warming potentials, and atmospheric lifetimes: WMO, *Scientific Assessment of Stratospheric Ozone: 1989*, Global Ozone Research and Monitoring Project, Report no. 20 (Geneva: 1989), vol. II, pp. 46, 300, 313, 395. World consumption: UNEP, *Economic Panel Report* (Nairobi, 1989), p. 14; Federal Republic of Germany, Federal Environmental Agency, *Responsibility Means Doing Without: How to Rescue the Ozone Layer* (Berlin, 1989), pp. 26-27.

Note: n.a. = not applicable; n.y.p. = not yet produced. Data are subject to continuing research and should therefore be considered approximate; figures are rounded when original sources vary or provide ranges.

- a. Abbreviations for uses: A = aerosols P = pesticides  
 AC = air conditioning PF = plastic foams  
 Ad = adhesives R = refrigeration  
 CF = chemical feedstock S = solvents  
 FF = fire fighting



that ozone levels recorded during the Antarctic springtime (September-November) had fallen to about 50 per cent lower than they had been in the 1960s. Although concentrations recovered by mid-November, the amount of seasonal ozone loss had apparently accelerated sharply beginning in 1979. The "ozone hole" (that is, a portion of the stratosphere in which greatly diminished ozone levels were measured) had also expanded by 1985 to cover an area greater in size than United States.

The hole over Antarctica did attract additional public participation to the ozone issue (though more in the U.S. than in Europe and Japan, where greater public pressure on governments was most needed). It may also have influenced some participants in the negotiations as evidence of the fragility of earth's atmosphere.<sup>13</sup>

#### Effects of Ozone Loss

Definitive evidence concerning harmful effects of ozone modification was even more sparse than proof of the atmospheric theories. Existing research, however, though tentative in many aspects, did indicate a potential for extremely serious and wide-ranging damage to humans, animals, plants and materials.

Ozone hole allows free entry to ultraviolet rays from sun, causing health hazards like cataract and skin cancer. The radiation can cause mutations in DNA, leading to skin

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13      Stolarski, R.S. (1988), "The Antarctic Ozone Hole", Scientific American, 258, no. 1, pp. 35-36.

concerns, even often deadly melanoma. Estimates released by the UNEP, that 26 per cent rise in the incidence of nonmelanoma skin cancer world wide if overall ozone levels drop by 10 per cent. Environmental protection Agency (EPA) of U.S. estimated that there could be over 150 million new cases of skin cancer in the United States along many people currently alive or born by the year 2075, resulting in over 3 million deaths. On the basis of the same parameters, EPA also projected 18 million additional eye cataract cases in the United States, many of which would result in blindness.<sup>14</sup>

From animal research indicated that UV-B could suppress the immune system. It was not possible, however, to determine the extent of increased human susceptibility to infectious diseases - even though this aspect was potentially very dangerous. Major damage to agriculture was also suspected. Laboratory tests indicated that some two-thirds of 200 plant species (including peas, cabbage, melons, and cotton) were sensitive to UV-B radiation, although this had not been confirmed under field conditions. The only existing long-term field studies were of soyabeans, which did show substantial yield losses, resulting from increased levels of UV-B. Also extremely worrisome, but unquantified was the potential impact on the productivity of fisheries, via possible disruption of the aquatic food chain caused by radiation damage to phytoplankton and other organisms living or reproducing near the ocean surface.<sup>15</sup>

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14 Morrisette, P.M., The Evolution of Policy Responses to Stratospheric Ozone Depletion, Natural Resources Journal, 29 (1989), pp. 814-20.

15 Benedick, R. (1991), Ozone Diplomacy, p. 20.

Ultraviolet radiation was also implicated in costly accelerated weathering of polymers and in increased formation of low-level ozone (urban smog), injurious both to human health and to crops. The potential effects of CFCs on global climate was related both to the redistribution of ozone at different altitudes and to the action of CFCs themselves as heat-trapping gases. Quantitative assessments were crude, but there was growing scientific consensus that greenhouse warming would have far-reaching implications for rainfall and agriculture, sea levels, and the survival of many animal and plant species whose habitats would be seriously modified.<sup>16</sup>

Against a background of potentially great worldwide harm but considerable scientific uncertainty about whether that potential would be realized, it was generally accepted that changes in the ozone layer would pose serious risks to human health and the environment. Although the theoretical understanding of ozone had progressed considerably since 1974, great uncertainties still remained as diplomats began in 1985 to debate the need for imposing international controls of CFCs. The point of contention among the participating governments was the extent of international action necessary to provide a reasonable degree of protection.

4.2 Diplomatic Initiatives of UNEP to Protect Ozone Layer Depletion (Vienna Convention, Montreal Protocol and London Amendments)

Any lasting solution to the ozone problem, which affects

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16      *ibid.*, pp. 21-22.

the entire world, must take place in a global context. Serving as a catalyst for such an outcome became the mission of the United Nations Environment Programme (UNEP). Headquartered in Nairobi and operating on an annual budget of less than \$ 40 million, UNEP proved indispensable to the process of arriving at an international consensus to protect the ozone layer.

#### UNEP Starts the Process

Under the dynamic leadership of Mostafa Tolba, UNEP was active from the beginning in trying to sensitize governments and world public opinion about the danger to the ozone layer. UNEP made ozone protection a top priority in its program, and as early as September 1975, it funded a world meteorological organization technical conference on implications of the U.S. research. This meeting produced the first official statement of international scientific concern about CFCs.

In March 1977, UNEP sponsored a policy meeting of governments and international agencies in Washington D.C., which drafted a "World Plan of Action on the Ozone Layer". The plan of action recommended intensive international research and monitoring of the situation, and mandated to UNEP a central coordinating responsibility for promoting research and gathering relevant economic and scientific data. UNEP established the Coordinating Committee on the Ozone Layer (CCOL), which in ensuing years undertook the important function of bringing together scientists from governments, industry, universities and international agencies to assess the risks

of ozone layer depletion. The CCOL produced periodic reports that served as valuable references for policy makers.<sup>17</sup>

In May 1981, the Governing Council finally responded to Tobla's urging and authorized UNEP to begin work toward an international agreement on protecting ozone layer. However, most governments conceived of such a framework convention as covering only agreements on cooperative research and data collection, without actually imposing international controls. Later in 1981, UNEP convened a meeting of legal experts in Montevideo to consider aspects of such a global addition to the body of international law.<sup>18</sup>

In January 1982, UNEP convened representatives of 24 countries in Stockholm to launch the "Ad Hoc Working Group of Legal and Technical Experts for the Preparation of a Global Framework Convention for the Protection of Ozone Layer". The negotiations proved as cumbersome as the title. Because of the low priority now accorded to this issue by most governments, the deliberations stretched arduously through seven separate<sup>19</sup> weeklong sessions over the next three years. In 1983, Canada, Finland, Norway, Sweden and Switzerland formed what became known as the Toronto Group, named after the city where these

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17 UNEP, "Report of the UNEP, Meeting of Experts Designated by Governments, Intergovernmental and Non-governmental Organizations on the Ozone Layer", UNEP/WG/7/25 March 8, 1977.

18 Annual Report (1981) of the UNEP, Executive Director, Nairobi, pp. 20-21.

19 Annual Report (1982) of the UNEP Executive Director, pp. 14-15.

countries held their initial meeting, and introduced into the negotiations the idea of reducing CFC emissions. The U.S. government joined in Toronto Group in late 1983, proposing that the Ad Hoc Working Group develop a separate protocol containing international regulations, to be adopted simultaneously with the framework convention.<sup>20</sup>

The European Community made clear that it "was not even prepared to negotiate on any form of reduction of CFC production or use". Followed by Japan and Soviet Union, rejected the notion of an international regulatory regime. By late 1984, however, the EC, perhaps apprehensive of adverse political repercussions from appearing so consistently intransigent of an environmental issue, adopted a new tactic. It proposed an alternative draft protocol text that would prohibit any additions to CFC production capacity. The EC, argued, correctly, that without this prohibition, emissions reduction from an aerosol ban could eventually be nullified by uncontrolled future growth of CFCs for non-aerosol uses.<sup>21</sup>

At the January 1985 negotiating session of the Ad Hoc Working Group, the United States called attention to a new theory by Harvard scientists that a sudden collapse of ozone concentrations might occur once the amount of chlorine in the stratosphere passed a certain threshold level. In his

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20 Benedick R. (1991), *Ozone Diplomacy*, p. 43.

21 Iain Guest, "U.S. and E.C. Split on Danger to Ozone", *International Herald Tribune*, January 29, 1985.

opening statement, the U.S. representatives declared that this new possibility heightened the urgency of effective short-term preventive action, and warned that "the margin of error between complacency and catastrophe is too small for comfort". The EC, however, publicly dismissed these cautions as "scaremongering", and the deadlock continued.<sup>22</sup>

Whatever the intrinsic logic of the respective proposals, it was evident that each of the two contending blocs was basking a protocol that would require no new controls for itself but considerable adjustment for the other. In an attempt to achieve at least some short-term emissions reductions, the Toronto Group then introduced a complicated "multi-options" approach, which combined aerosol reductions with a capacity gap. This would have required at least some new controls by all parties.

#### The Vienna Convention - 1985

In March 1985, representatives of 43 nations, including 16 developing countries, convened in Vienna to complete work on ozone convention. Three industry organizations (the International Chamber of Commerce and Industry and two European Federations) attended as observers; indicative of the environmental community's lack of interest in the ozone issue at this point was the non-participation by any environmental group.<sup>23</sup>

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22 Benedick, R., 1991, Ozone Diplomacy, pp. 42-43.

23 Ibid., p. 44.

By this time the Ad Hoc Working Group had not only achieved substantial agreement on a framework convention but also drafted all the elements of a protocol - with the crucial exception of the control provisions.

With the stalemate over control strategies, the Vienna Convention for the protection of the ozone layer was signed by 20 nations, plus the EC Commission. Signers included most of the major CFC-producing countries except Japan; the U.K. signed two months later.<sup>24</sup>

The Vienna Convention was itself a considerable accomplishment. It represented the first effort of the international community formally to deal with an environmental danger before it erupted. The convention created a general obligation for nations to take "appropriate measures" to protect the ozone layer (although it made no effort to define such measures). It also established a mechanism for international cooperation in research, monitoring, and exchange of data on the state of the stratospheric ozone layer and on emissions and concentrations of CFCs and other relevant chemicals. These provisions were significant because, before the Vienna Convention, the Soviet Union and some other countries had declined to provide data on CFC production. Most important, the Vienna Convention established the framework for a future protocol to control ozone modifying substances.

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24 UNEP, Report Vienna Convention for the Protection of Ozone Layer, Final Act, UNEP, Nairobi, 1985.



As incredible as it may seem in retrospect, it is worth noting that at the signing of the Vienna Convention in 1985, many governments were reluctant to designate UNEP as the Official Secretariat for the convention on subsequent protocol. In the later period also, UNEP did remarkable job for the conclusions of Montreal protocol on substances that deplete ozone layer. So Vienna convention was the beginning of an international effort to formulate strategy for the new global environmental problems.

#### The Montreal Protocol

On September 16, 1987, a treaty was signed (The Montreal Protocol on Substances that Deplete the Ozone Layer), was unique in the annals of international diplomacy. Knowledgeable observers had long believed that this particular agreement would be impossible to achieve because the issues were so complex and arcane and the initial positions of the negotiating parties so widely divergent. Those present at the signing shared a sense that this was not just the conclusion of another important negotiation, but rather a historic occasion. It was hailed as "the most significant international environmental agreement in history", "a monumental achievement" and "unparalleled as a global effort".<sup>25</sup>

The negotiations leading to the Montreal Protocol on protection of the ozone layer, are a manifestation of the new dimensions in diplomacy. )

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25      Benedick, R., 1991, Ozone Diplomacy, p. 1.

The Sequence of Negotiations:

a. The Lineup of Countries

As the protocol negotiations began in December 1986, the only governments that had actually ratified the Vienna Convention were Toronto Group plus Soviet Union. Neither EC nor Japan had yet ratified. This was not a propitious omen, since no regulatory protocol could become operational until the convention itself entered into force, and this required ratification by 20 governments.

The negotiating parties appeared to be divided into three major camps, basically unchanged from the lineup some 20 months earlier at the 1985 Vienna Conference. Following the 1986 Leesburg Workshop, however, there were at least tentative hints of latent flexibility. The EC, Japan and Soviet Union shared common perspective, while the Toronto Group, maintained that postponement of meaningful action could necessitate even more costly measures in the future. A third group of active participants, including Australia, Austria, and a number of developing countries, were initially uncommitted, but as the negotiations progressed they moved toward favouring stringent regulations. During the negotiations, Argentina, Brazil, Egypt, Kenya and Venezuela played increasingly important roles representing the perspectives of developing countries.<sup>26</sup>

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26 Ibid., pp. 68-69.

b. Geneva: A Slow Start

Against this background the UNEP, convened the opening weeklong negotiations in Geneva in December 1986. As with subsequent sessions, there were substantial international press and television coverage and many observer from industry, the U.S. Congress and American environmental groups. Although UNEP had hoped for attendance by more than 50 governments, only 25 showed up. Nineteen were industrialized countries and the other 6 were relatively advanced developing nations such as Mexico and Uruguay.

The negotiations began categorically, with general and unfocused debate. Canada, U.S. and Soviet Union each proposed "illustrative" texts that were incompatible with one another. The U.S. text was the most comprehensive, covering not only control measure but also provisions for periodic assessment and adjustments, trade restrictions and reporting. Three Nordic nations - Finland, Norway and Sweden - jointly offered an amendment to the U.S. text, calling for immediate cuts rather than an initial freeze. The Canadians proposed complex national emissions quotas based on a formula incorporating gross national products and population. The Soviet seemed unfamiliar with, and sharply critical of, the scientific rationale for new controls. They suggested national allocations based rather vaguely on population and CFC production capacity, with a complete exemption for developing countries. The EC Commission declared that it had no mandate to negotiate

anything other than a cap on production capacity.<sup>27</sup>

C. Vienna: A Few Steps Forward

The following weeks were marked by intensive U.S. diplomatic activity to promote a serious long-term control strategy. The second session convened, as planned, in Vienna in late February 1987. In order to focus the debate the U.S. delegation proposed that four separate working groups be established to deal individually with the issues of science, trade, developing countries, and control measures.

At Vienna, there was growing evidence of evolution in the attitudes of many participating governments. Canada and Nordic nations quietly abandoned their separate concepts and supported the proposed U.S. text outline. This format also gained backing from other countries, including Egypt, Mexico, New Zealand and Switzerland. Japan and Soviet Union remained enigmatic.

Important gaps separated the U.S. and the EC, however, on virtually every substantive issue. The EC stated that even a small reduction beyond a freeze would be very difficult to accept, although it could at least be considered. An informal EC proposal would have postponed even minimal 10 to 20 per cent reductions in CFC emissions by nearly a decade.

An important step forward at Vienna, however, was the setting of a firm September date for the final Plenipotentiaries

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27 Ibid., pp. 70-71.

Conference in Montreal. This both turned up the pressure and eradicated any lingering doubts or wishful thinking about the seriousness of the intent to push forward to a protocol. Another significant result was the endorsement of a U.S. proposal to turn once more to the science. The scientists were asked to test on their models the future effects on ozone of alternative regulatory strategies that incorporated varying combinations of controlled substances and reduction schedules.<sup>28</sup>

d. Geneva Again: UNEP Takes a Stand

The number of participating governments rose to 33, at the third negotiating round, in Geneva in April 1987; of these, 11 were developing countries. UNEP Executive Director Mostafa Tolba, attending for the first time, set the tone with an impressive opening address. Tolba emphasized that "no longer can those who oppose action to regulate CFC releases hide behind scientific "dissent". In the face of the potential of CFCs "to cause unmeasurable damage to our planet", he unequivocally placed UNEP behind tough international regulations". From that point, Tolba assumed a central role in protocol negotiations, exerting his personal influence and his considerable authority as scientist and head of a UN organization.<sup>29</sup>

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28 Ibid., p. 72.

29 Mostafa K. Tolba, "Nowhere to Hide", UNEP Press Release, Geneva, April 27, 1987.

e. Final Maneuvers

In late June 1987, Tolba reconvened his group of key delegation heads in Brussels to consider the controls and other major provisions. In July a small number of legal experts met in The Hague to analyse the entire protocol text as it had emerged from various working groups, in order to produce a relatively uncluttered and internally consistent draft for the final negotiating session in Montrael.

On the eve of the Brussels meeting, the Chief U.S. negotiator received a secret cable containing President Reagan's instructions to maintain the strong U.S. negotiating position - but not to reveal details of the presidential decision. The injunction for secrecy inadvertently led to confusion among other negotiating partners, especially the EC. As a consequence, the EC and U.K. showed unexpected intransigence at the meetings in both Brussels and The Hague.<sup>30</sup>

It is difficult to imagine the degree of tension and suspense among participants and observers as the Montrael protocol conference approached. There was a sense that governments were entering uncharted territory. But the number and extent of issues still to be resolved in the putative closing round of a complicated international negotiation were staggering. Conflicts and uncertainties marked virtually every paragraph of the proposed protocol, from the central

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30 Benedick, R., 1991, Ozone Diplomacy, p. 73.

questions of which chemicals were to be controlled and the stringency of those controls to such crucial matters as trade restrictions and procedures for decision-making and noting. The possible demands of developing countries, which would be attending the deliberations in significant numbers for the first time, were a totally unknown quantity.

f. Montriel: Agreement At Last

TH-4450

The parties reconvened in Montriel on September 8, 1987. The number of participating governments had now grown to over 60, of which more than half were developing countries. Scores of observers included, in sharp contrast to the 1985 Vienna Convention, representatives of many environmental organizations, industrial firms and associations were, as usual also strongly in evidence. The international news media were well represented.

With customary eloquence, Tolba in his opening address traced the long path of compromises that had led to this juncture. Recalling the negotiations of the U.S. Constitution, which had been signed 200 years earlier almost to the day, Tolba spoke of "horse trading", "frayed tempers", and "frustrations". In a pointed analogy to the current situation, he cited Benjamin Franklin's mixed feeling in signing: "I consent, Sir, to this constitution because I expect no better". Tolba posed a question to this assembled ministers that clearly reflected his own frustrations: "Have we compromised so much that we have emasculated the agreement"? And he concluded, with mild optimism, that the controls provided

in accord would at least give the scientists, engineers, and planners "some time to think and act".<sup>31</sup>

But there was still to be considerable 'horse trading' in Montrael. Although Tolba's text had gained widespread backing, major unresolved differences remained between the U.S. and the EC Commission. Tolba and the conference Chairman, Austrian diplomat Winfried Lang, worked tirelessly throughout the eight days in closed meetings with key participants to hammer out the necessary compromises. And a precedent-setting international accord was finally unveiled on September 16, 1987.

It was an occasion that would long remain in the memories of those who were present. Mostafa Tolba as usual summed it up best in his closing address to the Plenipotentiaries. Witnessing the fruition of 12 years of personal struggle, Tolba declared that the agreement had shown "that the environment can be a bridge between the worlds of East and West, and of North and South .... As a scientist, I salute you; for with this agreement the worlds of science and public affairs have taken a step closer together ... a union which must guide the affairs of the world into the next century". And, he concluded prophetically, "this protocol is a point of departure ... the beginning of the real work to come".<sup>32</sup>

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31 Mostafa K. Tolba, "Weighing the Cost of Compromise", UNEP Press Release, Montrael, September 14, 1987.

32 Mostafa K. Tolba, "Facing a Distant Threat", UNEP Release, Montrael protocol, September 16, 1987.



### Points of Debate

The principal issues debated over the nine months from December 1986 to September 1987, can be divided into eight categories:

- What chemicals would be included,
- Whether production or consumption of these substances would be controlled,
- The base year from which reductions would be calculated,
- The timing and size of cutbacks,
- How the treaty could enter into force and be revised, including the question of weighted voting,
- Restrictions on trade with countries not participating in the protocol,
- Treatment of developing countries with low levels of CFCs consumption,
- Special provisions for the EC.

Against the general background history about the sequence of negotiations, which described earlier, each of these issues is examined here in more detail. (The protocol's key provisions and 1990 London Revisions were summarised in Annexure 6).

#### 1. Chemical Coverage

Even though discussions before the Vienna Convention had focussed only on CFCs 11 and 12, Canada, Norway, the U.S., and other had come to insist, on the basis of evolving scientific understanding, that effective protection of the ozone layer would require all significant ozone depleting substances to

be controlled under the protocol. The original U.S. proposal in December 1986 had included CFCs 11, 12 and 113 and halons 1211, and 1301. U.S. negotiators had later added CFCs 114 and 115 to the list on the grounds that these ozone destroying compounds would, if not restricted, simply be used in place of CFCs 11 and 12. Bolstered by new scientific findings, Norway proposed in Montreal to control a third halon 2402.

Arguing more legalistically than scientifically, the EC long resisted going beyond CFCs 11 and 12. The EC delegation head, Laurens Brinkhorst, charged in April 1987 that the Americans were complicating the negotiations by adding new chemicals. Moreover, the EC maintained that it lacked adequate data on the other compounds.

Japan was initially insistent that CFC-113 be excluded from control; it was an essential solvent in that country's expanding electronics industry. The EC and the Soviet Union were particularly reluctant to include the halons, which were important as fire extinguishants in sensitive defense and space-related technologies and for which satisfactory substitutes were unavailable.<sup>33</sup>

The turning point in this debate came from the conclusions of the scientific meeting held in Wunzberg in April 1987.

Following the bilateral U.S.-Soviet scientist cooperation

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33 UNEP, Report of the Ad Hoc Working Group on the Work of Its Third Session, Geneva, May 8, 1987, p. 15.

in the Spring of 1987 the Soviet Union also came to accept the need for controlling a broader array of ozone-depleting chemicals, including halons.<sup>34</sup>

## 2. Production versus Consumption

The issue of whether restrictions should be applied to the production or the consumption of controlled substances proved extremely difficult to resolve because of its commercial implications.

The EC pushed hard for the production concept. European negotiators argued that it was administratively simpler to measure, and thereby to control, output, since there were only a small number of CFC and halon producing countries as opposed to thousands of consuming industries and countless points of consumption.

If a CFC-importing country's traditional supplier raised prices excessively or cut back on exports, the importing nation could meet the short-fall either by substituting its own production or by turning to another CFC producer from among the protocol parties. In turn a producing country could increase its own production (and exports) to meet such needs without having to reduce its domestic consumption. Beginning in 1993, however, exports to non-parties could no longer be subtracted but would have to be counted against domestic consumption (Article 3) of the protocol. This

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34 UNEP, "Ad Hoc Scientific Meeting on Ozone Layer, Wurzburg, April 9-10, 1987.

prospect could serve as an added incentive for importing countries to join the protocol.

At Montreal, the Canadian delegation introduced an "industrial rationalization" clause that permitted this extra production allowance also to be used on behalf of smaller producer countries, if such a country could no longer produce efficiently because of small scale resulting from the required output reductions, it would be allowed to transfer its allowed production quota to another treaty party and to satisfy its needs by importing from that party. (Article 2, paragraph 5 of Montreal Protocol).<sup>35</sup>

### 3. Base Year

The establishment of a suitable reference year of calculating the level of the freeze and the subsequent reductions was crucial. CFC production had started to rise rapidly again in 1983 and if the protocol were to specify a reference year in the future, industry could be expected to expand output substantially to establish a higher basis from which subsequent cuts would be calculated.

Therefore, the United States, eventually joined by nearly every other actively participating country, would not compromise on its original proposal, the base year should be the one preceding expected completion of negotiations, or 1986. In an attempt to gain leverage for other issues, the

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35 Benedick, R., 1991, Ozone Diplomacy, pp. 79-82.

EC Commission held out for 1990, claiming difficulties in obtaining export and import data for the earlier year. But Soviet Union insisted that 1990 were the base year, it could not join the protocol. From the standpoint of equity (Soviet and developing countries consumes less CFCs), the Soviet stance was more reasonable than it had first appeared.<sup>36</sup>

4. Stringency and Timing of Reductions

For the general public, the most visible aspect of the protocol was the timing and extent of reductions. Not unexpected, this also turned out to be the single most contentious issue. Again the EC and the U.S. were the principal opponents.

After divergence of opinion among different countries, the protocol text finally agreed upon, established a target date of 1 January, 1989 for entry into force, with a freeze on CFCs at 1986 levels effective for the 12 month period beginning of months after protocol's entry into force. The halons were frozen at 1986 levels for the 12 month period beginning three years EIF. The automatic 20 per cent CFC reduction would commence with the 12 month period beginning July 1, 1993 regardless of when the treaty entered into force. The additional 30 per cent CFC reduction, unless reversed by a two-thirds majority of parties representating at least two-thirds of total consumption, would take effect with the 12 month period beginning July 1, 1998.

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36 Ibid., p. 83.

Crucial to the reduction timetable throughout the negotiations were the periodic scientific and economic assessments originally proposed by Canada and the U.S. which would enable the parties to reexamine and if necessary, revise any of the reduction steps according to the procedures.<sup>37</sup>

5. Entry into Force, Revisions and Voting

The interrelated issues of entry into force revisions, and voting were not raised until near the end of the negotiating process. They proved, however, to be important elements of the final protocol.

The U.S. government had become increasingly disillusioned with one nation/one vote procedures in U.N. bodies, by which countries with substantial stakes in an issue could be overwhelmed on a majority vote. Precedents existed in some international treaties for weighted voting, but the Vienna Convention for the protection of ozone layer had already established the one-vote principles for its protocols. Any attempt at this stage to overturn it would provoke objections from developing countries and Nordic states.

The U.S. solution was to introduce the idea of a two-step or qualified majority. Under this concept, certain actions could be undertaken only if they had the support of a certain number of countries, which together accounted for

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37 Ibid., pp. 84-88.

a certain proportion of total CFC consumption.

However, an inevitable, and reasonable, compromise was struck in Montreal, providing that entry into force would require ratification by at least 11 parties, together constituting at least two-thirds of estimated global consumption of controlled substances as of 1986 (Article 6). In effect, to become binding the protocol would have to be ratified by the U.S. and at least four of the six other large consumer countries (France, West Germany, Italy, Japan, the Soviet Union and the U.K.), or by the U.S. and the EC as a unit. Most observers believed that this would provide a sufficient critical mass to increase the pressure on any potential large holdouts to join the treaty.

The protocol was so designed that if future changes in the stringency and timing of reductions of already controlled substances would be considered "adjustments", to the provisions and therefore binding on all parties, even those that had not voted with the majority.<sup>38</sup>

#### 7. Trade Restrictions

At the first session in Geneva in December 1986, the United States offered specific proposals to restrict trade in controlled substances with non-parties. The objective of such restrictions was to stimulate as many nations as possible to participate in the protocol, by preventing non-participating

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38 Ibid., pp.90-91.

countries from enjoying competitive advantages and by discouraging the movement of CFC production facilities to such countries. These provisions were critical, since they constituted in effect the only enforcement mechanism in the protocol. Yet the trade issue also proved to be a complex and contentious subject, and trade working groups debated exhaustively at each negotiating session.

As a strong incentive for countries to ratify the protocol, the United States initially proposed an outright ban on CFC exports to non-parties. EC countries responded that this measure would unfairly affect them, as they had no assurance that their current customers would join. The eventual compromise provided that, after January 1, 1993, exports to nonparties could not be subtracted from a party's production in calculating its consumption level (Article 3 of the protocol). Thus, if EC nations wanted to continue exporting to any customers that had not joined the protocol within four years, they would have to reduce their own domestic consumption to do so. Since such a move was unlikely, there would be pressure on importing countries to join the protocol in order to maintain their supply.

With respect to imports from nonparties, the final text banned the import of bulk substances within one year of entry into force (Article 4, paragraph 1). In addition, U.S. negotiators had campaigned hard for restrictions on imports from nonparties of products containing or produced with any controlled substances. One rationale for such limits was to



provide another incentive for potential holdouts to join the protocol, lest they lose their markets (for example, Asian electronic products using CFC 113 as a circuit cleaner). Another was that unless such products were controlled, producers could be tempted to shift CFC manufacturing facilities to pollution havens offshore. The original producer could then import the products without being itself accountable for the related CFC emissions, such actions would nullify benefits to the ozone layer and also impede development of non-ozone-depleting chemicals.<sup>39</sup>

These U.S. proposals encountered strong resistance from the U.K. and the EC Commission throughout the negotiations. Compromises were finally reached only in Montreal.

#### 8. Low Consuming Developing Countries

Since CFC technology is relatively easy to obtain and install, developing countries, with their rapidly growing populations, represented a large potential source of future CFC emissions. Existing per capita consumption of CFCs in developing countries was only a small fraction of that of the industrialized world, but their domestic requirements were growing. The negotiators at Montreal protocol thus faced a difficult challenge in designing special provisions to encourage developing countries to sign the protocol. The drafters of the treaty needed to enable these nations to meet legitimate

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39 Ibid., p. 92.

needs during a transition period while substitutes were being developed; at the same time, it was important to diminish incentives for them to become major new CFC producers and consumers.

Although this potentially divisive subject had been debated throughout the negotiations, it was not until Montreal, when considerably more developing countries were in attendance, that specific details were considered. Egyptian Ambassador Essam-El-Din-Hawas ably chaired a working group to draft a package of relevant provisions; Argentina, Brazil, Kenya, Mexico, Venezuela, and for the first time China and Malaysia played leading roles in this effort.

The resultant Article 5 postponed but did not eliminate compliance by developing countries. Early proposals to allow a 5-year grace period and an annual per capita consumption cap of 0.1 kilogram were rejected by developing countries as too restrictive. The final compromise permitted a 10-year period during which any developing countries with a per capita annual consumption below 0-3 kilogram could increase consumption up to this level "in order to meet its basic domestic needs". This quantity represented approximately 25 to 30 per cent of the existing per capita consumption in Europe and the United States, and about 50 to 60 per cent of the targeted level in the industrialized countries after their cutbacks were effected during the same period. After the 10 years had elapsed, a developing country would be required to adhere to the Article 2 reduction schedule.

The 10 to 15 per cent differentials permitted between the scheduled phase downs of production and consumption for the industrialized countries would theoretically provide producers with the excess capacity to enable them to satisfy developing nations' needs. The protocol also encouraged financial and technical assistance to developing countries for alternative substances and new technologies (Article 5, paragraph 2 and 3; Article 1, Article 10), but the vagueness of these clauses was subsequently to prove troublesome.

The negotiators believed that developing countries were unlikely to expand their use of CFCs to the maximum permitted level, since they would not find it attractive to invest in a technology that was both environmentally detrimental and soon to be obsolete as substitutes were introduced. Some analysts, however, were concerned that developing countries might use the permissible increase in consumption of bulk CFCs not merely to satisfy legitimate internal demand (basic domestic needs) but also to manufacture products containing CFCs for exports. The key to this issue was that the concept of "basic domestic needs" was not precisely defined in the protocol and therefore, still open to interpretation.<sup>40</sup>

As it turned out, North-South issues were far from settled at Montreal and they became a central focus of subsequent deliberations over the protocol's implementations.

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40 Ibid., pp. 93-94.

9. Special Treatment for the European Community

Substantive differences between the European Community and other governments were complicated by the fact that the EC demanded special concessions for the Commission and the 12 member nations by virtue of their evolving political and economic union. Of central relevance to these demands was the question of how authority on any given matter was divided between the EC Commission and its sovereign member states, a situation that to outsiders seemed perpetually in flux. It was often unclear to other participants in the negotiations, nor could the EC representatives themselves satisfactorily explain whether the EC Commission had full authority (exclusive competence) to enforce any given article of the protocol or whether power was shared with member countries (mixed competence).

The EC Commission's insistence on special statutory treatment as a regional economic integration organization (REIO), thus became an added irritant to its negotiating partners. Even while other governments applauded the philosophy of European Union, they could not in the case at hand be certain whether the ambiguities might, under a yet unforeseen circumstances, allow both the Commission and EC member state to maintain that a given treaty obligation was not its responsibility.<sup>41</sup>

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41 Ibid., pp. 95-97.

#### 4.3 London Revisions - 1990

In June 1990, delegations from governments, international institutions and private-sector organizations converged on London to consider and decide upon significant revisions of the 1987 Montreal protocol on substances that deplete the ozone layer. By that time, 58 governments plus the EC, representing 99 per cent of estimated world production and 90 per cent of consumption, had ratified or acceded to the protocol. Thirty of the parties were industrialized countries; 28 were developing countries; a notable recent addition was Brazil, India, and China also joined.

A month before the June 20 scheduled beginning of the final session of the open-ended working group, Executive Director of UNEP Mostafa Tolba circulated for consideration a "personal" proposal for revisions of the protocol's control measures. Tolba offered the proposal in an attempt to promote greater consensus on the measures. The major elements, which formed the basis for the London negotiations, were as follows:

1. CFCs; Freeze beginning in mid 1987 (already in the protocol); a six-month advance of the 20 per cent reduction to begin January 1, 1993; 85 per cent reduction in 1997; phaseout in 2000.
2. New CFCs; as above without the freeze stage.
3. Halons; freeze in 1992 (already in the protocol); 50 per cent reduction in 1995; phase out in 2000; parties to decide in 1992, with subsequent review, whether any identified "essential use" should be exempted from this

- schedule because of unavailability of substitutes.
4. 'Other halons' : no firm phaseout schedule (because of uncertainty about the properties of these compounds); a (nonbinding) resolution requesting reports. On production and use and calling on parties to refrain from using currently unregulated halons except as transitional replacement in essential applications.
  5. Carbon tetrachloride (CT): 85 per cent reduction in 1995; phaseout in 2000.
  6. Methyl chloroform (MC); freeze in 1993; 30 per cent reduction in 1995; 50 per cent reduction in 2000; plus a (nonbinding) resolution proposing phaseout not later than 2010, subject to future reviews.
  7. Hydrochlorofluoro carbons (HCFCs): mandatory reporting on production, exports, and imports, phaseout not later than 2040; resolution calling for phaseout, "if possible", by 2080.<sup>42</sup>

Tobla's compromise package attempted to reach a balance among the many contending proposals that were embedded in the heavily bracketed text produced by the working group in March after months of deliberations.

Major unresolved issues on the eve of the London meetings included;

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42 UNEP, second meeting of the parties to the Montreal protocol, "proposed adjustments and amendments to the control measures of the Montreal protocol - revised note by the Executive Director, UNEP/OZL.Pro.WG/IV/2/Rev./1, London, June 20, 1990.

1. The timing and extent of cutbacks for CFCs, halons, carbon tetrachloride, and methyl chloroform, and the treatment of "other halons" and HCFCs.
2. Details of the new financial mechanisms, including means of determining policy, voting, procedures, the respective roles of UNEP and the World Bank, and the burden-sharing formula for donors.
3. Defining a relationship between the obligation of Article 5 parties to comply with control measures and the provision of financial aid and access to technology, including the critical question of how to determine whether the assistance provided to a given party would be adequate to enable its implementation of the controls.
4. Revised voting procedures for future changes to the protocol, reflecting the developing countries' insistence on parity.
5. Noncompliance procedures, including the status of any parties not accepting the new amendments.<sup>43</sup>

#### The End of CFCs

Japan, the Soviet Union, and the U.S. were the strongest advocates in the working group for Tolbas compromise package. Australia, New Zealand, and the Nordic nations, often joined by Austria, Canada, and Switzerland, were the most consistent proponents of tighter regulation and earlier phaseouts. It

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43 UNEP, "Protecting the Ozone Layer - A Resounding Success" - Press Release, London, July 1990.

was probably no accident that most of these countries are relatively close to one or the other polar region; the implications of the Antarctic ozone hole and the prospects for an analogous loss over the Arctic would not have escaped them. Developing country representatives were generally bystanders to the debates over controls among the larger and smaller industrialized nations.

The final compromise reached by the ministers on the CFC schedule comprised the following elements; (1) the 20 per cent cutbacks targeted in the Montreal protocol for 1993 was dropped as no longer relevant, since virtually all industrialized countries had already passed this milestone, and a 50 per cent reduction by 1995 was introduced in its place; (2) the 85 per cent reduction proposed by Tolba remained for 1997; and (3) the phaseout in 2000 was confirmed. During the 18 months following the London revisions (July 1, 1991 to December 31, 1992), CFC would be frozen at 150 per cent of the 1986 base year. Thereafter, all controls for all substances would apply to normal calendar years.

At the close of the conference, 13 heads of delegation issued a formal declaration stating that they were "convinced of the availability of ... alternatives" to CFCs and that there was a "need to further tighten" the revision just approved. Most observers regarded the London outcome on CFCs as a strong and realistic compromise. The introduction of the 50 per cent cut (in actuality, a three and a half year advancement of this stage from the original protocol schedule) was both meaningful



and unexpected.<sup>44</sup>

The intent was very plain; this was not the last word on CFCs, and the parties would act again on the basis of updated assessment of the rapidly evolving technology. A key member of the science panel, who was present in London, expressed strong satisfaction with this outcome.

### Further Phaseouts

Control measures for other chemicals were also subject to hard bargaining. Major controversy over methyl chloroform (MC) persisted at the London meetings, with a surprising outcome.

The final result was a freeze of MC in 1993, reductions of 30 per cent in 1995 and 70 per cent in 2000, and phaseout in 2005 - plus a commitment to review, no later than 1992, the feasibility of even earlier reductions and phaseout. Moreover, future adjustments of the reduction schedule would be binding on all parties.

The hydrochlorofluoro carbons (HCFCs) had been included for control in the draft protocol amendment produced at the March working group meeting, albeit entirely in brackets because of EC opposition. The Nordic states had proposed language that would limit HCFCs to specific essential uses agreed upon by the parties, and would phase them out by 2010 or 2020. Subsequently, in its amendments to the Clear Air Act

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44 Benedick, R., 1991, *Ozone Diplomacy*, pp. 170-73.

the U.S. Congress had established 2015-2020 freeze dates and 2030-2035 phaseouts for HCFCs. Tolba, with U.S. support, attempted in his London proposal to retain at least a 2040 phaseout date in the binding part of the protocol revisions. But the European Community was unwilling to compromise on this point. As a result, the only mandatory requirement on HCFCs that was included in the revised protocol was an obligation to report on production, plus imports and exports to parties and nonparties, the same as for other controlled substances.

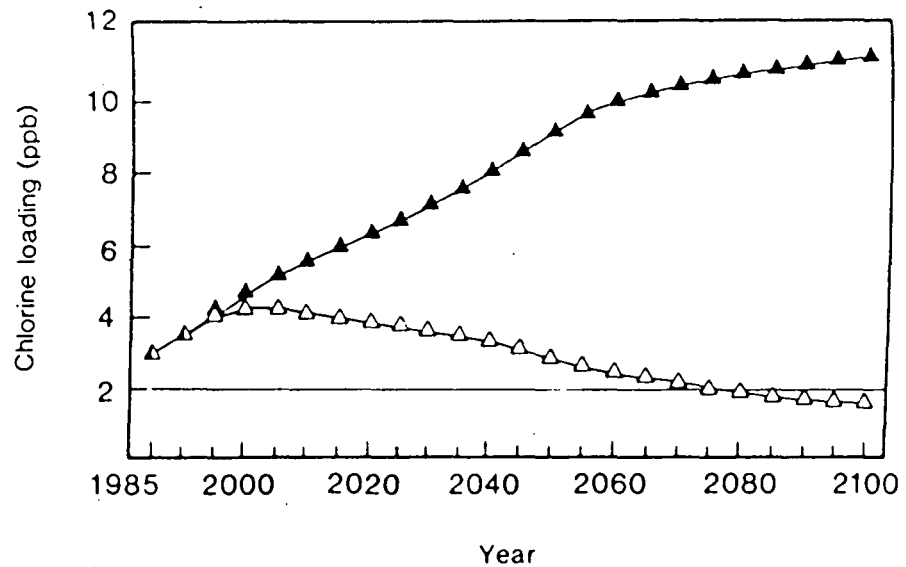
In sum, after the London revisions there were now five groups of controlled substances under the Montreal protocol; the original five CFCs and three halons, plus ten new CFCs, carbon tetrachloride, and methyl chloroform. All of these were now scheduled for varying interim reductions and phaseout in 10 to 15 years, with clear indications that even these schedules could be accelerated on the basis of early reassessments. In addition, some 34 HCFCs were included, in the protocol as "transitional substances", and the parties had signaled that HCFCs and "other halons" (which would be enumerated later by UNEP in a separate document) should be used only with discretion and would be subject to continuing scrutiny and future control.<sup>45</sup>

The extent that the negotiations in London achieved a meaningful strengthening of controls is dramatically evident in Figure 4.1 which compares the effect of the original and

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45 UNEP Synthesis Report, pp. 10-16.

**Figure 4.1**



	Chlorine loading values	
	Peak (ppb)	2075 (ppb)
▲ Montreal Protocol (CFC reductions); no controls on HCFCs, CT, or MC	11.02	10.47
△ London revisions to protocol; HCFC 2020 freeze, 2040 phaseout	4.20	2.00

**Figure 4.1** Effects of Montreal Protocol versus London revisions on atmospheric chlorine loading, 1985–2100. (Assumptions for both scenarios: intermediate reductions as specified in Montreal Protocol or London revisions; HCFC substitutes replace 30 percent of CFC reductions, have an atmospheric lifetime of 8 years and a chlorine-loading potential of 0.05; natural background chlorine loading of 0.6 ppb.) *Source:* Calculated by EPA.

the revised protocols on atmospheric chlorine concentrations. Not only is chlorine loading now held to a peak of slightly over 4 ppb, but the pre-ozone hole level of 2 ppb should be attained by 2075.

### Innovative Funding

Notwithstanding the progress that had been made by the Open-Ended Working Group through its May 1990 session details of the funding mechanism occupied a dominant portion of the London meetings. As the moment of decision approached for this precedent-setting step, most major donor countries wanted to ensure clear and predictable parameters for the new fund - the idea of which had met with strong resistance when it was initially proposed at the 1989 Helsinki meeting of parties.

The United States sought to make explicit in the text of the protocol its view of the new fund as one of "limited and unique nature". Therefore, the U.S. negotiators proposed language specifying that - (1) the ozone-depleting problem being addressed by the fund was scientifically established, (2) the funds would make a real difference in overcoming the problem, (3) the amounts needed were predictable, and (4) the financial mechanism "is without prejudice to any future arrangements that may be developed with respect to other environmental issues.

There was some North-South maneuvering for control over decision-making in the new fund, as determined by its voting procedures. Some major donors, drawing on Article 13, paragraph :

of the original treaty (The parties, at their first meeting, shall adopt by consensus financial rules for the operation of this protocol), proposed that decision dealing with the fund be subject to consensus. This was a brave try, but the Article, which had specified procedures only for the first meeting of parties, could not be stretched in interpretation to apply to the new fund at the second meeting.

For their part, developing countries, legal experts referred to the previously agreed rules of procedure on general decisions, as well as to the protocol amendment procedure (Vienna Convention, Article 9), both of which provided for a straightforward two-thirds majority rule. Applying these rules would, at some point in the future, give them control of the new fund.

The resultant compromise drew on the new, balanced solution that had just been agreed upon for the voting on controls; it was decided that a two-thirds majority, comprising separate simple majorities among North and South, would apply both to votes of the 14 member executive committee and to votes of the parties as a whole concerning the financial mechanism. Thus, both donors and recipients had potential blocking power.

In the terms of reference approved in London, UNEP would pursue "political promotion of the objectives of the protocol", as well as research, data collection, and clearing house functions. UNDP would take charge of the feasibility studies and other technical assistance activities. Other

multilateral agencies, including regional development banks, could be invited by the executive committee to cooperate with the fund. But the World Bank, and specifically the President of the Bank, was clearly designated as the administrator and manager of the central function of the fund; financing projects and programs to meet incremental costs (of Article 5).<sup>46</sup>

In sum, the agreed Charter for an ozone fund was an exceptional innovation in the realm of multilateral cooperation. Procedures and terms of reference had been devised incorporating delicate checks and balances among donors and recipients. The parties to the protocol exercised ultimate authority over the new financial mechanism. The three principal collaborating multilateral institutions would be assigned specific responsibilities under interagency agreements with the executive committee. An experiment had been launched with important implications for future approaches to global problems requiring North-South cooperation.

#### 4.4 Diplomatic Strategy of the Developing Countries

One of the premises of the Montreal protocol had been that developing countries would be encouraged if they could count on a reasonable expansion in use of CFCs and halons during the 10-year transitional period, after which they would move to newly developed technologies and follow the original

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46 UNEP, Second Meeting of the Parties to the Montreal Protocol, Draft Amendment, UNEP/OZL.Pro/Rev. 1/ London, June 29, 1990, pp. 8-16.

reduction schedule. But the nations of the South, most of which had been onlookers in the ozone negotiations through 1987, as the rich countries argued over chemicals scarcely used in the developing countries, moved to centre stage in 1989 and claimed a major role in revising the protocol.

By 1989 the objectives of the developing country negotiators had undergone significant change. At Montreal their preoccupation, reflected in the negotiators over Article 5, was primarily to maintain maximum usage of CFCs for the longest possible grace period. But with industrialized countries now on a track toward phaseout rather than a 50 per cent reduction, the grace period became almost irrelevant. It would now be in the interest of developing countries (or "Article 5 parties", as they were increasingly referred to in working group texts) not to linger too long with CFCs, but rather to move as rapidly as possible to new technologies - and to ensure that help was available to accomplish this.<sup>47</sup>

Industrialized nations, with less than 25 per cent of the world's population, were consuming an estimated 88 per cent of CFCs; their per capita consumption was more than 20 times higher than that of the developing nations. For China, the world's most populous country, the disparity was even greater; its per capita CFC consumption was only about one-fortieth that of the European Community and the United States.

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47      Benedick, R., 1991, *Ozone Diplomacy*, p. 148.

Developing country governments, in statements at the 1989 London and Helsinki conferences, stressed that the problem was not of their making. They sought assurances that their populations would neither be deprived of the benefit of these substances nor have to pay more for equivalent products and technologies. They were increasingly worried that the drive toward rapid phaseout could add new burdens to their economies and adversely affect their standard of living. So they argued that additional and technical financial assistance was essential to enable developing nations to contribute to the protocol's objectives.

There are several ways in which developing country might incur incremental burdens through accepting the treaty obligations. In the short term, as CFCs were phased out they might become more expensive to countries dependent on imports. The replacement of chemicals and the products made with them were also expected to be costlier. Those developing countries that were themselves current or prospective producers of CFCs and their related products would face problems of access to new substitute technology and the attendant costs of royalties and licences. In addition, there would be costs associated with converting existing CFC facilities, including the purchase of new capital equipment and possible premature abandonment of old. Operating costs might also rise, including possibly, higher-priced raw materials and retraining of workers. Some developing countries also felt that the protocol unfairly excluded them from potentially lucrative trade in products



made with or containing CFCs.

However, governments of developing countries could not regard continued emissions of CFCs and halons with indifference - they also had a stake in protecting the ozone layer. Even though harmful ultraviolet radiation would cause relatively greater incidence to skin cancer among lightly pigmented populations, all people are susceptible to suppression of the immune response system and to eye cataracts. Indeed, poorer general health conditions and medical facilities increase the risks for populations in developing countries from these prospective health threats. Similarly productivity declines in agriculture and fisheries would have a disproportionate impact on the developing countries, where many already subsist at the margin and food shortages are common. In addition, damage to materials: plastics, paints and buildings from increased ultraviolet radiation would be more severe in the tropics than elsewhere. The physical threats were real enough.

But there is another, less tangible factor that might motivate otherwise hesitant governments to join the international effort to repair the ozone layer. In the modern era, diplomacy has to take the confidence of popular opinion. In developing countries, a new wave of ecological consciousness is uniting populations and governments from every region in common concern for protecting the environment. Scientists, political leaders, international organizations and ordinary citizens were all part of this phenomenon. UNEP itself, led

by an Egyptian and the only major UN organization headquartered in a developing country, represented many ways the aspirations and dignity of the South; as the creator of Montreal protocol, UNEP had a strong institutional interest in its success. In short, failing to accept a share of responsibility and opting actively to threaten the ozone layer would not be an easy course for a government to follow.<sup>48</sup>

### Negotiating for Aid

The creation of a financial mechanism and the related question of modalities for transfer of technology proved to be the most difficult issue in the entire treaty revision process. This fact did not reflect any lack of good faith among the participating governments. Quite the opposite; there was broad agreement on the desired objectives, and the debates were characterized by a pragmatic and collaborative spirit and a virtual absence of political rhetoric. Developing countries desired some mechanism that would ensure contributions by industrialized countries to cover incremental costs of the phaseout and transfer of replacement technologies. For their part, industrialized country governments both accepted a sense of responsibility for the situation and recognized that their own efforts to restore the ozone layer would be jeopardized if the developing countries could not, or would not cooperate. Helping developing nations to bypass CFC technology would be

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48      Annual Report of UNEP, Executive Director 1990,  
Synthesis Analysis of Ozone Layer Depletion, pp. 10-40.

a good investment when measured against the potential costs of even greater damage to ozone layer.

But despite willingness in spirit, the negotiations proved extremely arduous. No other subject required so many meetings and consultations or generated so much documentation. There were many complex facets to the issues, and the governments sensed that they could be establishing precedents with possible important future implications for North-South relations.

The open-ended working group considered these subjects at four meetings: August and November 1989 and February and May 1990 - plus a major portion of its marathon lineup session in June. Led by Mexico and Venezuela (parties to the protocol) and India and China (non-parties), developing country representatives outlined four initial basic concepts:

- A discrete multilateral trust fund should be established within UNEP to meet all incremental costs to developing countries of complying with the protocol,
- the fund should be financed by "legally enforceable obligations" from industrialized countries, on some agreed burden-sharing basis,
- such contributions should be additional to rather than a diversion from, existing aid flows,
- "Free access ... and non-profit transfer" to developing countries of safe technologies should be guaranteed.<sup>49</sup>

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49 UNEP, Open-Ended Working Group first meeting of the parties to the Montreal Protocol, pp. 4-9.

Although industrialized country delegations acknowledged the equity of developing nations' concerns, it was evident that details of these proposals would require considerable negotiation. A continuing aim of donor governments was to ensure that assistance be used effectively and specifically to advance the protocol's objectives. For this reason, many donors were traditionally opposed to creating new institutions, especially ones that might be outside their control. Japan, the U.K., the U.S., and other major donors strongly preferred to channel aid through bilateral programs or existing multilateral institutions such as the World Bank. The proposed guarantee of technology transfer also raised thorny issues of intellectual property rights and patents.

At the February 1990 working group meeting, Mostafa Tolba proposed to the group that a new multilateral fund be established with mandatory assessed contributions by industrialized countries on a principle of additionality; that is, these contributions would be additional to the existing aid flows. Tolba viewed the new fund as a "safety net", supplementing existing bilateral and multilateral aid channels. He proposed that UNEP, as Secretariat of the protocol, have a central role in "catalyzing and coordinating" the work of other organizations assisting in the new mechanisms. Similar principles were encoed in a proposal submitted by China, Finland, the Netherlands and all other developing countries as a bloc.

During the ensuing debate, there was considerable resistance to creating a totally new institution. Representatives

of major donor countries stressed the difficult and time-consuming process involved. Tobla and many developing countries clearly hoped to maximize UNEP's own influence in the fund, while the major donor nations preferred a stronger role for the World Bank, with its extensive financial and development experience. This question, therefore, remained open.

The February meeting made progress in addressing several concerns of potential donors. Agreement was reached that funding assistance could be provided in the form of both concessional loans and grants rather than grants only.<sup>50</sup>

#### The Drive for Guaranteed Technology

For a number of newly industrializing developing countries technology transfer was a separate issue from financial aid. More was involved than simply subsidizing developing country purchases of CFC substitutes, or even establishing on their soil affiliates of foreign companies utilizing the most modern technologies. For countries such as Brazil, China, India and Mexico, there was a matter of principle involved; they could already produce CFCs on their own - therefore, they also wanted to be able to produce any new substance on their own, without being subject to potential exploitation by large foreign patent holders. It was a question of guaranteed access to new technologies, on terms they could afford.

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50 UNEP, Second Meeting of Open-ended Working Group to the Parties of Montreal Protocol, Geneva, 1990, pp. 7-10.

However, the idea of "preferential and non-commercial" transfer of technology, as introduced by the Mexican led group at the November negotiating session, posed a challenge and a dilemma to the industrialized world.

Even before substitutes became available, considerable technology transfer was in fact taking place to enable Article 5, parties to reduce their dependence on CFCs in the short-term and there was scope for more. Current priorities for such transfer included recycling, reclamation, and conservation technologies and replacing CFC usage with already available methods in aerosols and aqueous solvents. Industry representatives discussed with UNEP their plans to utilize technical guidebooks, electronic data bases, and training workshops to transfer new information to developing nations.<sup>51</sup>

It was clear that resolving the technology transfer issue was essential to bringing the major developing countries like (India, China and Brazil) under the protocol's regime - and that doing so would require further creative thinking and new forms of cooperation among industry, governments and international agencies.

#### A Matter of Additionality

During the weeks leading up to the working group meeting on these subjects in May, Tolba held informal consultations

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51 Benedick, R., 1991, Ozone Diplomacy, pp. 157-58.

on funding and transfer of technology with small groups of government representatives and with the World Bank, UNDP, UNIDO, WIPO and the ICC. The World Bank expressed strong interest in participation, regarding ozone protection as a major element in a new billion-dollar "Global Environmental Facility" (GEF). Bank President Barber Conable wrote Tolba in April 1990 that this "pilot facility ... could demonstrate a new form of collaboration between UNEP, UNDP and the World Bank.

The U.S. administration was greatly concerned that acquiescence in the proposed financial mechanism for ozone would create a precedent for a future global authority to deal with the vastly more expensive problem of greenhouse warming.

It can be said that whatever the rationale, the U.S. position was widely interpreted as a policy reversal that could upset the progress toward strengthening the Montreal protocol and attracting more developing country participation. It appeared to many that the U.S. had abandoned a commitment to the consensus on aid additionality that had been achieved by the February 1990 working group - even though technically the U.S. delegation had at that time only indicated an intention to raise the interpretation of the additionality concept at higher levels. Nevertheless, doubts were expressed about the reliability for the U.S. as a negotiating partner.

Representatives of industrialized and developing countries alike expressed "concern and disappointment" and "deep dismay" over U.S. decisions. An official of the World Bank declared

that it would participate only if additional funding was made available. All major donors, including the EC and Japan, reaffirmed their commitment to additionality. India and China made clear that they would not accede under these circumstances. There was a general call for the U.S. to reconsider its position before the London conference.<sup>52</sup>

The diplomatic strategy in the London Revisions, of the developing countries was historic. With the two most populous nations - China and India - agreed to sign in the Montreal protocol, the efforts of environmentalist the world over to prevent further depletion of ozone layer have got a fillip.

Difficult as the deliberations over details of the financial mechanism had been, they were less laborious than the parallel negotiations over access to technology and the obligations of developing countries under the protocol. In London Revisions, the problem was that both sides wanted iron-clad guarantees that were understandable from their perspective, but they were also mutually exclusive. Developing countries wanted to build into the protocol an assurance that, if they did not receive sufficient finance and technical help, they would not be obliged to implement the reduction schedules. For their part, industrialized nations recognized the reality of a linkage between external aid and the capability to renounce usage of CFCs and the other substances.

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52 Ibid., pp. 159-62.



The developing country case at this stage was expressed most forcefully by India's environment minister, Maneka Gandhi, and Mexico's sedulous Ambassador Mateos, proved to be an indispensable mediator in the debate, with the major donor-government spokesmen included EPA's Reilly and U.K. environment secretary Chris Patten.

Maneka Gandhi, advanced the demand for mandatory technology transfer in the starkest terms. She stated that money was irrelevant without accompanying access to technology; "The whole 21st century's survival will be based on ... knowledge". She was skeptical of claims by Western governments that they were unable to guarantee transfer of technology because the intellectual property rights were in private hands; she noted that governments intervene in the operations of the market all the time; "Either you (sell us) the technology or you change your laws or you change your patent rights ... start working on it".

The delegation heads of Brazil, China, Malaysia and others joined Gandhi in expressing apprehension that Western enterprises could use this situation to derive "exorbitant" profits. Malaysia's Minister of Science and Technology and Environment, O.A.S. Yong declared that denying access to modern technology amounted to "environmental colonialism". Gandhi added that "we have a problem (about) turning into a client state."<sup>53</sup>

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53 UNEP (1990) Report of the Second Meeting Parties, pp. 5-20.

The protocol language demanded by the developing country bloc would have, in effect, qualified their obligations by permitting unilateral abrogation of treaty requirements if an Article 5 party decided it had not received enough hold; "The obligation ... to comply ... will be subject to adequate financial assistance and "preferential and non commercial" transfer of technology.<sup>54</sup>

The debate took on a strident tone as stalemate continued. Gandhi went to the press, stating that neither India nor China would ratify the treaty and threatening to assist Article 5 parties in withdrawing from the protocol. India was, however, beginning to risk isolation. Privately, representatives of industrialized countries spoke of "environmental blackmail". Several developing country delegations, including Ghana and Latin American nations, expressed belief that market forces, reinforced by the emerging language in the protocol, would provide sufficient assurance of access to fairly priced technology. The Chinese delegation head, Wang Yangzu, in a gesture widely interpreted as a signal to Gandhi that China was capable of speaking for itself, called his own press conference late on June 28, 1990 to declare satisfaction with the progress of the negotiation and to indicate that China was now ready to accede to the Montreal protocol.<sup>55</sup>

Mrs Maneka Gandhi, asserted in London, "If the developed countries which created the problem do not remove the discrimi-

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54 Ibid., p. 24.

55 Ibid., pp. 26-30.

natory clauses and do not provide the CFC substitutes or finance the switchover, we will keep out of the protocol".

We will also continue to manufacture CFCs. She went on. And the threat worked. The developed countries relented to most of the India's demands.

The "polluter must pay" principle propounded by Maneka has paid dividends. The developed countries have now agreed to immediately set up a \$ 240 million fund, to be operated by World Bank, UNEP and UNDP to finance the developing countries switchover to CFC substitutes. This interim fund, for the next three years, is intended to finance the studies for identifying the modalities of the switchover.<sup>56</sup>

Impressed, other developing countries also began to look up to India for leadership. Some countries, such as Mexico, South Korea, Malaysia and Venezuela which had earlier signed the protocol, officially endorsed India's stand at the various review meetings and convinced the signatories about the need to incorporate these in the agreement.<sup>57</sup>

Though the developed countries have to phase out CFCs and halons by the year 2000, developing countries are allowed a 10 year grace period and have to stop using CFCs only by 2010. Even now, only half the battle is won. The real battle lies ahead - how to effect the switchover.

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56 The Times of India, 22 July, 1990.

57 The Times of India, 24 July, 1990.

The resolution of the impasse was ingenious, realistic and acceptable to all; on 29 June, India joined China in announcing that its delegation would now recommend adherence to the revised protocol.

### Conclusions

The Montreal protocol, as its designers had intended, was responding dynamically to changed conditions - and was setting valuable precedents along the way. A fatigued but visibly relieved Mostafa Tolba proclaimed on the night of June 29, 1990 that the second meeting (London Revisions) had not merely strengthened a treaty, but had written "a new chapter in the history of international relations".

The negotiators in London were actually aware of the precedents they were setting for approaches to other global environmental issues.

The parties and nonparties to the Montreal protocol had accomplished far more than significantly strengthening controls over ozone-depleting substances; they had created the first financial mechanism dedicated to protection of the global environment, and for the first time, the governments of industrialized countries had accepted a responsibility to help developing countries with modern technology.

Montreal protocol is "the beginning of a new era of environmental diplomacy. The history of ozone treaty reflects a new reality; nations must work together in the face of

global threats, because if some major actors do not participate, the efforts of others will be vitiated. The process of arriving at the agreement and the developments that followed its signing, represented new directions for diplomacy, involving unusual emphasis on science and technology, on market forces, on equity and on flexibility. For all of this, the protocol should prove to be a lasting model of international cooperation.

In the realm of international relations, there will always be resistance to change, and there will always be uncertainties - political, economic, scientific and psychological. The ozone protocol's greatest significance, in fact, may be as much in the domain of ethics as environment; it may signal a shift in attitude among critical segments of society in the face of uncertain but potentially grave threats that required coordinated action by sovereign states. The treaty showed that, even in the real world of ambiguity and imperfect knowledge, the international community is capable of undertaking difficult cooperative actions for the benefit of future generations. The Montreal protocol may thus be the forerunner of an evolving global diplomacy, through which nations accept common responsibility for stewardship of the planet.

## Chapter 5

### UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED) 1992, AND THE DEVELOPING COUNTRIES

- Conference Background
- The Issues at Stake
- Objectives of the Conference
- Preparatory Meet for 'Earth Summit'
- Diplomatic Strategy of the Developing Countries at Different Prepcom Meet
- The Rio Conference Action Plan
- An Assessment of the Conference

"The primary goal of the Summit will be to lay the foundation for a global partnership between developing and more industrialized countries, based on mutual need and common interests, to ensure the future of the planet .... We need to find a viable and equitable balance between environment and development".

- Maurice Strong, Secretary-General,  
United Nations Conference on  
Environment and Development

## Chapter 5

### UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (UNCED) AT RIO DE JANEIRO (1992) AND THE DEVELOPING COUNTRIES

#### 5.1 Conference Background

The concept of development that is environmentally sustainable was raised at the 1972, United Nations Conference on Human Environment at Stockholm. However from then until 1987, when "our common future", the report of the World Commission on Environment and Development (WCED) was published, little was done to integrate this dual concept in practical terms. Progress was made in specific instances but overall the environment of the planet deteriorated. Ozone depletion, global warming and other major environmental problems grew more serious.<sup>1</sup> The Brundtland Report of WCED, as it is also known (after Prime Minister Gro Harlem Brundtland of Norway who chaired the Commission), states that new development path is required, one that will sustain human progress, not just in a few places for a few years, but for the entire planet into the distant future. Thus, 'sustainable development' should become a goal for both developed and developing countries.<sup>2</sup>

Among the Reports recommendations was a proposal that regional and global meetings should be held to continue the

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1 "Earth Summit" in our hand, An Information Letter of UNCED, p. 1, UN Department of Public Information, 1992.

2 Our Common Future (1987), The World Commission on Environment and Development, pp. 4-5.

work of the Commission. On December 22, 1989, the General Assembly of the United Nations by Resolution 44/228 voted to accept an invitation from the government of Brazil to hold United Nations Conference on Environment and Development (UNCED), in that country from June 1-12, 1992, as an international forum to devise strategies that would fully integrate environment and development in every aspects of economic life and behaviour. The conference would take steps to reverse trends and establish the basis for a sustainable way of life on the planet as to move into the twenty-first century.<sup>3</sup> The conference, also known as "Earth Summit" will be attended at the levels of Head of the States and Governments.

The prospects of this conference in Brazil signifies a significant change of attitude in Brazil, which twenty years earlier at the Stockholm conference had led the opposition to international environmental restrictions. Concern both within and without Brazil about destruction of the tropical rain forest in the Amazon basin may have been a factor toward willingness to consider international environmental agreements formerly regarded as prejudicial to national sovereignty. In 1989 two groups of Latin American and Carribbean States, through the Declaration of Brazilia (31 March) and the Declaration of Manaus (6 May), although reiterating their insistence on sovereignty over resources, indicated their willingness to participate in environmental protection measures if linked to

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3 UN Resolutions and Decisions Adopted by the General Assembly 44th Session, 22 December, 1989, Resolution 223 (U.N. General Assembly Proceedings, 1989 December 22, pp. 1-3.



development and to relief from some of the burden of foreign debt.<sup>4</sup>

"The primary goal of the Summit will be to lay the foundation for a global partnership between developing and industrialized countries, based on mutual need and common interests, to ensure the future of the planet; states Maurice Strong, Secretary-General of the conference. "We need to find a viable and equitable balance between environment and development". It will seek agreement on concrete measures to reconcile economic activities with the need to protect the planet and ensure a sustainable future for all people.<sup>5</sup>

The General Assembly has decided that member states should be represented at the conference by Heads of State or Government. It is expected to be the largest summit meeting to date. International organizations, non-governmental groups and private-sector interests will also take part in an unprecedented attempt to mobilize people to set a new and more hopeful course for the future of humanity.

#### The Issues at Stake

In an effort to maintain the quality of the environment and achieve environmentally sound, sustainable development in all countries, the conference will address;

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4 Caldwell, L.K. (1991), International Environmental Policy; Emergence and Dimensions, p. 93.

5 Earth Summit News Letter (1992), p. 2.

- protection of land resources (combating deforestation, soil loss, desertification and drought),
- protection of the atmosphere (climate change, depletion of ozone layer, transboundary air pollution);
- conservation of biological diversity;
- protection of fresh water resources;
- protection of oceans, seas and coastal areas and the rational use of their living resources;
- environmentally sound management of biotechnology and hazardous wastes;
- prevention of illegal traffic in toxic products and wastes;
- improvement in the quality of life and human health;
- improvement in living and working conditions of the poor by eradicating poverty and stopping environmental degradation.<sup>6</sup>

#### Earth Summit Objectives

- The conference is expected to produce;
- an Earth Charter that will embody basic principles which must govern the economic and environmental behaviour of peoples and nations to ensure "our common future";
  - 'Agenda 21', a blueprint for action in all major areas affecting the relationship between environment and the

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<sup>6</sup> Notes for Speakers of UNCED, UN Departments of Public Information, p. 3.

economy. It will focus on the period upto the 2000 and extend into the 21st century;

- the means to carry out the agenda by making available to developing countries the additional financial resources and environmentally sound technologies they require to participate fully in global environmental cooperation and to integrate environmental considerations into development policies and practices;
- agreement on strengthening institutions in order to implement these measures;
- convention on climate change and biological diversity. These are being negotiated separately from conference preparations with the aim of having them ready for signature in Rio de Janerio.<sup>7</sup>

#### Agenda 21

It is likely that at the centre of deliberations in Brazil will be Agenda-21, a detailed blue-print for action to be taken up to the year 2000 and into the twenty-first century - by governments, development agencies and United Nations Organizations, as well as independent sectors, in every area where human (economic) activity affects the environment. Proposals for Agenda-21 are being negotiated in the working group of the UNCED preparatory committee (which will be discussed later in this chapter).

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7      Ibid., p. 4.

The Agenda calls for changes in the economic development activities of all human beings, changes that are based on a new understanding of the impact of human behaviour on the environment.

Agenda-21 will detail actions, based on the principles of sustainable development outlined in the Earth Charter. Overall objectives, major global goals and options for action to meet specific targets will be listed issue-by-issue and in reference to cross-sectoral concerns. Organizations responsible for carrying out actions will be named and completion times and costs will also be listed. Agenda-21 will not be legally binding but it is expected that governments adopting it will be highly committed to its implementation.<sup>8</sup>

#### Earth Charter

Earth charter, is a statement of principles setting out rights and obligations of all nations in relation to the environment will be signed each world leader present at the Summit. An example of one such principle, Mr. Strong has suggested, is the undertaking not to pollute a river upstream of where others must take drinking water downstream, a concept that has particular significance where waterways flow through several countries. The Charter would be morally but not legally binding.<sup>9</sup>

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8 Earth Summit in Focus: No. 1, p. 5. UN Publication, September 1991.

9 Ibid., p. 6.

Preparatory Committee (Prepcom)  
Meeting for Earth Summit

In conference diplomacy, the preparatory committee meets, in order to be ready to move from analysis of problems to negotiation of proposals for action. In (prepcom), the real process of negotiation start among different parties to chalk out for a final action plan.

The preparatory committee, open to all member states, has been established to oversee preparations for the 1992 conference under the Chairmanship of Ambassador Tommy Koh of Singapore. The prepcom conducts its work through three working groups, in addition to plenary.

The issues before the committee are divided among the working groups as follows;

Working Group - I - under the chair of Mr. Bo Kellian (Sweden), consider possible options for action to; protection of atmosphere - issues including global warming, depletion of ozone layer, deforestation, desertification and sustainable use of land, and conservation of biological diversity.

Working Group - II - under the chair of Bukar Shaib (Nigeria), deals with protection of oceans, seas and coastal areas, quality and supply of fresh water resources so that all people have access to safe, clean water and sanitation facilities; environmentally sound management of wastes including hazardous and toxic wastes, and illegal international traffic in such substances.

Working Group - III - under the chair of Bedrich Modan (Czechoslovakia) discuss the legal and institutional matters arising out of Agenda-21, as well as the question of principles of general rights and obligations in connection with the 'Earth Charter'.<sup>10</sup>

### Plenary Consideration

In plenary, the committee discussed "cross-sectoral" issues which underline all of the above issues. Some of these are; the raising of funds necessary for environmentally-sound development, the transfer of technology; the development of methods of accounting that integrate economic and environmental factors; and the relationship between the international economic situation and environment and development.<sup>11</sup>

The preparatory committee had held five sessions:

- A. An organizational meeting, March 1990, New York.
- B. First substantial session, August 1990, Nairobi.
- C. Two more substantive sessions; March-April 1991 and August-September 1991, at Geneva.
- D. A Final Session, March-April 1992, New York.

In preparation for the conference, ministerial meetings have been held by all five of the U.N. Regional Economic Commissions to discuss environment and development issues in

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10 'Earth Summit', UN Press Release, 1991, pp. 4-8.

11 Earth Summit in Focus No. 1, September 1991, pp. 6-7, UN Publication.

their regions. Each regional group adopted a platform to present its concerns to the conference.<sup>12</sup>

Many additional meetings have been held to provide proposals for the prepcom's work. Some have been gatherings of experts organized by UNCED Secretariat and various UN agencies, others have been initiatives of non-governmental organizations, representing women, youth, industrialists, scientists and trade unions.

As a part of preparations, reports have been submitted by member states to reflect national experiences and perspectives on environment and development. In many countries, NGOs and citizens groups participated in the drafting of the reports, which are being considered by the prepcom.

Maurice Strong, a national of Canada is the Secretary-General of the Earth Summit. Mr. Strong was also the Secretary-General of Stockholm Conference 1972, and he was the first Executive Director of UNED. Mr. Nitin Desai, a national of India, is the Deputy Secretary General. Committee officers were represented from different countries, and 39 states were elected as Vice-Chairman.

"It will be a difficult conference", Mr. Strong said, "but it will succeed because it has to succeed". To get action on the difficult issues the world faces will require special political focus and energy. That is why the U.N. General

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12      Ibid., p. 2.

Assembly organized this special conference. This is the first time there has been a legally-mandated global summit conference". He said, "we need to hold governments accountable and they need to be told what we want. The summit, and our collective future, is our hands".<sup>13</sup>

For 'Earth Summit' much of the work is taking place behind the scenes. It is a process of analysis, synthesis, report-writing, proposal making, meetings, negotiations and revision that hopefully, will lead to agreement in Brazil on issues of major importance to the continued survival of human, plant and animal life on the planet.

Diplomatic Strategy of the Developing Countries on Different Issues for 'Earth Summit' in Preparatory Meet

Developing countries have an important stake in the summit; their participation in the conference and its preparation is critical for its success. They fully share the hazards resulting from global environmental damage, although the problem has been caused mostly by the activities of industrialized countries, which have also gained most of the economic benefits.

On the question of forestry principle, preservation of biological diversity, population, climate change, transfer of technology and financial assistance, the developing countries made intensive negotiation with developed countries and formulate their strategy for the final action plan to the conference.

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13 Ibid., pp. 9-11.



There has been a wide divergence of views, often leading to acrimonious exchange between North and South in prepcom meeting of UNCED. With U.S. occupying one extreme position in the developed world and Malaysia, India, Indonesia, China, Brazil, Nigeria have had their own strategy to keep process moving towards the final conference.

Here is an attempt made to discuss the negotiating position of the developing countries on different global environmental issues (on the agenda of Earth Summit), at different prepcom meet.

A. Geneva (Prepcom), 1991 And Developing Countries

Given the scope of the Earth Summit, which aims at nothing less than arriving at some consensus on international policies to protect the global environment and assure sustainable development, many participants voiced concern that reaching agreement on the myriad issues that underline this goal may well be impossible.

After three weeks of deliberations in Geneva in early April 1991, the second session of prepcom of government delegates moved forward in its planning in some issues for UNCED. On behalf of third world countries the Malaysian delegate suggest that in the spirit of the "obligations and rights" of all countries, forests covered under the proposed convention be made truly universal by including boreal forests (Northern Europe) and temperate forests those found mostly in the North.

In other words, he argued that any discussion or decisions made by the 'Earth Summit' must include the Northern countries as well as the South ensuring that the politics of implementation be universal.<sup>14</sup>

In the early stages of Geneva prepcom, some industrialized countries called for an international agreement on forestry that would ban cutting the remaining tropical rainforests. The forests were seen as necessary "sinks" for converting carbon dioxide and other climate-changing gases to oxygen, and as homes for the richest variety of biological diversity.

Developing countries agreed with the importance of the issue, if not the strategy. Led by Malaysia, they called for an agreement that would include the forests of North and South. Some other important strategy of the developing countries are;

- To many indigenous peoples, forests are home. They have lived in the forests for thousands of years, making little impact on them, but they fear for their way of life.
- To more than two billion people in developing countries who lack other options, forests are an essential source of fuel for cooking.
- To government leaders, forest are sovereign resources which countries have the right to exploit.

Developing countries are also desperate to provide basic necessities for their people and to earn foreign exchange

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14 Earth Summit in Focus No. 2, 1991, U.N. Publications, p. 1.

to pay their debts - due to economic pressures to exploit or clear their forests.

Developing countries question why they should bear the economic burden for solving a problem created largely by pollution in the North; most greenhouse gases are caused by the burning of fossil fuels in industrialized countries.<sup>15</sup>

These conflicting views between North and South surfaced in the Geneva prepcom and the developing countries strongly resist to an international forestry convention.

Some other point of contention in the Geneva prepcom were, financial resources, urban poverty and human settlements. In general, Northern governments do not want to start talking about how much money needs to be raised in regards to "new and additional resources" until they have a clear picture about what the shape and size of the programmes they assist in funding will be.

The developing countries demanded that it will be difficult to continue to develop elaborate universal programmes that would require their resources at the national level until they are assured that Northern governments will make the necessary "additional" financial commitments.<sup>16</sup>

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15 Ibid., pp. 3-5.

16 Prepcom for UNCED, U.N. General Assembly Document A/Conf.151/PC/86, pp. 2-5.

B. New York Prepcom March 3 - April 4, 1992 and Developing Countries

From March 3 to April 4, 1992, hundreds of delegates and representatives of non-governmental organizations (NGOs) from all over the world preparing for 'Earth Summit' ended in New York after five-week long discussions without reaching any agreement on substantive issues. Vast differences continued to exist between developed and developing countries regarding financial mechanism, transfer of environmentally sound technology, forestry principles, biological diversity and climate change.<sup>17</sup>

On the issue of financial mechanism, the conference secretariat has calculated that \$ 125 billion in foreign aid will be needed by the developing countries every year for cleaning-up operation and improving the environments. But several delegates said the figure is on the lower side. Besides, the developing nations will themselves have to find four or five times this amount. The industrialized countries tried to extend the concept of Overseas Development Assistance (ODA) to include aid provided by third world governments like India, to neighbours, arguing that there was no "definition" of ODA and all government aid should be taken into this category.

But the major stumbling block was the insistence by the industrialized countries that G-77 agree to the World Bank's Global Environmental Facility (GEF) as the "appropriate mechanism" for funding the environment problem. G-77 has been

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17 Times of India, New Delhi, 18 April, 1992.

insisting for the creation of a separate facility which is more democratic and transparent. The developing countries wanted to have a say in the distribution of funds. They had suggested creation of "Green Fund". The third world has also suggested that the "Green Fund" be set up under the auspicious of the United Nations.

The developed nations offered to reform the GEF to make it more democratic and transparent, but nothing specific was mentioned. As a concession, the third world agreed to accept GEF as "an appropriate mechanism" but not "the appropriate mechanism".<sup>18</sup>

Backed by the third world, India's minister of state for environment, Kamal Nath took a firm stand that national sovereignty has to be respected over nation's natural resources and there is no question of the developing countries subjecting their plans for development to be monitored by an international agency. He also insisted that there could be no "conditionalities" to aid in support of the programmes drawn up for sustainable development in harmony with national priorities, and that any global plan of action shall have to be based on "equal partnership". In this context, the developing countries had said a firm "No" to any international convention on forest and forest management as it would impinge on national sovereignty, which the U.S. and other industrialized countries had been keen on. It is significant that Brazil, the host country

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18      The Times, London, 25 April, 1992.

for the Earth Summit, had made this move supported by the developing countries. Not much headway had been made on the conventions, but the developing countries made significant gains on the Earth Charter.

With regard to transfer of environmentally safer technologies to developing countries, India demanded a mechanism for concessional and preferential transfer must be found. Mr. Kamal Nath said, "if developing countries are to be discard present technologies in favour of modern, state of the art technologies, those who have these technologies must voluntarily pass them on for common use".<sup>19</sup>

A general agreement has been reached on the climate change convention at New York into account the contrasting situations in the developed and developing countries. Global emissions of gases (CFC in particular) are estimated to be 1.2 million tonnes per year. Over 28 per cent of such emissions are produced by U.S. alone, 11 per cent by Japan, 11 per cent by erstwhile USSR and 27 per cent by EC countries. All these developing countries together contribute less than 5 per cent of the global emissions.

The developing countries pointed that the responsibility rests on those countries whose per capita emissions are excessively high. India has demanded the creation of a "climate fund" within the ambit of the framework convention on climate

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19 The Times of India, New Delhi, April 3, 1992.

change being worked out as a part of UNCED.

The refusal of the U.S. and some other industrialized countries is due to the fact that any reduction in the gas will have to be achieved only by slowing down the growth of economy, already hit by recession.<sup>20</sup>

On biological diversity, developed countries generally regard as sacrosanct the bio-technology created by their own scientists and corporation, but see no reason to pay for biological resources obtained from developing countries. India has made it clear that biodiversity and sharing of biotechnology were inseparable issues. Access to bio-material has to be linked to access to bio-technology, sharing of results of Research and Development and commercial profits derived from biomaterials with country of origin and also (R & D) within such country.

India has also told the developed countries that if access to biotechnology or its products is going to be denied to the developing countries on grounds of protection of Intellectual Property Rights (IPR), then such countries specially those providing the genetic material will have little enthusiasm for additional measures to conserve biodiversity.

The developing countries categorically stated that they cannot compromise, the principle of national sovereignty over

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20 The Times of India, March 30, 1992.

their natural resources.<sup>21</sup>

The New York prepcom also failed to make any headway on the issue for curbing consumption by the industrialized countries. The third world argued that unsustainable consumption and production and the life style of the rich had been a major cause of environmental degradation.

When the issue came up in the plenary, the U.S. moved its own formulation which put poverty and excessive consumption on equal footing for environmental degradation. Speaking on behalf of G-77 India rejected the formulation. Putting poverty on a par with consumption is "unjustified".<sup>22</sup>

C. 'G-77' Environment Meet at  
Kualalumpur

The environment ministerial conference of developing countries held in Malaysia's capital Kualalumpur from April 27-29, 1992, took the final decision of third world for 'Earth Summit'. In the conference 54 developing countries participated and G-7 attended as observer. At this important last preparatory meet before the Summit, the developing countries have been able to harmonise their approach on at least ten issues considered to be of vital importance for the success of the Rio Summit.<sup>23</sup>

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21 The Times, London, 31 March, 1992.

22 The Times, London, 3 April, 1992.

23 The Times of India, 28 April, 1992.



The 'Kualalumpur Declaration' has called upon the developed countries to come out with firm commitments as regards "new and additional funding", distinct from Overseas Development Assistance (ODA) commitments. Although the participating countries at the meet got feelers from the U.S., Australia, Britain and EEC that they would be willing to share the cost of cleaning the environment with the developing countries the fact remained that fundamental differences continued to persist. The developed countries still insist on the mechanism of GEF functioning within the ambit of the World Bank for funding purposes, whereas the G-77, the biggest grouping of the developing countries, has asked for a "green fund" which would be more democratic and transparent. As the India's Minister of Environment, Mr. Kamal Nath argued at the meet, echoing the opinions of several developing countries, the GEF is completely donor weighted in relation to major policy decisions as such is not acceptable to the developing countries.<sup>24</sup>

India favoured the imposition of "environmental tax" on the developed countries to pay for the global environmental clean-up. Enunciating the Indian position, the environment minister, Mr. Kamal Nath, said the tax should be largely of a compensatory nature and would predictable ensure the transfer of financial resources to the developing countries to take up environmental programmes.

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24 The Observer, London, 29 April, 1992.

25 The Hindu, Madras, 29 April, 1992.

As regards the transfer of technology, the meet has called for the transfer of appropriate environmentally sound technology from the North to the South on a non-commercial and preferential basis. Here the U.S. and other developed countries strike a fundamentally different role. The U.S. is advocating partnership for sustainable development which in reality means the setting up of joint ventures in the developing countries employing western technology.<sup>26</sup>

India asked the industrialized countries to provide appropriate environmental friendly technologies to developing nations and not to dump obsolete ones discarded by the West. Initiating a discussion at the transfer of technology session of the ministerial conference of the developing countries, Mr. Kamal Nath, said developing countries today required technology in four major areas. These are for cleaner and more efficient production, minimising energy requirement, waste and pollution, prevention of air and water pollution, implementation of obligations under specific conventions for agreements such as Montreal Protocol and for mitigation of the adverse impact of environmental damage caused by the industrialized world, specifically concerning waste disposal and management.

He said, "the new global partnership required distinct and separate mechanisms to ensure the transfer of new and additional financial resources and environmentally sound

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26      The Times of India, 30 April, 1992.

technology on preferential and concessional and non-commercial terms to enable developing countries to make the technological transition.<sup>27</sup>

Malaysia, which has taken the lead in defining the third world viewpoint, particularly on tropical forestry, has given the conference some significance. The Malaysian Prime Minister Dr. Mahathir Mohamad, attacked the North for claiming ownership of the natural heritage of the South, after having destroyed its own. He specifically cited the instance of the Western boycott of Malaysian timber in order to protect tropical forests.

"If it is the interest of the rich that we do not cut down our trees, then they must compensate us for the loss of income", he said. The extraction of timber could be halved if the West doubled the prices it paid for it. He called upon Europe and America to restore their farmlands to their original condition before the trees were hacked down to make way for agriculture. In doing so they are ignoring the hundreds of thousands of people whose lives depend on the timber industry. They ignore the loss of government revenue with which we subsidize and support our people particularly the poor. In other words, they want to preserve the tropical forest in the interest for them and at the cost of developing countries.

Dr. Mahathir also pointed out, "If we sincerely believe in equity and burden-sharing, why not reforest the deserts and

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27 The Times of India, 29 April, 1992.

those vast farms in Europe and America which are subsidized to limit food production. After all, all trees provide oxygen - not just tropical hardwoods.<sup>28</sup>

### Sound Principles

India's Minister for Environment and Forests, Mr. Kamal Nath, told the conference on behalf of the third world strategy for Rio conference that the establishment of a new global partnership in tackling environmental issues should be based on sound principles and not on charity or on unilateral action.

The new global partnership should be based on common concern, transparent, responsibility and credibility. For this there are four essential ingredients for building the new global partnership;

- Thrust - giving equal weightage to the concern of all nations;
- Goal - focussing on the restoration for the entire environment through a massive programme of regreening the earth;
- Nature - requiring the U.N. a stronger role in dealing with these matters; and
- Continuity - of the new partnership calling for separate mechanisms to ensure transfer of technology and finance for sustainable development.

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28 D.S. Mahathir Mohamed, "End North's Eco-Imperialism", The Times, London, May 5, 1992.

He said, there can be no partnership without equity, there can be no agreement ignoring realities and there can be no credibility without responsibility.<sup>29</sup>

In all the negotiations in the run-up to the UNCED meet, developing countries had made it clear that the central issues would be protection of sovereignty of the individual countries, economic and social development and poverty alleviation and there would be no compromise on these. All the developing countries have spoken almost with one voice on these issues in all the preparatory committee meetings.

The developing countries are fully conscious of the responsibility to conserve environmental and believes that every nation in the world has a similar responsibility. However, it is also necessary to stress the fact that environment should not and cannot be used as an instrument for setting up a new global hierarchy. An unjust international economic order cannot be replaced by an equally unjust environmental order.

#### The Rio Conference

After more than two years of hectic negotiations between North and South on global environmental issues, they finally met at Rio de Janeiro of Brazil from 3-14 June 1992, for the historic United Nations Conference on Environment and Development (UNCED) or known as 'Earth Summit'. The UNCED marked the beginning of a process that will launch a new global partnership.

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29 The Times of India, 28 April, 1992.

No international conference has so far dealt with such a range of development and environment issues and their interrelationships, nor has it dealt with such far reaching decisions governing the interaction among nations - with a variety of strategies and actions.

It was an "historic moment for humanity", according to Maurice Strong, Secretary-General of the UNCED, at which 172 governments agreed to act to ensure the sustainable development of the planet. The 'Earth Summit' was the largest-ever gathering of world leaders.<sup>30</sup>

Agreeing that the cost of not acting could outweigh the financial costs of implementing the programmes, the conference adopted three major texts: Agenda-21, a comprehensive blueprint for global action in all areas of sustainable development; the Rio Declaration on Environment and Development, a series of principles defining the rights and responsibilities of states in this area; and a set of principles to underlie the sustainable management of forests worldwide.

Two legally binding conventions, aiming to prevent global climate change and eradication of biologically diverse species were opened for signature in Rio. During the conference, they were each signed by representatives of more than 150 countries, including many heads of states and governments.<sup>31</sup>

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30 UNEP Newsletter, Asia-Pacific, vol. 9, no. 3, July-September 1992, "Earth Summit concludes historic meeting", pp. 1-2.

31 Ibid., p. 3.

In the backdrop of a world which has been starkly divided between the rich and the poor - between those who have carelessly exploited the resources of the earth to reach their present level of material comfort, and continue to callously exploit the resources in an effort to sustain a pattern of living that can only be termed as conspicuously wasteful - the realities of the developing countries have already gone far above and beyond what could be expected at the various preparatory meetings for UNCED cannot be overlooked.

Let us discuss, how the developing countries achieved their goal at the Summit meeting on different issues by negotiating with developed countries.

1. Agenda-21: The Programme of Action

Agenda-21, adopted by the UNCED on 14 June 1992, is the international community's response for environmentally sound development. It is a comprehensive programme of action to be implemented from now and into the twenty-first century - by governments development agencies, United Nations organizations and independent sectors groups in every area where human (economic) activity affects the environment.

Most of Agenda-21 had been finalized during sessions of the preparatory committee for the conference, which began meeting in March 1991. Finally, it was adopted in Rio Conference.

Some of the important items of the Agenda-21 were;

- A. Social and Economic Dimensions
- International Cooperation to Accelerate Sustainable Development in Developing countries;
  - combating poverty;
  - changing consumption patterns;
  - promoting human health and human settlements,
  - policy-making for sustainable development.
- B. Conservation and Management of Resources for Development
- protecting the atmosphere;
  - an integrated approach to land-resource use;
  - combating deforestation;
  - meeting agricultural needs without destroying the land;
  - sustaining biological diversity;
  - environmentally sound management of biotechnology;
  - safeguarding the ocean's resources;
  - safe use of toxic chemicals;
  - management of radioactive wastes.
- C. Strengthening the Role of Major Groups
- action for women; sustainable and equitable development;
  - social patterns of sustainable development.
- D. Means of Implementation
- financial resources and mechanisms;
  - making environmentally sound technology available to all;
  - science for sustainable development;
  - promoting environmental awareness;
  - building national capacity for sustainable development;



- strengthening institutions for sustainable development;
- International Legal Instruments and Mechanisms;
- Bridging the data gap.

Even though it is non-binding, all the states committed to implement for environmentally safe growth.<sup>32</sup>

## 2. Financing

The major stumbling block at the Rio Summit was the question of funding of Agenda-21 for environmental measures that need to be taken in the next century. Most funding for Agenda-21 is to come from each country's own public and private sectors. However, the provision of new and additional external funding is considered necessary if developing countries are to adopt sustainable development practices. Grants and loans in the form of official development assistance (ODA) would be the basis for this.

The G-77, group of developing countries has proposed 2000 A.D. as the deadline for the North to pay 0.7 per cent of its gross domestic product as overseas development assistance. The U.S. which now pays 0.23 per cent of its GDP, has opposed any such deadline. Only European countries actually support this minimum level of assistance and have already a level of 0.5 per cent. Norway pays more than one per cent of its GDP.

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32 Earth Summit, Final Text, Press Summary of Agenda-21, pp. 1-30. Department of Public Information, United Nations, New York, 1992.

Brazil which was trying to broker agreements in the hope of a successful earth Summit put forward a compromise proposal on financing, which the G-77 rejected.

The South also emphasized that the reformed of GEF, run by the World Bank on behalf of two UN agencies, should only be one of mechanisms for funding environmental schemes, not the sole. Brazil which like other Latin American countries is being seen as waging a proxy war on behalf of its big northern neighbour -

- has advocated the GEF as the single mechanism. Several developing countries criticised Brazil's stand on financial mechanism.<sup>33</sup>

After protracted negotiations, including one eighteen-hour session, agreement was reached on a compromised text whereby "developed countries reaffirm their commitments to reach the accepted UN target of 0.7 per cent of GNP for ODA and, to the extent that they have not yet achieved that target, agree to augment their aid programmes in order to reach that target as soon as possible and to ensure a prompt and effective implementation of Agenda-21.

Some countries agreed or had agreed to reach the target by the year 2000. Most donor countries including most of the Nordic states, the Netherlands and France, supported the 2000 target date. The U.K. and Germany did not. The U.S. was not

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33 Times of India, June 7, 1992.

involved in these discussions since that country has never made commitment to 0.7 per cent of GNP to ODA and considered itself unable to "reaffirm" this figure.<sup>34</sup>

It was decided that the Commission on Sustainable Development (CSD) would regularly review and monitor process towards this target. This review process should systematically combine the monitoring of the implementation of Agenda-21 with a review of the financial resources available. Those countries which have already reached the target are to be commended and encouraged to continue to contribute to the common effort to make available the substantial additional resources that have to be mobilized.<sup>35</sup>

Funding for Agenda-21 and other outcomes of the conference should be provided in a way which maximises the availability of new and additional resources and which uses all available funding resources and mechanisms. These include, among others:

- The multilateral development banks and funds;
- The International Development Association IDA and regional and subregional development banks;
- Voluntary contributions from NGOs will be increased;
- GEF managed by UNDP, UNEP and World Bank should be restructured to encourage developing countries participation in decision-making;

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34 Disappointment and Hope at Rio: Third World Economics, Trends and Analysis, pp. 20-22, 15 June - 15 July, 1992.

35 Ibid., p. 10.

- Increased private funding and direct investment encouraged through national policies and joint ventures;
- Debt relief measures for low and middle income developing countries, including debt swaps.
- Innovative financing; new ways of generating funds should be explored, including fiscal incentives, tradeable permits and reallocation of resources presently committed to military purposes.

The estimated annual costs (1993 - 2000) of implementing the activities in Agenda-21 in developing countries are over \$ 600 billion, including \$ 125 billion in international grants or concessional financing. It is likely that discussions on donor commitments will continue in other forums and at the U.N. General Assembly.<sup>36</sup>

### 3. Transfer of Technology

To develop sustainably, all countries need access to and the capacity to use technology that preserves resources and protects the environment. Environmentally sound technologies are less polluting, use all resources more sustainably, recycle more of their wastes and products and handle residual wastes better than the technologies for which they substitute. They include both processes for reducing waste products and "end of pipe" treatment of pollutants.

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36 Earth Summit, Final Report Text, Press Summary of Agenda-21, pp. 32-33.

Transfer of technology includes the exchange of knowledge, goods and services and organizational procedures. Developing countries need support to build their economic, technical and managerial capabilities. This will require a long-term joint effort by enterprises and governments supplying and receiving technology; together with the systematic training of crafts persons, technicians, managers, scientists, engineers and educators.

Prior to Rio, it had been agreed in principle that developing countries need to have access to environmentally sound technologies, both proprietary and those not covered by patents, if they are to make the transition to sustainable development. Disagreement focused on the terms of transfer of such technology; whether it would be on commercial or concessional terms, what role international business would play as a vehicle for its transfer, and on ways to avoid abuse of intellectual property rights.

At Rio, it was agreed that governments should promote and finance developing country access on favourable terms including concessional and preferential treatment. However, while enhanced access should be "promoted, facilitated and financed as appropriate", the compromised text states that "concepts and modalities for assured access ... continue to be explored".<sup>37</sup>

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37 UNEP, Newsletter on Earth Summit, 1992, July-September, p. 3, vol. 9, no. 3.

#### 4. Desertification

The conference recommended that the General Assembly establish an intergovernmental negotiating committee to draft an international convention to combat desertification, with the aim of completing it by June 1994.

The agreement was made possible by Europe's efforts at obtaining backing from the U.S., which was locked in a struggle to modify a controversial document on preserving the world's forests.

The African nations threatened to oppose a convention on forests unless an agreement on desertification was reached. So such a convention is important to many African countries.<sup>38</sup>

#### 5. Atmosphere

To protect the atmosphere, Agenda-21 focusses on four programme areas: (1) uncertainties in related scientific knowledge; (2) sustainable development in regard to energy, transport, industry, and land and marine resources; (3) stratospheric ozone depletion; and (4) transboundary air pollution.

Proposals in this chapter 9 of Agenda-21, do not oblige any government to exceed the provisions of the 1985 Vienna convention for the protection of ozone layer, the 1987 Montreal protocol and of 1990, London revisions, or the 1992 United Nations Framework Convention on climate change.

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38 Ibid., p. 4.

Activities in this area will require an estimated \$ 640 million per year (1993 - 2000) in international grants or concessional financing.<sup>39</sup>

6. Oceans and Marine Resources

More than 70 per cent of the earth's surface is covered by water. The activities of humans on land are a major threat to sustaining the biological richness of oceans and coastal areas.

The Rio conference resolved a divisive issue by requesting UN General Assembly to convene an international conference on conservation and management of straddling and highly migratory fish stocks, consistent with U.N. convention on the law of sea (UNCLOS).<sup>40</sup>

7. ✓ The Rio Declaration

The Rio Declaration on Environment and Development, a set of 27 principles outlining the rights and responsibilities of states in that area, was adopted without change from the text negotiated at the final meeting of the preparatory committee in May (see Annexure 7 for Rio principles).

The Rio Declaration was originally conceived as an "Earth Charter", a document the industrialized nations believed should stress the need to protect the environment. The Group-77

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39 Final Text of Agenda-21, pp. 9-11.

40 Ibid., pp. 20-22.

favoured a more detailed proclamation that reflected a greater balance between environment and development.

The Rio Declaration is not legally binding. However, it is anticipated that, as with the U.N.'s declarations on human rights, governments will have a strong moral commitment to adhere to its principles.<sup>41</sup>

#### 8. Forest Principles

At the start of preparations for the Earth Summit, it was hoped that a legally binding convention on forestry could be negotiated and ready for signing, together with agreements on climate change and biodiversity at the conference.

In the early stages of negotiations, the industrialized countries called for an agreement that would ban the cutting of tropical rain forests, where much of the world's present deforestation is occurring. In the prepcom of developing countries for Rio conference, they unanimously decided not to sign for a forest convention. In the conference also Malaysia and India objected.

India's Environment Minister, Mr. Kamal Nath objected to the use of world "globalisation" of forest wealth as it perceived it as a community resources used for fodder and fuelwood and did not see it as a timber resource.<sup>42</sup>

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41 Earth Summit, Final Text of Rio Declaration, October 1992, UN Publication, p. 1.

42 Times of India, 7 June, 1992.



The U.S. was trying its damndest to win support for the statement on forest principles which it wants signed in Rio, possible as a quid pro quo for agreeing at least partly to the terms of the biodiversity convention. It also hopes to use this as the basis for negotiating a forestry convention in future.<sup>43</sup>

The negotiations produced a set of principles for the sustainable management of global forests which could form the basis for post-Summit negotiations on an international legal agreement on forestry. These principles were finalized and adopted at the Earth Summit. Among the key principles are:

- States have, in accordance with the Charter of UN and principle of International Law, the sovereign right to exploit their own resources pursuant to their own environmental policies and have 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.
- Specific financial resources should be provided to those developing countries which establish forest conservation programmes, in order to stimulate economic and social substitution activities.
- Developed countries should make efforts towards "greening the world" through reforestation and forest conservation.

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43 The Times, London, 8 June, 1992.

- Trade in forest products should be based on international trade law, unilateral measures to restrict or ban trade in timber or forest products should be avoided; and
- National policies and strategies should provide a framework for increased efforts, including the development and strengthening of institutions and programmes for the management, conservation and sustainable development of forests and forest lands.<sup>44</sup>

Due to the opposition of developing countries for a legally binding international convention on forestry, who feel that it would infringe on their sovereign right to exploit their forests as economic resources, these principles were non-binding.

#### 9. Climate Change Convention

The ground work for the Framework Convention began in 1988 when the U.N. General Assembly adopted resolution 43/53 recognizing climate change as a common concern of humanity. That year, UNEP and the U.N. World Meteorological Organization (WMO) established the Intergovernmental panel on climate change (IPCC) to investigate the potential severity and impact of global climate change and to suggest possible policy responses. The IPCC's First Assessment Report was published in August 1990 and discussed at the second world climate conference later that year. In 1989, a framework was made on general

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44 Earth Summit, Final Text, Forest Principles, U.N. Publication, October, 1992, pp. 5-10.

principles and obligations in various areas. In December 1990, the General Assembly set up the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change (INC) to be supported by UNEP and WMO. Negotiations began in February 1991 and ran parallel to the work of the committee preparing for the 'Earth Summit' in the hope that a convention would be ready for signing by Governments in Brazil.

After negotiations which spanned 15 months, the U.N. Framework Convention on Climate Change was finalized in May 1992. It was opened for signature of the UNCED - in Rio de Janeiro, Brazil on 4 June, 1992.

As of mid October 1992, 158 countries had signed the Convention, including the European Community. In order for the Convention to become law, it must be ratified by national legislatures of 50 countries, a process that may take two years.

The aim of this agreement is to stabilize atmospheric concentrations of greenhouse gases at levels that will prevent human activities from interfering dangerously with the global climate system. In signing the convention, governments agree to reduce emissions of the warming greenhouse gases to "earlier" levels by the end of the decade. States are required to report periodically on their level of emissions and efforts to slow climate change. The target of reducing carbon dioxide emissions to 1990 levels by the end of the decade - advocated by the European Community, Japan and most other countries,

but opposed by the United States is stated as a goal to be met voluntarily.

To enable developing countries to meet their obligations under the convention, developed countries agree to provide "new and additional" financial assistance. Such assistance is, for the time being, to be channeled through the GEF.<sup>45</sup>

10. Convention on Biological Diversity

The convention on biodiversity was one of the major treaties tabled at the Earth Summit. Since most of the planet's biodiversity lies in the South while most of the benefits from its commercialisation accrues to the North, these negotiations have sprung froth deep and intense conflicts between corporate interests and health and environmental security.

The UNEP first called on Governments to consider an international legal instrument for the conservation and rational use of biological diversity in 1987. The following year UNEP established an Ad Hoc Working Group of Experts on Biological diversity, which held three sessions between November 1988 and July 1990. On the basis of group's final report, UNEP established a working group of legal and technical experts to negotiate a convention. This group held two sessions and then was renamed the Intergovernmental Negotiating Committee for a Convention on Biological Diversity (INC). The INC completed

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45 Earth Summit, Final Text, Convention on Climate Change, U.N. Publication, October 1992, pp. 1-17.

negotiations for the convention in five sessions, between June 1991 and May 1992.

The Biological Diversity Convention is intended to ensure effective international action to curb the destruction of biological species, habitats and ecosystems. It was opened for signature at UNCED, on 5 June 1992. At the conference 157 countries signed the convention, including 71 heads of state and government. In order for the convention to become law, it must be ratified by at least 30 countries, usually by the national legislature.

The most important provisions of the Convention include:

- The requirement that countries adopt regulations to conserve their biological resources;
- The legal responsibility of governments for the environmental impact in other countries of activities by their private corporations;
- Funding to assist developing countries in implementing the Convention, to be administered through the GEF, pending the establishment of a new institutional structure
- The transfer of technology to developing countries on preferential and concessional basis;
- Regulations of biotechnology firms;
- Access to ownership of genetic material;
- Compensation to developing countries for extraction of their genetic materials.<sup>46</sup>

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46 Earth Summit, Final Text, Convention on Biological Diversity, U.N. Publication, October 1992, pp. 1-23.

After negotiations have completed, a number of countries expressed reservations on various aspects of the convention but later agreed to sign. The United States did not sign on the grounds that provisions in the convention would unduly restrict the biotechnology industry in that country.

### An Assessment of "Earth Summit"

For many involved in the two-years preparations for the conference, hopes for the Summit ran high, even that it might be the last chance for humanity to save the planet from environmental destruction. Against this measure some found the results disappointing.

Although Agenda-21 had been weakened by compromise and negotiation, it was still the most comprehensive and, if implemented, effective programme of action ever sanctioned by the international community. The Rio Declaration and the statement of forest principles needed to evolve further, toward a "true" earth charter and a legal instrument on forests. On the finance and technology transfer there had some agreement but not sufficient commitment.

Actual financial commitments from the North were, however, rare, and this is the reason for the deep disappointment during and at the end of the Summit. Without the commitment of the industrialized countries, which hold all the important levers of world economic and political power, it will be difficult, if not possible, to tackle the causes of environment and development.

The two legal agreements were significant. However, the climate change convention needed protocols that would set firm targets and time-tables for action. The biodiversity convention had not been accepted by the at least one or the nations necessary for it to be implemented effectively.

✓ Some Northern countries, for example, particularly the U.S. were adamant in refusing to commit themselves to change their unsustainable patterns of life style which is very unfortunate for the success of Rio declaration.

✓ The Southern response in UNCED was that if the rich North was not willing to cut their excess consumption, what right could it have to ask the South to make sacrifices when many people are too poor to further tighten their belts. And Northern were not prepared to commit themselves seriously to helping the South carryout the transition to sustainable development.

There was thus despondency among developing country delegates and political leaders who felt that the North really does not care about the needs of the South (despite the off-quoted rhetoric about the new global partnership), and worse that in a unipolar new world order, the South is too weak to fight for recognition and respect.

The main energies of third world political leaders and officials at the Rio Summit were thus spent skirmishing on the margins since the real economic issues, the South's need for better terms of trade, higher export prices, debt relief,

reforms in global economic and financial institutions - were not even in the agenda.

A number of senior officials and experts from the South were also apprehensive that the position of third world countries will worsen further after the Summit. Gamani Corea, a Sri Lankan who was many years Secretary-General of UNCTAD said, 'Earth Summit held little or no promise for success'. "These days it is a great achievement to agree on what to say, not on what to do", was his wry comment.

At a public forum in Rio, Corea said the current exercise to restructure the U.N. seemed designed to reduce the role of the U.N. in global economic issues. That role would be transferred to the World Bank, GATT, IMF which are all Northern controlled.<sup>47</sup>

Malaysian envoy to the U.N., Tan Sri Razak Ismail said that Rio would not mark a watershed. After the Summit, there would be more of the same, with the existing power structures being perpetuated. "The G-7, the OECD and the rich and not the South or the poor will inherit the world".

Veteran Indian analyst and Sun editor, C. Raghavan predicted that Uruguay Round Negotiations under GATT would, if agreement is reached, contradict, some of the critical elements of UNCED's agenda-21. For example, the agreement on technology transfer (under which the South enjoy some concessions

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47      Disappointment and Hope at Rio, Third World Economic,  
16 June - 15 July, 1992, p. 3.



over transfer terms) could be superseded by the GATT round in which the North is strongly arguing for intellectual property rights regimes to be universally introduced. Developing countries would then have to pay for patents and would face difficult obstacles to their own technological development.<sup>48</sup>

There was a general feeling among developing countries delegates as well as NGOs that event outside the UNCED process were threatening to weaken the South further and to endanger whatever positive elements exist in agenda-21.

Despite these legitimate fears arising from the lack of North's commitment at the Earth Summit, most participants could not help to also holding glimmers of hope at the end. The two year UNCED process has after all brought both North and South back on the same table, the first time in almost two decades that the North has shown a serious interest in talking about the world affairs with the South.

In the process, government officials and political leaders have become more conscious of the environmental crisis, whilst Northern officials and especially NGOs have become much more sensitised to the development needs and perspectives of the South.

As Maurice Strong put it in his conference closing speech: "Poverty, inequality, the terms of trade, external debt, the flow of resources out from the South - today these issues have

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48 Ibid., p. 4.

become a crucial part of the equation when the environmentalist talked about. This is a crucial result of UNCED. The environment debate will never be the same again".

UNCED has revealed that a new North-South partnership is required if the world is to be saved from ecological disasters.

Stating that "you cannot save the world in a one-shot quick fix", Mr. Strong also noted, "we simply don't have another twenty years to squander. We have to make sure that the road from Rio is a fast track". Hopefully, the United Nations Earth Summit will be seen as a quantum leap forward on that road to sustainable development".

At the final session speech, Mr. Strong put: "This process has been a profoundly human experience from which we cannot emerge unchanged. The world will not be the same, international diplomacy and United Nations will not be the same and the prospects for the Earth's future cannot be the same".<sup>49</sup>

So if nothing else, the tremendous upsurge in consciousness regarding the environment, rather than specific sums or targets, will be one of the long-lasting impacts of the Rio conference. Even if the South comes away with nothing very much committed to it, the meeting will remain a landmark from which governments and people alike will take their cue in the years ahead.

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49 Ibid., pp. 4-5.

## Chapter 6

### CONCLUSIONS

- From Stockholm to Rio: A Critical Analysis
- Problems of Environmental Diplomacy
- Prospects for Successful Environmental Diplomacy
- Conclusion

"Only One Earth Make or Break"

- UNEP

## Chapter 6

### CONCLUSIONS

#### From Stockholm to Rio: A Critical Analysis

The record of both organized and individual efforts to safeguard the biosphere and the quality of the human environment has been impressive, and the commitment of governments within the last two decades to protection of the biosphere is without precedent. While specific international agreements had addressed particular environmental problems prior to both the Biosphere Conference of 1968 and Stockholm Conference of 1972, no worldwide concerted or comprehensive approach toward international responsibility for the safeguarding of the biosphere had occurred. Today, however, an extensive and complex network of intergovernmental, nongovernmental and specific organizations addresses a broad range of international environmental problems. Treaties and other international agreements have been negotiated to such an extent that environmental protection is now recognized as a significant aspect of international policy.

So recent is this comprehensive effort that it would be unrealistic to expect more than a beginning to have been made. In the post-Stockholm conference, the principle results of international cooperation have been the investigation of the causes of environmental problems and identification of needs for action. Action programmes have been initiated, but most

of the action has yet to be undertaken. An international structure for environmental policy is now in place, and some experience with intergovernmental cooperative environmental programmes has been acquired.

Over the past 20 years, gains have been made in specific areas in industrialized countries, urban air quality, development and deployment of cleaner technologies, cutting down on use of natural resources, reduction of vehicle weight, reduction in energy used per unit of gross domestic product. However, not one single issue earmarked for action in Stockholm has been solved. In most developing countries environment has further deteriorated. Globally, new issues pose unprecedented threats; ozone depletion, climate change and loss of biological diversity and increasing population growth.

Stockholm went down in history because of Mrs. Gandhi's (paraphrased) quote to the effect that "poverty is the worst form of pollution". This formulation even while it stated the basic position of the South, failed in those fledging years to recognise that throughout the world, many of the anti-poverty moves, populist and otherwise, far from alleviating poverty, actually accentuated it. The strategy of the developing countries are not different both in Stockholm and Rio conference. The principles and declaration are almost same in both the conferences.

Overall, the environment 20 years after Stockholm is a sad testimony of the lack of achievement by the world community.

This depressing situation is caused by unsound, unsustainable development processes and consumption patterns and an unhealthy international economic environment. In 'Earth Summit', there were no promises or commitments on new and additional finance resource transfers, non-promise and non-commitments which enable the North to preserve their status quo and continue to ignore the unfulfilled promise made 20 years ago at Stockholm. Whether the high-minded resolutions and treaties will be implemented remained in considerable doubt. Transforming the rhetoric into principle, policies and social change is the difficult part and political will is still lacking in the North. The developing world has already accepted the notion of shared but differentiated responsibility in fulfilling the tasks ahead, and call on its colleagues from the North to reciprocate to tackle the environmental problems.

The Montreal protocol and the UNCED, marks a departure from the lofty rhetoric voiced at the Stockholm conference. In Stockholm conference, there was only a general concern about the international environmental problems emerged, instead of any action plan on specific issue was taken and the demand of the developing countries was totally ignored by the developed countries whereas in the Montreal and UNCED, specific issues (finance, transfer of technology, aid, ozone depletion, climate change, forestry, biological diversity and institutional mechanism) were being negotiated and the developing countries were capable of bargain with North in substantive manner. The involvement of people, NGOs and

the role of the UN was tremendous. For the first time, the developing countries also realized that 'development' has to be seen in a broader perspectives and environmental protection is must.

When one compares the extent of international action brought about by conferences, deliberations, investigations, reports and treaties since 1972 with the state of the world environment today, an immense disparity between rhetoric and reality appears. Incremental improvements have been made, but trends most threatening to the environmental future have not been reversed. Indeed, negotiations are now envisaging a "new world environmental order" where post-Rio could provide. People must stick to their rights and work on it. The fact remains that this is a slow process. Within 20 years since Stockholm, it is not easy to solve such a broad range and complicated international issue. But now the situation is better and people understand each other better. So it is hard to avoid the conclusion that the changes in human expectations and behaviours required to achieve sustainability are greater than humanity is able to make in its present state.

#### Problems of Environmental Diplomacy

Although the cumulative record of declared international intent to protect nature and the human environment is impressive, the continuing and growing of human activities upon the biosphere leaves the future in doubt. Almost invariably performances fall short of promises. Today the attitude of

many people who influence and determine the policies of the world's governments increasingly appears to be divided between a desire to protect the natural world and the quality of the environment and the desire to promote economic growth and ideological political objectives.

In a world governed by nations, the disposition and ability of national governments to make and honour agreements are fundamental conditions for international cooperation. The scope and scale of many environmental issues transcend the traditional boundaries of national interest and responsibility. Governments are being asked to cooperate in the implementation of international agreements in which national interests may be regarded as unclear or as adversely affected by a proposal. Perceived differences in national interests are the primary obstacles to all international cooperation. Lack of institutional legal and financial mechanism in developing countries are major obstacles for implementation of environmental programmes, and in global table, it is also a problem. Reliable quantitative information and lack of environmental impact assessment system in developing countries, make wrong decision in the international form to protect their interest.<sup>1</sup>

National governments are characteristically reluctant, and seldom able to their own motion, to initiate proposals

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1 Caldwell, L.K., Beyond Environmental Diplomacy: The Changing Institutional Structure of International Cooperation in John E. Carroll, ed., 1988, International Environmental Diplomacy, p. 13.



for international environmental cooperation. Yet effective international cooperation for environmental protection requires action or abstinence by national governments.

The reasons that persuade governments to negotiate international environmental agreements and to make formal commitments to cooperate are not necessarily those that determine whether, how, or when governments will act. Why do governments enter into international agreements which subsequently they fail to implement? Several reasons are apparent. First, the officials or agencies that negotiate agreements are not always those authorized to implement them. Negotiators and implementors may respond to different constituencies. Secondly, a government may never have been sincere in its apparent commitments; its intentions regarding implementation may never have been serious. It may have been responding to current fashions in international politics or may have endorsed a policy primarily to demonstrate solidarity with allied nations. Third, its intentions may have been genuine, but its administrative capabilities insufficient to carry out its obligations. Fourth, the negotiating government may fall from power and its successor may be unwilling or unable to honour its commitments.

Expansion of knowledge regarding the causes and effects of an environmental problem and experience in endeavouring to cope with it may lead policy-makers into confrontation with an unforeseen number of collateral issues, some of which may be politically sensitive. Demographic and economic

behaviours are critical factors in environmental problems. Matters hitherto regarded as strictly national and, as with population growth, non-governmental and private, may be found to require modification if problems beyond the national borders are to be solved.<sup>2</sup>

Thus, international environmental cooperation is confronted by a paradox which although not unique to it, is characteristic of the kind of issues in which the effects of national policies transcend national boundaries. For cooperation to be international it must occur between or amongst nations.

Environmental issues are seldom wholly unlike other international issues with implications for domestic policies, but their implementation is often more difficult than is their negotiation as formal convention. Where no supervisory institution has been provided, independent of the regular bureaucratic hierarchies and with a special charge to implement, cooperation by signatory states has tended to be perfunctory. Foreign offices may nevertheless pursue environmental issues through diplomatic channels when domestic sentiment strongly favours governmental action and national political leaders try to position themselves on the positive side of public opinion. Personal interest and sympathy at the highest social and political levels influence the responsiveness of government agencies to particular issues beyond what they would do on their own initiatives. Non-governmental organizations now

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2      *Ibid.*, pp. 14-16.

provide a continuity in international environmental policy.

The signing of a treaty customarily completes the first phase of a formalized effort toward institutionalized international environmental cooperation. Agreements have been reached amongst the negotiating parties, but no objective has as yet been realized in the environment. But governments, particularly democratic ones, are complex and their authority sometimes divided. Outside government, private manufacturing and commercial interests have opposed international agreements that would impose trade restrictions either in relation to prohibited product or would require changes in their customary methods of operation. So for environmental policy-makers, a broad range of issues has to be taken into consideration for a coherent and comprehensive policy.

#### Prospects for Successful Environmental Diplomacy

This new generation of ecological issues exemplifies the interconnectedness of life and its natural supports on earth. Modern scientific discoveries are revealing that localized activities can have global consequences and that dangers can be slow and perhaps barely perceptible in their development, yet with long-term and virtually irreversible effects. Neither traditional law nor traditional diplomacy offers guidelines for confronting such situations. So cooperation among sovereign states is essential for developing effective policies to address these issues, the new science or new diplomacy requires an analogue in the realm of international relations.

Several new elements has to be taken in diplomacy to tackle successfully the global environmental issues;

- Scientists must play an unaccustomed but critical role in international environmental negotiations;
- Governments may have to act while there is still scientific uncertainty, responsibly balancing the risks and costs of acting or not acting;
- Educating and mobilizing public opinion are essential to generate pressure on hesitant governments and private companies;
- Multilateral diplomacy, involving coordinated negotiations among many governments, is essential when the issues have planetary consequences;
- Strong leadership by a major country can be a significant force for developing international consensus;
- It may be desirable for a leading country or group of countries to take preemptive environmental protection measures in advance of a global agreement;
- The private sector including citizen's group, industry and commerce, is very much involved in the new diplomacy;
- Economic and structural inequalities among countries must be adequately reflected in any international regulatory regime;
- The effectiveness of a regulatory agreement is enhanced when it employs market incentives to stimulate technological innovation;

- The signing of a treaty is not necessarily the decisive event in a negotiation; the process before and after signing is critical;
- Firmness and pragmatism combined are important ingredients of diplomatic success;
- Unlike traditional international treaties that seek to cement a status quo, the modern law should be flexible and dynamic instrument for international environmental cooperation;
- Individuals can make a surprisingly significant difference (UNEP's Mustafa Tolba and UNCED's Maurice Strong), provided overall personal leadership, initiating critical consultations with key governments, private interest groups and international organizations.

#### New Imperatives for International Cooperation

From diplomatic point of view, certain new strategy has to be evolved, that could provide new dimensions to environmental protection both for developed and developing countries.

##### (i) Institutional:

- National policies and institutions;
- Regional and interregional action;
- Global institutions and programmes;

##### (ii) Governments:

- National environmental protection and Natural Resources Management Agencies;

- Strengthen the UNEP;
- Priority to global environmental assessment and reporting;
- Strengthen international economic cooperation;
- Increase the revenue and focus of the environment fund;

(iii) Legal:

- Recognizing the rights and responsibilities;
- A universal declaration and a convention on environmental protection and sustainable development;
- Strengthen and extend existing international convention and agreements;
- Avoiding and settling environmental disputes;
- Provide for joint action to protect natural objects beyond the limits of national jurisdiction, including subjects belonging to the category of common heritage of mankind.<sup>3</sup>

(iv) Environmental Education:

- Environmental education should consider the environment in its totality - natural and man-made, ecological, political, economic, technological, social, legislative, cultural and esthetic;
- Environmental education should be a continuous life-long process, both in school and out-of-school;
- Should emphasize active participation in preventing and solving environmental problems;

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<sup>3</sup> Our Common Future (1987); World Commission on Environment and Development, pp. 265-67.

- Should examine major environmental issues from world point of view, while paying due regard to regional differences;
- Environmental education should promote the value and necessity of local, national, international cooperation in the solution of environmental problems.<sup>4</sup>

In the above we have highlighted some of the broad areas which need to reform for successful international environmental diplomacy. But there are some priorities areas which need immediate attention for developing countries to resolve environmental issues:

1. The Role of International Economy:

Developing countries have sought for many years, fundamental changes in international economic arrangements so as to make them more equitable, particularly with regard to finance flows, trade, transnational investment and technology transfer. Their arguments must now be recast to reflect the ecological dimensions frequently overlooked in the past.

If large parts of the developing countries would like to avert economic, social and environmental catastrophes, it is essential that global economic growth be revitalized. In practical terms, this means more rapid economic growth in both industrial and developing countries, freer market access

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<sup>4</sup> UNEP, Environmental Education Newsletter, 1 January, 1976, pp. 2-5.

for the products of developing countries, lower investment rates, greater technology transfer, both concessional and commercial.

Reforms at an international level are now needed to deal simultaneously with economic and ecological aspects in ways that allow the world economy to stimulate the growth of developing countries while giving greater weight to environmental concerns. Such an agenda requires deep commitment by all countries to the satisfactory working of multilateral institutions (IMF, GATT, World Bank) and other multilateral development banks; to the making and observance of international rules in fields such as trade and investment and to constructive dialogue on many issues where national interest do not immediately coincide but where negotiation should help to reconcile them. New dimensions of multilateralism are essential to human progress.

The trend in the 90s has again poses a great challenges to the developing countries. Because with the end of cold war now the real battle field has shifted from geostrategies to geoeconomic field. Regional economic blocs are becoming more and more stronger to protect their interests. So the developing countries have to evolve strategies among themselves to protect their interests.

2. International Legal Instruments and Mechanism

International environmental agreements generally acknowledge the special circumstances of developing countries.



These countries acknowledge the need to protect the environment but cannot meet the same demands placed on industrial countries. Standards valid for industrial countries may be inappropriate, or entail unduly heavy social costs, for developing countries.

The following vital aspects of the universal, multilateral and bilateral treaty-making process should be taken into account;

- Special attention to the delicate balance between environmental and developmental concerns;
- The need to clarify and strengthen the relationship between existing international instruments or agreements in the field of environment and relevant social and economic agreements or instruments, taking into account the special needs of developing countries;
- At the global level, the essential importance of the participation in and the contribution of all countries, including the developing countries, to treaty making in the field of international law on sustainable development. Many of the existing international legal instruments and agreements in the field of environment have been developed without adequate participation and contribution of developing countries and to ensure a balanced governance of such instruments and agreements;
- Developing countries should also be provided with technical assistance in their attempts to enhance their national legislative capabilities in the field of environmental law;

- Any negotiations for the progressive development and codification of international law concerning sustainable development should, in general, be conducted on a universal basis, taking into account special circumstances in various regions.<sup>5</sup>

The overall objective of the review and development of international environmental law should be to evaluate and to promote the efficiency of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries. To ensure the effective, full and prompt implementation of legally binding instruments and to facilitate timely review and adjustment of agreements or instruments by the parties concerned, taking into account the special needs and concerns of all countries, in particular developing countries. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international law.

3. International Institutional Arrangements (Regional, Bilateral and Multilateral Agreements)

UNCED affirmed that elaborate strategies and measures to halt and reverse the effects of the environmental degradation

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5 Agenda-21, Final Text, Earth Summit, "International Legal Instruments", p. 41.

in the context of increased national and international efforts should be to promote sustainable and environmentally sound development in all countries and the promotion of economic growth in developing countries is essential to address problems of environment. It should be within the U.N. system, with the General Assembly being the supreme policy-making forum that would provide overall guidance to governments, the U.N. system and relevant treaty bodies. At the same time, governments as well as regional economic and technical cooperation organizations, have a responsibility to play an important role. Their commitments and actions should be adequately supported by the U.N. system and multilateral financial institutions. Thus national and international efforts should mutually benefit for one another.<sup>6</sup>

Many environmental problems transcend national boundaries, but fall short of being global, so in this case governments have to develop bilateral or regional arrangements to deal cooperatively with matters that they cannot effectively manage separately. The institutional arrangement should be based on agreement, on financial resources and mechanism, technology transfer and exchange of information. The international regional agreements illustrate the practical necessity of finding cooperative arrangements most appropriate to coping with particular environmental problems in particular geographical areas.

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6 UN Report on UNCED, A/Conf.151/26, vol. 11, 1992, pp. 20-25.

4. National Mechanism and International Cooperation for Capacity-building in Developing Countries

The ability of a country to follow sustainable development paths is determined to a large extent by the capacity of its people and its institutions as well as by its ecological and geographical conditions. Specifically, capacity-building encompass the country's human, scientific, technological, organizational, institutional and resource capabilities. A fundamental goal of capacity-building is to enhance the ability to evaluate and address the crucial questions related to policy choices and modes of implementation among development options, based on an understanding of environmental potentials and limits and of needs as perceived by the people of the country concerned. As a result, the need to strengthen national capacities is shared by all countries.

There are some areas in which the developing countries have to give utmost priority for environmental protection, like, population stabilization, integrated land use planning, forest and woodland conservation, conservation of biological diversity, control of pollution, development of non-polluting renewable energy system, recycling of wastes, development of ecologically compatible human settlements, updating environmental law, research and training.

The capacity-building mechanism activities related to:

- building a national consensus and formulating capacity-building strategies;
- identification of national sources and presentation of requests for technical cooperation, including that related to technology transfer and know-how in the framework of sector strategies;
- establishment of a review mechanism of technical cooperation in and related to technology transfer and know-how;
- enhancement of the expertise and collective contribution of the United Nations system for capacity and capacity-building initiatives.<sup>7</sup>

The developing countries while pursuing environmental policy should also recognize the important role of women, youth, strengthening the role of indigenous people and their communities, role of NGOs, strengthening the role of workers and their trade unions, role of business and industry, role of farmers, scientific and technological community, are of extremely important for integrated environmental policy.

#### Conclusions:

The human dimension of environmental protection is the complex range of attitudes and behaviours, embedded in culture, that account for the ways in which humanity impacts the environment. The management of man's relationships with his

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7 UN, Report on UNCED, A/Conf.151/26, vol. III, 14 August, 1992, pp. 81-87.

environment is a practical expression of a system of ethics; it is an application of values, beliefs and moralities to relationships not only to man and nature but between man and man. Yet nowhere in human experience do ethical concepts appear to be more confused nor moral issues more often evaded by misconstruction. A new statement of ethics is needed to guide man's conduct in a world in which the conditions of a spaceship prevail. The ultimate outcome of the changes that are required can be hardly less than a new phase in the development of human society.

On the basis of hypotheses, it is proved that, emergence of environmental awareness along with scientific capabilities in developing countries has made possible some degree of cooperation in international environmental problems with the developed countries. Secondly, the developing countries are in the process to protect the environment without compromising their economic development and trying to achieve sustainable patterns of development. Thirdly, the developing countries are relatively successful in bargaining with developed countries in regard to transfer of technology, financial flows etc. for environmentally sound development. Fourthly, U.N. being global in orientation plays a significant role in relation to international environmental policy. It has proved that environmental problems have to be solved with the mutual cooperation of all nations. Lastly, the developed countries already realized that their commitment should be more to protect the environment.

The decades at the end of the twentieth century and the beginning of the twenty-first century mark a major discontinuity in the history of civilization. From a retrospect in the future, the environmental movement will be seen as an integral part of this fundamental change in the relationship of human society to the earth - and of the peoples of the earth to one another. There are numerous risks to the continuing effectiveness of the environmental cooperation, but at the same time evidence shows that cooperation is possible, there is reason to hope that they may be effective.

With time and experience, the structure of environmental diplomacy will be defined in a broader terms, and the operational responsibilities of environmental agencies, now minimal, will doubtless be increased. If there is to be global government at some unspecified future time it will probably evolve in this way. The political and governmental models of the past can hardly be expected to serve the needs of a world of new knowledge and new necessities. We are probably at a relatively early stage in the growth of transnational institutions for the administration, of transnational environmental programmes. We can see the general trends, but the ultimate outcome of these developments cannot be foreseen.

In conclusion, we can say that in a world in which not all things are possible, some fundamental choices must be made. These choices will inevitably shape the future of humanity on earth, which greatly depends upon the reformation

of human behaviour in relation to the biosphere. It thus seems plausible that by the twenty-first century the environment will have become the primary subject of international policy.



Annexure - 1Conference Diplomacy; The Organizational Setting

The organizational setting can be divided into:

1. The preparation of the conference
2. Conference organization
3. The procedural situation; protocol
4. Secretariat services
5. Conference rooms and lobbies
6. Scope of the conference
7. Size of membership
8. Periodicity and length of the conference
9. Geo-climatic aspects
10. Hierarchical position of the conference.

This procedure generally followed by all United Nations conferences.

Annexure - 2A Format of Conference Diplomacy on Preparation,  
Discussion and Adoption of Resolution

1. Preparation of text:
  - a. In capitals (consultation with other governments)
  - b. At conference site (consultation with other delegations and with Secretariat)
2. Informal Circulation of text:
  - a. Among selected delegations
  - b. Among groups
  - c. Possible revision of text
  - d. Constitution of group of sponsors
3. Deposit of draft resolution with Secretariat.
4. Official conferences circulation in working languages.
5. Oral introduction by one or more sponsors.
6. Debate statement by other delegation.
7. Introduction of amendments.
8. Debate on amendments.
9. Sponsors decide whether amendments are acceptable.
10. President may constitute negotiating group.
11. Possible deposit of revised draft resolution.
12. Debate on revised draft.
13. Voting on sub-amendments.
14. Voting on amendments.
15. Explanation of vote.
16. Voting on draft resolution.
17. Explanation of vote.

Annexure - 3Representative Listing of International Organizations  
And Programs Concerned with Environmental Issues

- A. United Nations System:
- Administrative Committee on Coordination
  - Economic and Social Council
  - Office of United Nations Disaster Relief Coordinator
  - United Nations Centre for Human Settlements
  - United Nations Conference on Trade and Development
  - United Nations Development Programme
  - United Nations Fund for Population Activities
  - United Nations Institute for Training and Research
  - United Nations Scientific Committee on Effects of Atomic Radiation.
- B. UN Regional Commissions:
- Economic and Social Commission for Asia and the Pacific
  - Economic Commission for Africa
  - Economic Commission for Europe
  - Economic Commission for Latin America and the Caribbean
  - Economic Commission for Western Asia
- C. Specialized and Affiliated Agencies
- Food and Agricultural Organization
  - General Agreement on Tariffs and Trade
  - Intergovernmental Oceanographic Commission
  - International Atomic Agency

- International Maritime Organization
  - Intergovernmental Maritime Consultative Organization
  - United Nations Educational, Scientific and Cultural Organization
  - United Nations Industrial Development Organization
  - World Health Organization
  - World Meteorological Organization
- D. International Funding Agencies:
- African Development Bank
  - Arab Bank for Economic Development in Africa
  - Asian Development Bank
  - European Investment Bank
  - European Regional Development Fund
  - Inter-American Development Bank
  - World Bank
  - International Development Association
  - International Finance Corporation
- E. Non-UN Intergovernmental:
- Arab League Educational, Scientific and Cultural Organization
  - Association of South-East Asian Nations
  - Baltic Marine Environment (Helsinki) Commission
- F. Non-Governmental Quasi-Scientific, Technical and professional
- Council for International Organization of Medical Sciences
  - Environmental Law Centre

- Environmental Liasion Centre (Nairobi)
  - European Environmental Bureau (Brussels)
  - Institute for European Environmental Policy
  - International Council for Environmental Law
  - International Council of Monuments and Sites
  - International Environmental Bureau
  - International Institute for Environment and Development
  - International Ocean Institute
  - International Tropical Timber Organization
  - International Union of Forest Research Organizations
  - World Environment Centre
  - World Wildlife Fund for Nature
- G. International Programs and Services:
- Committee of International Development Institutions on the Environment
  - Consultative Group for Desertification Control
  - International Boundary Waters Commission (U.S./Mexico)
  - International Council for the Exploration of the Sea
  - Organization for Economic Cooperation and Development
  - Organization of African Unity
  - Organization of American States
  - South Asian Association of Regional Cooperation
  - South Asia Cooperative Environment Programme
  - South Pacific Commission
- H. Non-Governmental Scientific:
- International Association for Ecology
  - International Council of Scientific Unions

- Scientific Committees;
  - On Antarctic Research
  - On Problems of Environment
  - On Space Research
- International Geosphere - Biosphere Programme
- International Union for Conservation of Nature and Natural Resources; The World Conservation Union
- Global Environmental Monitoring System
- Global Environmental Facilities
- Global Investigation of Pollution in the Marine Environment
- Global Resource Information Data Base
- Intergovernmental Panel on Climate Change
- International Biological Programme
- International Board for Plant Genetic Resources
- International Centre for Genetic Engineering and Biochemistry
- International Environmental Education Programme
- International Global Ocean Station System
- International Maritime Satellite Organization
- Joint Group of Experts on the Scientific Aspects of Marine Pollution
- Man and Biosphere Programme
- Marine Environmental Data Information Referral System
- Study of Critical Environmental Problems
- Study of Man's Impact on Climate
- World Climate Programme
- World Conservation Monitoring Centre

Annexure - 4Selected Multilateral Treaties of Environmental  
Significance (1948-1992)

- 1948 Convention of the Inter-Governmental Maritime Consultative Organization
- 1954 Convention for the Prevention of Pollution of the Sea by Oil, 1969, Amendments to the 1954 Convention
- 1958 Convention on the High Seas
- 1958 Convention on the Continental Shelf
- 1958 Convention of the Territorial Sea and the Contiguous Zone
- 1959 Antarctic Treaty Signed
- 1963 Treaty Banning Nuclear Weapons Tests in the Atmosphere in Outer Space, and under Water (Partial Nuclear Test Ban Treaty)
- 1969 Convention Relating to Intervention on the High Seas in cases of Oil Pollution Casualties
- 1971 Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage
- 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter
- 1973 Convention for the Prevention of Pollution by Ships
- 1974 Convention for the Prevention of the Marine Pollution from Land-Based Sources
- 1975 Convention Concerning the Protection of the World Cultural and Natural Heritage in Force
- 1978 Amazon Pact Treaty

- 1978 Action Plan for the Protection and Development of the Marine Environment in Gulf Countries
- 1979 Convention on Long-Range Transboundary Air Pollution
- 1980 Convention on the Conservation of Antarctic Marine Living Resources Signed 20 May, 1980, in force 7 April, 1982
- 1982 United Nations Convention on the Law of the Sea, ratified by 45 States, it will enter into force when ratified by 60 States
- 1985 Vienna Convention for the Protection of the Ozone Layer
- 1987 Montreal Protocol on Substances that Deplete the Ozone Layer, entered into force - 1989
- 1988 Convention on the Regulation of Antarctic Mineral Resources Activities
- 1992 Treaty on Biological Diversity and Climate Change signed at the United Nations Conference on Environment and Development (UNCED), at Brazil 1992.



Annexure - 5United Nations Conference on the Human Environment  
Declaration, Stockholm, 1972A Statement of Principles:

The declaration of principles and recommendations resulted from the United Nations Conference on the Human Environment at Stockholm, Sweden, June 5-16, 1972.

Following is a text of the 26 principles which make up the Declaration on the Human Environment. Conference Secretary-General Maurice F. Strong described it as a code of international conduct which "holds that all nations must accept responsibility for the consequences of their own actions on the environment of others".

The UNCHE-1972, having considered the need for a common outlook and for common principles to inspire and guide the peoples of the world in the preservation and enhancement of the human environment, states the common conviction that:

Principle 1

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations. In this respect, policies

promoting or perpetuating apartheid, racial segregation, discrimination, colonial and other forms of oppression and foreign domination stand condemned and must be eliminated.

#### Principle 2

The natural resources of the earth, including the air, water, land, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management as appropriate.

#### Principle 3

The capacity of the earth to produce vital renewable resources must be maintained and wherever practicable, restored.

#### Principle 4

Man has special responsibility to safeguard and wisely manage the heritage of wildlife and its habitat which are now gravely imperilled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development.

#### Principle 5

The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind.

Principle 6

The discharge of toxic substances or of other substances and the release of heat in such quantities or concentrations as to exceed the capacity of the environment to render them harmless, must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems.

Principle 7

States shall take all possible steps to prevent pollution of the seas.

Principle 8

Economic and social development is essential for ensuring a favourable living and working environment for man and for creating conditions on earth that are necessary for the improvement of the quality of life.

Principle 9

Environmental deficiencies generated by the conditions of under-development and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.

Principle 10

For the developing countries, stability of prices and adequate earnings for primary commodities and raw materials are essential to environmental management since economic factors

as well as ecological processes must be taken into account.

Principle 11

The environmental policies of all states should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by states and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures.

Principle 12

Resources should be made available to preserve and improve the environment, taking into account the circumstances and particular requirements of developing countries and costs which may emanate from their incorporating environmental safeguards into their development planning and the need for making available to them, upon their request, additional international technical and financial assistance for this purpose.

principle 13

In order to achieve a more rational management of resources and thus to improve the environment, States should adopt an integrated and coordinated approach to their development planning so as to ensure that development is compatible with the need to protect and improve the human environment for the benefit of their population.

Principle 14

Rational planning constitutes an essential tool for

reconciling any conflict between the needs of development and the need to protect and improve the environment.

Principle 15

Planning must be applied to human settlements and urbanization with a view to avoiding adverse effects on the environment and obtaining maximum social, economic and environmental benefits for all.

Principle 16

Demographic policies which are without prejudice to basic human rights and which are deemed appropriate by governments concerned should be applied in those regions where the rate of population growth or excessive population concentrations are likely to have adverse effects on the environment or development, or where low population density may prevent improvement of the human environment and impede development.

Principle 17

Appropriate national institutions must be entrusted with the task of planning, managing or controlling the environmental resources of states with a view of enhancing environmental quality.

Principle 18

Science and technology, as part of their contribution to economic and social development must be applied to the identification, avoidance and control of environmental risks and the solution of environmental problems and for the common good of mankind.

Principle 19

Education in environmental matters, for the younger generation as well as adults, giving due considerations to the underprivileged, is essential in order to broaden the basis for an enlightened opinion and responsible conduct by individuals, enterprises and communities in protecting and improving environment in its full human dimensions. It is also essential that mass media of communication avoid contributing to the deterioration of the environment, but, on the contrary, disseminate information of an educational nature, on the need to protect and improve the environment in order to enable man to develop in every respect.

Principle 20

Scientific research and development in the context of environmental problems, both national and international, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries.

Principle 21

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.

Principle 22

States shall cooperate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction.

Principle 23

Without prejudice to such criteria as may be agreed upon by the international community, or to standards which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries.

Principle 24

International matters concerning the protection and improvement of the environment should be handled in a cooperative spirit by all countries, big or small, on an equal footing. Cooperation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control,

prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres, in such a way that due account is taken of the sovereignty and interests of all States.

Principle 25

States shall ensure that international organizations play a coordinated, efficient and dynamic role for the protection and improvement of the environment.

Principle 26

Man and his environment must be spared the effects of nuclear weapons and all other means of mass destruction. States must strive to reach prompt agreement, in the relevant international organizations, on the elimination and complete destruction of such weapons.

The world community of States solemnly reaffirms its commitment to the Stockholm Declaration and Action Plan, as well as to the further strengthening and expansion of national efforts and international cooperation in the field of environmental protection. It also reaffirms its support for strengthening the United Nations Environment Programme (UNEP) as the major catalytic instrument for global environmental cooperation, and calls for increased resources to be made available, in particular through the Environment Fund, to address the problems of the environment. It urges all governments and peoples of the world to discharge their historical responsibility, collectively and individually, to ensure that our small



planet is passed over to future generations in a condition which guarantees a life in human dignity for all.

Topic	1987 Montreal Protocol	
	Provision	Location
Addition of new substances	Amendment to protocol; requires approval by two-thirds of parties. Binding only for parties that ratify amendment.	Art. 2, para. 10
Decisions on financial mechanism	Not applicable	
<i>Trade restrictions</i>		
Exports to nonparties of controlled substances in bulk	Prohibited for exports from developing countries, beginning in 1993.	Art. 4, para. 2
Imports from nonparties of controlled substances in bulk	Prohibited beginning in 1990.	Art. 4, para. 1
Imports from nonparties of products containing controlled substances	Prohibited beginning in 1993.	Art. 4, para. 3
Imports from nonparties of products made with controlled substances	By 1994, parties will determine feasibility of ban.	Art. 4, para. 4
<i>Noncompliance procedures</i>	Procedures for determining noncompliance and for treatment of parties in noncompliance to be decided.	Art. 8
<i>Entry into force</i>	January 1, 1989, provided ratifications are received from at least 11 nations, representing at least two-thirds of estimated 1986 global consumption of controlled substances	Art. 16

Provision	1990 London revisions	
		Location
No change		
	Requires approval by two-thirds of parties comprising separate majorities of developing countries (article 5 parties) and industrialized countries.	Art. 10, para. 9
	Prohibited for exports from all parties. For new controlled substances, prohibited beginning in 1993.	Art. 4, paras. 2 and 2 bis
	For new controlled substances, prohibited beginning in 1993.	Art. 4, para. 1 bis
	For new controlled substances, prohibited beginning in 1996.	Art. 4, para. 3 bis
	For new controlled substances, by 1997 parties will determine feasibility of ban.	Art. 4, para. 4 bis
	Implementation committee established to review complaints. Parties ask legal experts to develop more detailed procedures.	(decision)
	January 1, 1992, provided that at least 20 parties ratify the amendment.	art. 2

1987 Montreal Protocol			1990 London revisions	
Topic	Provision	Location	Provision	Location
<i>Developing countries' obligations</i>	increase in consumption of controlled substances allowed up to 0.3 kilogram per capita for 10 years in order to meet "basic domestic needs." After 10 years, the reduction schedule must be followed.	Art. 5, para. 1	No change for original CFCs and halons.	Art. 5, para. 2
			For new controlled substances, limit is 0.2 kilogram per capita.	
<i>Financial assistance</i>	Parties will "facilitate" bilateral and multilateral aid to developing countries.	Art. 5, para. 3	Article 5 party may appeal to meeting of parties if financial aid and technology transfer (see below) are inadequate to enable it to comply with treaty obligations.	Art. 5, paras. 5-9
			Multilateral fund, administered by World Bank under policy control of parties, will finance incremental costs to enable compliance with controls. Feasibility studies and technical assistance will also be financed. Initial 3-year budget set at \$160-240 million.	
<i>Technology transfer</i>	Parties will "facilitate access" to technology by developing countries. Parties will promote exchange of information and technical assistance.	Art. 5, para. 2	Parties will "take every practicable step" to transfer technology to article 5 parties "under fair and most favourable conditions."	Art. 10A
<i>Review of control measures</i>	Controls will be evaluated on basis of scientific, environmental, economic, and technological assessments beginning in 1989 and at least every four years thereafter.	Art. 6	No change	
<i>Voting</i>				
Canceling 50% reduction of CFCs	Requires approval by two-thirds of parties representing at least two-thirds of consumption of all parties.	Art. 2, para. 4	Not applicable	
Adjustments in reduction of already controlled substances	Requires approval by two-thirds of parties representing at least 50% of consumption of all parties. Binding on all parties.	Art. 2, para. 9	Requires approval by two-thirds of parties comprising separate majorities of developing countries (article 5 parties) and industrialized countries. Binding on all parties.	Art. 2, para. 9

1987 Montreal Protocol		
Topic	Provision	Location
<i>Chemicals</i>		
Chlorofluorocarbons (CFCs) 11, 12, 113, 114, 115	Freeze at 1986 levels beginning in mid-1989	Art. 2, para. 1
	20% reduction beginning in mid-1993	Art. 2, para. 3
	50% reduction beginning in mid-1998	Art. 2, para. 4
Halons 1211, 1301, 2402	Freeze at 1986 levels in 1992	Art. 2, para. 2
10 other fully halogenated CFCs	Not covered	
Carbon tetrachloride	Not covered	
Methyl chloroform	Not covered	
Other halons	Not covered	
Hydrochlorofluorocarbons (HCFCs)	Not covered	

1990 London revisions	
Provision	Location
No change	Art. 2A
50% reduction in 1995	
85% reduction in 1997	
Phaseout in 2000	
Schedule to be reassessed in 1992 with objective of accelerating reductions.	
No change	Art. 2B
50% reduction in 1995	
Phaseout in 2000	
Parties will determine in 1992, with subsequent review, whether any essential uses should be exempt from reductions.	
20% reduction from 1989 levels in 1993	Art. 2C
85% reduction in 1997	
Phaseout in 2000	
85% reduction from 1989 levels in 1995	Art. 2D
Phaseout in 2000	
Freeze at 1989 levels in 1993	Art. 2E
30% reduction in 1995	
70% reduction in 2000	
Phaseout in 2005	
Schedule to be reassessed in 1992 with objective of accelerating reductions.	
Nonbinding resolution discourages usage, requests reporting on production and consumption.	
Mandatory reporting on production and consumption.	Art. 7
Nonbinding resolution calls for phaseout no later than 2040, and if possible by 2020, with regular reassessments.	

Annexure - 7

Rio Declaration on Environment and Development\*

The United Nations Conference on Environment and Development,  
Having met at Rio de Janeiro, Brazil from 3 to 14 June 1992,  
Reaffirming the Declaration of the United Nations Conference  
on the Human Environment, adopted at Stockholm on 16 June 1972,  
and seeking to build upon it,

With the goal of establishing a new and equitable global  
partnership through the creation of new levels of cooperation  
among states, key sectors of societies and people,  
Working towards international agreements which respect the  
interests of all and protect the integrity of the global environ-  
mental and developmental system,

Recognizing the integral and interdependent nature of the Earth,  
our home, proclaims that:

Principle 1

Human beings are at the centre of concerns for sustain-  
able development. They are entitled to a healthy and productive  
life in harmony with nature.

Principle 2

States have, in accordance with the Charter of the United  
Nations and the principles of the international law, the  
sovereign right to exploit their own resources pursuant to

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Sources: Report of the United Nations Conference on Environment  
and Development (Rio de Janeiro, 3-14 June 1992),  
A/Conf. 151/26 (vol. 1), 12 August 1992, pp. 8-13.

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.

### Principle 3

The right to development must be fulfilled so as to equitably meet, developmental and environmental needs of present and future generations.

### Principle 4

In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

### Principle 5

All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

### Principle 6

The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but different responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8

To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9

States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10

Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to

information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

#### Principle 11

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

#### Principle 12

States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation.

#### Principle 13

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of



environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14

States should effectively cooperate to discourage or prevent the relocation and transfer to other states of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15

In order to protect the environment the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

Principle 16

National authorities should endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17

Environmental impact assessment as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are

subject to a decision of a competent national authority.

Principle 18

States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those states. Every effort shall be made by the international community to help states so affiliated.

Principle 19

States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those states at an early stage and in good faith.

Principle 20

Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21

The creativity, ideas and courage for the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22

Indigenous people and their communities and other local communities have a vital role in environmental management and

development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23

The environmental and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24

Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25

Peace, development and environmental protection are interdependent and indivisible.

Principle 26

States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27

States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

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