

INDIA AND THE NORTH-SOUTH POLITICS OF

GLOBAL ENVIRONMENTAL ISSUES:

**The Cases of Ozone Depletion, Climate Change
and Loss of Biodiversity**

Mukund Govind Rajan

Worcester College

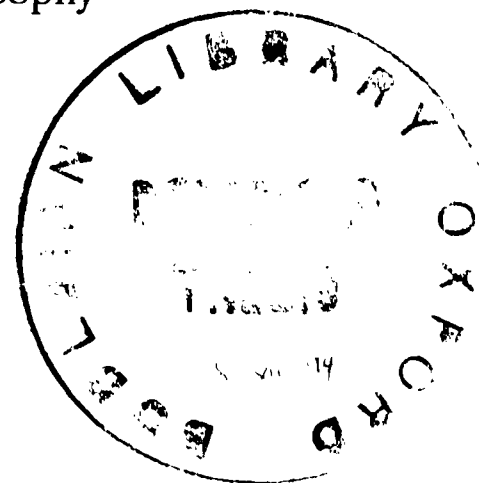
Trinity Term,

1994

A thesis submitted for the Degree of Doctor of Philosophy

in International Relations, Oxford University.

(99,300 words)



THESIS ABSTRACT

**TITLE: INDIA AND THE NORTH-SOUTH POLITICS OF
GLOBAL ENVIRONMENTAL ISSUES:
The Cases of Ozone Depletion, Climate Change
and Loss of Biodiversity**

**D.Phil Thesis
Mukund Govind Rajan
Worcester College, Oxford
Trinity Term, 1994**

The cooperation of developing countries is commonly assumed to be essential for the establishment of effective regimes to manage global environmental interdependence. Yet their policies and perceptions have been inadequately studied. This thesis seeks to partially fill this gap in the literature with a detailed analysis of Indian policy on global environmental issues. It examines the cases of ozone depletion, climate change, and loss of biodiversity, and discusses developments up to the 1992 Earth Summit.

The study addresses four broad questions about Indian policy: the process of policy making; the character of Indian interests and preferences; the nature and evolution of India's bargaining strategy; and the outcome of international negotiations for India. It reveals a complex picture of continuity and change in Indian policy. It demonstrates the enduring importance of traditions and values such as the "poverty is the greatest polluter" orthodoxy and the concepts of sovereignty, equity and Third World solidarity. It also highlights the impact of perceptions of vulnerability in relation to the North. It argues that Indian policy did not reflect purely power-maximising goals; policy makers were sometimes uncertain about where India's interests precisely lay, and felt constrained both by economic weakness and by the recognition of the mutual interest of all states in global environmental protection. This was reflected in the moderation in India's bargaining strategy.

The Indian case suggests that developing countries did not regard their cooperation in the resolution of global environmental issues purely as a bargaining chip with which to extract concessions from the North. Still less did they perceive these issues as providing an opportunity to pose a macro-challenge to the North, linking agendas across issue areas. Instead, their goals reflected perceptions of constraints and mutual interests in bargaining with the North. Their bargaining strategy thus tended to be moderate and flexible, unlike the confrontational approach of the 1970s.

TABLE OF CONTENTS

<u>ACKNOWLEDGEMENTS</u>	i
<u>ABBREVIATIONS</u>	ii
<u>CHAPTER 1: INTRODUCTION</u>	1
I. Global Environmental Interdependence and the Developing Countries	5
II. Indian Policy	9
III. Manner of Treatment	16
IV. Sources	20
<u>CHAPTER 2: INDIA'S FOREIGN ENVIRONMENTAL POLICY</u>	24
I. The Policy Making Process	24
II. Traditions and Values in Indian Policy	41
<u>CHAPTER 3: THE CASE OF OZONE DEPLETION - INTRODUCTION</u>	63
I. Ozone Depletion as a Global Environmental Issue	63
II. The Evolution of International Concern Over Ozone Depletion	64
<u>CHAPTER 4: THE EVOLUTION OF INDIA'S STRATEGY IN THE OZONE NEGOTIATIONS</u>	83
I. Non-Participation in the Montreal Protocol Process	83
II. Indications of Emerging Policy	87
III. The Helsinki Meeting	91
IV. Clarification of Indian Policy	96
V. The Progress of Negotiations	104
VI. The Conference of Select Developing Countries	110
VII. The Final Phase of Bargaining	113
VIII. The London Conference	117
IX. India's Assessment of the Amended Montreal Protocol	122
<u>CHAPTER 5: THE CASE OF CLIMATE CHANGE - INTRODUCTION</u>	125
I. Climate Change as a Global Environmental Issue	125
II. North-South Issues in the Evolution of International Concern Over Climate Change	127

<u>CHAPTER 6: THE EVOLUTION OF INDIA'S STRATEGY IN THE CLIMATE CHANGE NEGOTIATIONS</u>	137
I. Deficiencies in Scientific Understanding	137
II. The Conference of Select Developing Countries	139
III. The Build-Up Towards Negotiations for a Climate Convention	143
IV. Negotiations Over a Framework Convention on Climate Change	157
V. The Framework Convention on Climate Change	197
VI. India's Assessment of the Framework Convention	202
<u>CHAPTER 7: THE CASE OF LOSS OF BIODIVERSITY - INTRODUCTION</u>	206
I. The Conservation of Biodiversity as a Global Environmental Issue	206
II. North-South Issues in the Evolution of International Concern Over the Conservation of Biodiversity	213
<u>CHAPTER 8: THE EVOLUTION OF INDIA'S STRATEGY IN THE BIODIVERSITY NEGOTIATIONS</u>	255
I. The Background to the Biodiversity Convention Negotiations	255
II. India's Interests at the Preliminary Stage of Negotiations	257
III. The Conference of Select Developing Countries	267
IV. Negotiations Over a Convention on Biodiversity	269
V. The Convention on Biological Diversity	308
VI. India's Assessment of the Biodiversity Convention	317
<u>CHAPTER 9: CONCLUSIONS</u>	320
I. The Policy Making Process in India	320
II. The Character of Indian Interests and Preferences	336
III. India's Bargaining Strategy	348
IV. The Outcome of Negotiations for India	368
<u>BIBLIOGRAPHY</u>	376

ACKNOWLEDGEMENTS

I wish to express my immense gratitude to Dr Andrew Hurrell for his invaluable and patient guidance and inspiration throughout the preparation of this thesis.

I am also indebted to Andreas Osiander for guiding this chemical engineer through the novel experience of a social science M.Phil at Oxford.

This thesis would not have been possible without the support of the Rhodes Trust for three years of my stay at Oxford. I am also extremely grateful to the Newby Trust, the Charles Wallace India Trust, the Northbrooke Society, the Radhakrishnan Memorial Bequest, and the Cyril Foster Peace Fund for financial support towards my field work and my maintenance during the last months of thesis preparation.

I am also extremely grateful to Prof Charles Cooper and my colleagues at the United Nations University Institute for New Technologies for allowing me to spend a very stimulating three months at Maastricht.

I owe a very big debt to Keshav Desiraju, without whose guidance and assistance this thesis would have been extremely difficult to undertake.

My sincere thanks also go to the many individuals who gave freely of their time to discuss the issues raised in this thesis, and who helped me locate a number of useful sources of information. In particular, I would like to express my gratitude to Renu Jain of Development Alternatives, and Mrs Namboodiri of TERI.

I must also acknowledge the inspiration and encouragement I received from Mahesh Rangarajan in taking up the environment as a field of study.

My thanks also go to the Twenty First Century Trust for inviting me to participate in a very interesting workshop on 'Prospects for Environment and Development after the Rio Summit'.

My gratitude also goes to Giri, Sujata, Nandini, Nermeen, Abbe, Sanjay, and Dan, for their affection and friendship, and to Soumya, for being a distraction as well as an inspiration.

My greatest thanks go in the end to the people who mean the most to me, and without whose encouragement, I would never have come to Oxford - my parents.

Mukund Govind Rajan
August, 1994

ABBREVIATIONS

AOSIS	Alliance of Small Island States
ASEAN	Association of South-East Asian Nations
CCPA	Cabinet Committee on Political Affairs
CFC	Chlorofluorocarbon
CGIAR	Consultative Group on International Agricultural Research
CPGR	Commission on Plant Genetic Resources
CSE	Centre for Science and Environment
CSIR	Council of Scientific and Industrial Research
DOE	Department of Environment
DST	Department of Science and Technology
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
GHG	Greenhouse Gas
IARC	International Agricultural Research Centre
IBPGR	International Bureau for Plant Genetic Resources
ICSU	International Council of Scientific Unions
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPR	Intellectual Property Rights
IRRI	International Rice Research Institute
IUCN	International Union for the Conservation of Nature and Natural Resources
MEA	Ministry of External Affairs
MOEF	Ministry of Environment and Forests
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NGO	Non-Governmental Organisation
NIEO	New International Economic Order
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
PBR	Plant Breeders' Rights
SAARC	South Asian Association for Regional Cooperation
TERI	Tata Energy Research Institute
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organisation
WCED	World Commission on Environment and Development
WHO	World Health Organisation
WMO	World Meteorological Organisation
WRI	World Resources Institute
WWF	World Wide Fund for Nature

1. INTRODUCTION

The 1972 Stockholm United Nations Conference on the Human Environment is widely acknowledged to have been a watershed event in bringing the environment prominence on the international political agenda.¹ It was partly a product of the relatively widespread view at the time, reflected in the conference theme, “Only One Earth”, that a situation of global environmental interdependence obtained which could be successfully managed only through the cooperation of all states.² It focused attention on the issue of environmental protection, particularly the need to reconcile economic development and environmental concerns. It was expected to provide an impetus to the development of international environmental law and other mechanisms for the resolution of international environmental problems.

The Stockholm Conference succeeded in increasing public awareness of the fragility of the environment. The post-Stockholm period saw a boom in governmental and non-governmental organisations involved in environmental protection; whereas before Stockholm, hardly any developing country government had an environmental department, by 1980 almost a hundred did. Stockholm also led to the creation of the

¹ Peter Stone, Did We Save the Earth at Stockholm?, (London: Earth Island Ltd., 1973); Louis B. Sohn, ‘The Stockholm Declaration on the Human Environment’, Harvard International Law Journal, Vol. 14, 1973, pp. 423-515; John McCormick, The Global Environmental Movement: Reclaiming Paradise, (London: Belhaven Press, 1989), pp. 88-105; Lynton Keith Caldwell, International Environmental Policy: Emergence and Dimensions, (London: Duke University Press, 1990, 2nd edn), pp. 21-93.

² Barbara Ward and Rene Dubos, Only One Earth: The Care and Maintenance of a Small Planet, (London: Penguin Books Ltd., 1972); Garrett Hardin, ‘The Tragedy of the Commons’, Science, Vol. 162, No. 3859, 13 December, 1968, pp. 1243-8; The Ecologist, Blueprint for Survival, (London: Penguin Books Ltd., 1972); D.H. Meadows et al, The Limits to Growth, (London: Earth Island Ltd., 1972).

United Nations Environment Programme (UNEP), which facilitated agreements on a number of environmental issues. Yet, despite all this, the environment declined significantly in prominence on the international political agenda after Stockholm. There were several reasons for this.

First, the vision of global environmental interdependence could not be sustained for long. There increasingly appeared to be not one common global environmental crisis, but rather, numerous local and regional crises. Indeed, UNEP's most successful activity in the 1970s is widely acknowledged to have been its Regional Seas Programme. Controversial notions like the existence of "limits to growth" were also undermined with evidence that new technology, resource recycling and substitution, and enhanced productive efficiency were capable of expanding the limits.³ Second, international attention was diverted from environmental issues to economic and political issues after Stockholm. The 1973 Arab-Israeli war, the energy crisis, and the onset of issues to do with the developing world's demand for a New International Economic Order (NIEO), all helped to divert attention from the environment for the rest of the 1970s. Finally, deep divisions between the North and the South over the subject of environmental protection also contributed to the decline in international political interest in the environment after Stockholm. For developing countries, environmental considerations generally conflicted with their developmental activities. Given their pressing need for economic development, development, rather than the environment, was to be their priority. They were therefore suspicious of the North's advocacy of environmental protection, seeing in it a device to obstruct their

³ Mahbub Ul Haq, The Poverty Curtain - Choices for the Third World, (New York: Columbia University Press, 1976), pp. 88-105.

progress and economic development.⁴ Indeed, many of them had for this reason been reluctant to even attend the Stockholm Conference.

Despite efforts in the early 1980s such as the announcement of the 1980 World Conservation Strategy jointly by UNEP, the World Wildlife Fund (WWF), and the International Union for the Conservation of Nature and Natural Resources (IUCN), and the declaration by the UN General Assembly of a World Charter for Nature in 1982, the environment remained a low priority in international relations. Instead, there was a resurgence of military and security issues in international politics, particularly with the revival of Cold War tensions between the US and the Soviet Union, heightened further after the latter's invasion of Afghanistan in 1979. In addition, a worldwide recession caused states to be concerned with their economic problems, to the further detriment of environmental concerns. International environmental concerns were not helped either by the installation of a Republican administration in the US that soon turned out to be, in the words of a noted conservationist, "the most unsympathetic and the least understanding administration in respect to conservation for at least half a century. This soon cast its shadow over the international scene".⁵

But matters changed in the second half of the 1980s. Tensions between the superpowers declined following several summits between Reagan and Gorbachev.

⁴ João Augusto de Araujo Castro, 'Environment and Development: The Case of the Developing Countries', International Organization, Vol. 26, 1972, pp. 401-16; United Nations, General Assembly, Development and Environment, UN Doc. A/CONF.48/10, 22 December, 1971.

⁵ Max Nicholson, The New Environmental Age, (Cambridge: Cambridge University Press, 1987), p. 115. See also Samuel P. Hays, Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-85, (Cambridge: Cambridge University Press, 1987), pp. 491-526.

The economic situation of many industrialised countries also improved. And in the favourable climate thus created, increased scientific understanding of the environment combined with events such as the Ethiopian famine in 1985, the Chernobyl disaster in 1986, and the work between 1984 and 1987 of the World Commission on Environment and Development (WCED), helped to revive international concern about the environment. Most critically, however, the emergence and increased public awareness of global environmental issues like ozone depletion, climate change, and the loss of biodiversity, helped to restore the environment to a position of prominence on the international political agenda that it had not enjoyed since the Stockholm Conference. This development was marked by the largest gathering of world leaders in history at the 1992 Earth Summit in Rio de Janeiro.

Global environmental issues foster global interdependence, in the sense of common fate or the mutual dependence of each state upon decisions reached in the others. These issues affect all states, and their resolution requires the cooperation of a large part of the international community; the unilateral efforts of a state or a small group of states, however powerful, are likely to prove inadequate. Ozone depletion, for instance, which has adverse consequences for all states, is caused by the release of ozone depleting compounds anywhere in the world. Consequently, all countries have a stake in the resolution of this problem, and their cooperation is necessary in effectively curbing the production and use of ozone depleting substances.

One of the first major indications of the significance of global environmental issues for international relations came at the G-7 Economic Summit of powerful industrialised states in Bonn in 1985. President Reagan and other Northern leaders joined in a formal declaration which noted that “[N]ew approaches and strengthened

international cooperation are essential to anticipate and prevent damage to the environment, which knows no national frontiers”, and which declared that “[W]e shall work with developing countries for the avoidance of environmental damage and disasters worldwide”.⁶ The G-7 declaration thus underlined the need for international cooperation to manage the interdependence fostered by global environmental issues. The 1987 report of the WCED also emphasised that “[T]here is a growing need for effective international cooperation to manage ecological ... interdependence”.⁷

By 1988, the widespread concern about global environmental issues was being demonstrated in the speeches of world leaders at the UN. This concern was vividly described by Eduard Shevardnadze, Foreign Minister of the Soviet Union:

[I]t is perhaps for the first time that we have seen the stark reality of the threat to our environment - a second front fast approaching and gaining urgency equal to that of the nuclear and space threat.

For the first time we have clearly realized that, in the absence of any global control, man’s so-called peaceful constructive activity is turning into global aggression against the very foundations of life on earth.⁸

I. GLOBAL ENVIRONMENTAL INTERDEPENDENCE AND THE DEVELOPING COUNTRIES

It is commonly assumed that the establishment of effective regimes to manage global environmental interdependence necessarily requires the cooperation of the

⁶ Richard E. Benedick, ‘Environment in the Foreign Policy Agenda’, Department of State Bulletin, Vol. 86, No. 2111, June, 1986, pp. 55-8, p. 56.

⁷ WCED, Our Common Future, (Oxford: Oxford University Press, 1987), p. 9.

⁸ Statement made at the UN General Assembly, 43rd Session, 27 September, 1988. [UN Doc. A/43/PV.6, 28 September, 1988, pp. 56-83, p. 76].

developing countries, or the South. These countries are believed to be responsible for a significant part of many global environmental problems.⁹ They also control many environmental resources deemed to be of global significance, including much of the world's tropical forests and biodiversity. Without their cooperation, international efforts to protect the global environment are generally believed to be doomed to failure.

Yet, despite this importance, the policies and perceptions of developing countries with regard to global environmental issues have been inadequately studied. Claims are certainly made regarding the character of their interests and preferences, and their bargaining strategies, but there are very few studies - especially detailed case studies - in the literature to verify these claims.¹⁰ Examples of these claims

⁹ See Chapters 3, 5 and 7.

¹⁰ For general literature on developing country perceptions of the environment, see, for example, Marc Williams, 'Re-Articulating the Third World Coalition: The Role of the Environmental Agenda', Third World Quarterly, Vol. 14, No. 1, 1993, pp. 7-29; Rodney R. White, North, South, and the Environmental Crisis, (London: University of Toronto Press, 1993); Caroline Thomas, The Environment in International Relations, (London: The Royal Institute of International Affairs, 1992); Tariq Osman Hyder, 'Climate Negotiations: The North/South Perspective', in Irving M. Mintzer, ed., Confronting Climate Change: Risks, Implications and Responses, (Cambridge: Cambridge University Press, 1992), pp. 323-36; Matthew Paterson and Michael Grubb, 'The International Politics of Climate Change', International Affairs, Vol. 68, No. 2, April 1992, pp. 293-310; Kilaparti Ramakrishna, 'North-South Issues, the Common Heritage of Mankind and Global Environmental Change', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Ltd., 1992), pp. 145-68; Ian H. Rowlands, 'The International Politics of Global Environmental Change', in Rowlands and Greene, Global Environmental Change, pp. 19-37; Vandana Shiva, V.M. Meher-Homji, N.D. Jayal, Forest Resources: Crisis and Management, (Dehra Dun: Natraj Publishers, 1992); Michael Redclift, 'Sustainable Development and Global Environmental Change', Global Environmental Change, Vol. 2, No. 1, March, 1992, pp. 32-42; Richard Elliot Benedick, Ozone Diplomacy: New Directions in Safeguarding the Planet, (London: Harvard University Press, 1991); Gareth Porter and Janet Welsh Brown, Global Environmental Politics, (Boulder: Westview Press, 1991); William B. Wood, 'Tropical Deforestation: Balancing Regional Development Demands and Global Environmental Concerns', Global Environmental Change, Vol.

include the argument of MacNeill and others that “leaders in developing countries can and will try to bargain action on environmental issues of political concern to industrialized countries against action on economic, trade, debt, and equity issues of concern to developing countries”,¹¹ and Jessica Mathews’s argument that

[S]ince the developed countries must have the active cooperation of the developing world in order to solve global environmental problems, the potential for conflict is clear. The developing countries can be expected to exercise the leverage this situation confers to the fullest extent they can.¹²

Such claims assume that global environmental interdependence places the developing countries of the South in a strong bargaining position in relation to the industrialised countries of the North because the latter’s need for the South’s cooperation is very high. They make assumptions about the character of the interests and preferences of developing countries, for example that these countries place less emphasis on global environmental protection as compared to the progress they might achieve in other issue areas such as debt, trade and aid, and consequently will adopt linkage strategies to trade their cooperation over global environmental issues for concessions in those areas. They assume that the logic of coalition formation will be self-evident, and that developing countries will unite to exercise bargaining leverage.

1, No. 1, December 1990, pp. 23-41; Kilaparti Ramakrishna, ‘Third World Countries in the Policy Response to Global Climate Change’, in Jeremy Leggett, ed., Global Warming: The Greenpeace Report, (Oxford: Oxford University Press, 1990), pp. 421-37; Qu Geping, ‘China’s Environmental Policy and World Environmental Problems’, International Environmental Affairs, Vol. 2, No. 2, Spring 1990, pp. 103-8; McCormick, The Global Environmental Movement, pp. 149-70; Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988).

¹¹ Jim MacNeill, Pieter Winsemius and Taizo Yakushiji, Beyond Interdependence, (Oxford: Oxford University Press, 1991), pp. 68-9.

¹² Jessica Tuchman Mathews, ‘Introduction and Overview’, in Jessica Tuchman Mathews, ed., Preserving the Global Environment: The Challenge of Shared Leadership, (London: W.W. Norton and Company, 1991), pp. 15-38, p. 34.

Statements emanating from the South lend plausibility to such claims. For instance, many in the South take the view of a Caribbean official who argues that “for the first time in more than a decade, the developing countries have an issue where they have some real leverage”.¹³ The Indian Environment Minister, Kamal Nath, is recorded as saying “[T]he begging bowl is really in the hands of the Western world”.¹⁴ And a respected Southern think-tank, the Geneva-based South Centre, has called upon the developing countries to use their new bargaining power to reopen the North-South dialogue: in the run-up to the Earth Summit, it urged the developing countries “not to enter into any agreements in the ... environment-related negotiations unless these are linked to corresponding international action and firm commitment on North-South development issues and global economic relations”, stressing that the

[I]ssues on which the South should receive firm commitments from the North are: (i) debt relief, (ii) increase in official development assistance, (iii) mechanisms facilitating the South’s access to international liquidity, (iv) stabilization and raising of commodity prices, and (v) access to markets in the North.¹⁵

Nevertheless, these general claims and statements do not provide an adequate substitute for in-depth studies. The various assumptions that they make need to be justified. It is not clear, for instance, that developing countries have bargaining leverage because the North needs their cooperation to resolve global environmental issues; it could be argued that they require the North’s cooperation to solve environmental and developmental problems, and given their general weakness, it is

¹³ Quoted in ‘Environmental War Heats Up’, International Herald Tribune, 18 March, 1992.

¹⁴ Quoted in ‘The Earth Wars’, India Today, 15 June, 1992, p. 26.

¹⁵ South Centre, Environment and Development - Towards a Common Strategy of the South in the UNCED Negotiations and Beyond, (Geneva: South Centre, 1991), p. iii.

really the North which is in a superior bargaining position. Similarly, it is not obvious that developing countries are genuinely interested in making gains in fields like debt, trade and aid through the pursuit of linkage strategies. The logic of coalition formation is also not immediately compelling - on many international issues, developing countries act independently, or in alliance with small groups of states, even from the North. This thesis therefore fills a gap in the literature by getting beyond generalisations about the policies and perceptions of developing countries in a detailed analysis of Indian policy on global environmental issues.

II. INDIAN POLICY

There are three important reasons for studying Indian policy. First, this fills a gap in the literature because, as noted earlier, there are few in-depth studies on developing countries, and none on India.

Second, such a study is particularly valuable because of India's significance - its participation in the resolution of global environmental issues is very important because its huge population, constituting one-seventh of humankind, and its rapid industrialisation policy are placing significant and growing pressures on the global environment. For instance, in the case of climate change, India is already the fifth-largest producer of greenhouse gases in the world, and its contribution to global warming is steadily increasing.¹⁶ Or to take the example of biodiversity loss, India is one of only twelve 'megadiversity' nations in the world, but population and

¹⁶ See Chapter 6.

development pressure are steadily depleting its stock of genetic resources.¹⁷

Third, India makes an excellent subject for a case study of Southern policy on global environmental issues. Indian environmental policy has generally reflected the concerns felt by other developing countries.¹⁸ India has also traditionally been a leading member of the coalition of developing countries, with considerable influence in the major organisations that speak for the South, including the Non-Aligned Movement, the G-77, and the G-15. As this thesis will show, it has played a key role in organising and articulating the South's response in global environmental negotiations. Finally, its diversity, the enormous problems it faces, including immense poverty and large-scale environmental degradation, and also its considerable strengths, including abundant human resources and a strong technological infrastructure, mean that India provides a very good example of the diverse challenges, opportunities and problems that face many developing countries.

This thesis addresses four main questions about Indian policy on global environmental issues: the process of policy making in India; the character of Indian interests and preferences; the nature and evolution of India's bargaining strategy; and the outcome of international negotiations for India. The two theoretical approaches that have in recent years dominated international relations analyses of inter-state negotiations, neorealism and neoliberalism,¹⁹ provide contrasting perspectives on

¹⁷ See Chapter 8.

¹⁸ See Chapter 2.

¹⁹ Joseph S. Nye, Jr., 'Neorealism and Neoliberalism', World Politics, Volume 40, No. 2, 1987-88, pp. 235-51. For classic statements of the realist position, see Hans J. Morgenthau, Politics Among Nations, (New York: Alfred A. Knopf, Inc., 1978, 5th edn, revised); Kenneth Waltz, Man, the State and War: A Theoretical Analysis, (New York: Columbia University Press, 1959). The most important statements of the neorealist position include Kenneth Waltz, Theory of International Politics, (London: McGraw-Hill Book Company, 1979); Stephen Krasner, Structural Conflict - The Third

each of these questions.

The neorealist model is distinguished by its parsimony. States are unitary, rational actors in an anarchic international system. Their behaviour is fundamentally determined by the structure of the international system, i.e. the distribution of power in the international system, and their place in that distribution. They act as “defensive positionalists”,²⁰ and try to maximise their absolute gains as well as their relative gains vis-a-vis other states. At a minimum, they try to preserve their sovereignty and reduce their vulnerability, and beyond this, they try to maximise their power.

Neoliberals, however, view the neorealist model as misleading and inadequate. They argue that non-structural considerations can influence conceptions of the national interest. Societal pressures, international norms, interdependence, and international institutions help moderate the international anarchy, thereby allowing states to pursue interests other than power maximisation. Furthermore, state interests are not always given, but can be learnt through the interaction of domestic and

World Against Global Liberalism, (London: University of California Press, 1985); Joseph M. Grieco, ‘Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism’, International Organization, Vol. 42, No. 3, 1988, pp. 485-507. For the liberal challenge to realist theory in the 1970s, see Robert O. Keohane and Joseph S. Nye, eds., Transnational Relations and World Politics, (London: Harvard University Press, 1971); Richard W. Mansbach, Yale H. Ferguson, and Donald E. Lampert, The Web of World Politics, (Englewood Cliffs: Prentice-Hall Inc., 1976); Robert O. Keohane and Joseph S. Nye, Power and Interdependence: World Politics in Transition, (Boston: Little, Brown, 1977). For important statements of the neoliberal perspective, see Stephen D. Krasner, ed., International Regimes, (New York: Cornell University Press, 1983); Robert O. Keohane, After Hegemony: Cooperation and Discord in the World Political Economy, (Princeton: Princeton University Press, 1984); Kenneth Oye, ed., Cooperation Under Anarchy, (Princeton: Princeton University Press, 1986).

²⁰ Grieco, ‘Anarchy and the Limits’.

international factors during the course of inter-state bargaining. Neoliberals also argue for a pluralistic view of how state preferences are formed. In this view, non-state actors can induce or constrain the behaviour of states. Thus, domestic actors such as the media, pressure groups and business interests can play important roles in influencing state policies. A recent important strand of neoliberal thinking similarly highlights the role of national scientific groups and transnational epistemic communities in influencing the policies of different states.²¹ Finally, neoliberals also question the neorealist assumption of the state as a unitary actor, for instance by highlighting evidence that shows the significance of bureaucratic politics.

In addressing the policy making process in India, then, this thesis will assess the influence of non-state actors on the formulation of Indian policy, and the degree of autonomy enjoyed by the government in deciding policy. Furthermore, it will judge whether the government can be seen as a unitary actor, or whether there have been occasions when conflicting agendas have been pursued by different arms of the government. On the question of the character of Indian interests and preferences, this thesis will determine whether these have reflected purely a desire to maximise power, or whether they have also reflected the influence of traditions and values, and perhaps, on occasion, uncertainty and the influence of a learning process.

The third question addressed by this thesis concerns India's bargaining strategy, and in particular, the importance accorded by it to tactical alliances with other

²¹ Peter M. Haas, 'Obtaining International Environmental Protection Through Epistemic Consensus', in Rowlands and Greene, Global Environmental Change, pp. 38-59; special issue of International Organization, Vol. 46, No. 1, 1992; Steinar Andresen and Willy Østreg, International Resource Management: The Role of Science and Politics, (London: Belhaven Press, 1989); Lynton Keith Caldwell, Between Two Worlds: Science, the Environmental Movement, and Policy Choice, (Cambridge: Cambridge University Press, 1990).

countries. As the claims cited earlier show, it is commonly assumed that the developing countries will band together during international negotiations over the environment. This thesis will examine the importance of policy coordination with other developing countries for India, and the reasons for this. Has coalition formation, as neorealists would expect, been purely instrumental in maximising India's power? Or, as neoliberals would expect, have tradition and shared values, which Hansen describes as the "psychocultural" roots of Southern unity,²² played a role? What have been the sources and limits of bargaining power for the coalition of developing countries?

The final question this thesis addresses concerns the outcome of global environmental negotiations for India and the coalition of developing countries it forms a part of. Neorealists argue that it is sufficient to look at state preferences and the distribution of power in the international system to determine negotiating outcomes. Hence, given the North's domination of the international system through its control over the structural bases of power,²³ they tend to be extremely sceptical of the South's capacity to achieve significant gains in bargaining with the North, a scepticism strengthened by the knowledge that the 1980s witnessed a significant marginalisation of the South in international politics.²⁴ They do not expect bargaining outcomes to

²² Roger D. Hansen, Beyond the North-South Stalemate, (London: McGraw-Hill Book Company, 1979), p. 6.

²³ i.e. its control over other people's security from violence, its control of the system of production of goods and services, its ability to determine the structure of international finance and credit, and its influence over knowledge and its control or influence over the acquisition, communication and storage of knowledge and information. [Susan Strange, 'The Persistent Myth of Lost Hegemony', International Organization, Vol. 41, No. 4, 1987, pp. 551-74, p. 565].

²⁴ On the marginalisation of the South during the 1980s, see, for example, Kofi Bueno Hadjor, ed., New Perspectives in North-South Dialogue - Essays in Honour of Olof Palme, (London: I.B. Tauris and Company Limited, 1988); John Ravenhill,

favour the South unless it can acquire the resources to threaten the North's structural power, as it was able to, briefly, when it played the oil card during the North-South confrontation of the 1970s.²⁵ Indeed, fairly strong assertions are made on this point by one of the most important neorealist works on North-South relations, Krasner's Structural Conflict. Krasner argues that developing country preferences in international negotiations tend to be for regimes that legitimate the unilateral assertion of sovereign authority by states, and which enshrine norms and principles of authoritative allocation.²⁶ On the other hand, the North is guided by notions of free-market liberalism, which bring it into direct conflict with the idea of authoritative allocation. Therefore, unless the South is able to successfully challenge the North's greater structural power, North-South negotiations to establish new global regimes

'The North-South Balance of Power', International Affairs, Vol. 66, No. 4, October 1990, pp. 731-48. The main reason for this marginalisation was the debilitating effect of the debt crisis on many developing countries, particularly in Latin America and Africa - in many cases, real wages declined below 1980 levels, standards of living declined, investment declined, and economic activity was reduced. [Rudiger Dornbusch and Stanley Fischer, 'Third World Debt', Science, Vol. 234, 14 November, 1986, pp. 836-41; Robert Pollin and Eduardo Zepeda, 'Latin American Debt: The Choices Ahead', in Hadjor, New Perspectives, pp. 102-14; Kenneth Dadzie, Secretary-General, UNCTAD, 'The United Nations and the Problem of Economic Development', in Adam Roberts and Benedict Kingsbury, eds., United Nations, Divided World, (London: Clarendon Press, 1988), pp. 139-57]. Other reasons for the South's marginalisation included the revival of East-West tensions in the aftermath of the Soviet invasion of Afghanistan, and the consequent domination of the international political agenda by military-security issues; the relatively inward-looking policies of Northern states as a result of economic pre-occupations brought on by the international recession of the early 1980s; the ideological opposition of Northern states, led by the United States, to international dirigisme and the main tenets of the South's demand for a new international economic order; and the erosion of Southern solidarity as a result of divisions over the continued relevance and feasibility of pursuing NIEO demands, as well as due to internecine conflicts such as the Iran-Iraq war.

²⁵ Tony Smith, 'Changing Configurations of Power in North-South Relations Since 1945', International Organization, Vol. 31, No. 1, 1977, pp. 1-27; Hedley Bull, Justice in International Relations, (Waterloo: University of Waterloo, 1983).

²⁶ Krasner, Structural Conflict, p. 6.

should either result in the North's preferences being accepted, or in negotiations breaking down and leading to disengagement between the North and the South.²⁷

Neoliberals, however, do not believe negotiating outcomes entirely depend on power considerations. They reject the pessimism of neorealists with regard to the ability of states to cooperate with each other. They suggest that cooperation is possible, based on reciprocity, the long shadow of the future, the ability to communicate, and learning, and is often facilitated by institutions and regimes. Consequently, in determining bargaining outcomes, heed must be paid not only to the power structure, but also to the process of negotiation, the role of institutions, and the ways in which state and non-state actors relate to each other.

These views also lead neoliberals to take issue with neorealist interpretations of the outcome of North-South bargaining in the 1970s. They argue that the South's failure to secure concessions from the North cannot be explained purely by reference to the South's inability to develop sufficient bargaining power. Other factors must also be considered, including the short-sightedness of the North, and the often ill-conceived nature of Southern demands. Diverse actors in the North, including non-state actors like the Club of Rome²⁸ and members of the Brandt Commission,²⁹ as well as states like the Nordic countries, were sympathetic to Southern demands,³⁰ but were unable to change the short-sighted views of others in the North. Several of the

²⁷ Ibid., pp. 270 and 301-2.

²⁸ Jan Tinbergen, Reshaping the International Order: A Report to the Club of Rome, (New York: E.P. Dutton and Co., Inc., 1976).

²⁹ Willy Brandt, North-South: A Programme for Survival: The Report of the Independent Commission on International Development Issues, (London: Pan Books, 1980).

³⁰ J.L. Richardson, 'Ethical Issues in North-South Relations', in Robert O'Neill and R.J. Vincent, eds., The West and the Third World: Essays in Honour of J.D.B. Miller, (London: Macmillan, 1990), pp. 242-59.

South's goals were also ill-conceived, and the South therefore faced difficulties in convincing influential groups in the North that its demands were reasonable, just, or mutually beneficial if conceded.³¹ For instance, it tended to link agendas across issues and adopted positions that reflected the need to accommodate diverse developing country interests for the sake of unity - the resulting positions were often unwieldy and replete with zero-sum issues, and were consequently rejected by the North.³²

This thesis, then, will examine the outcome of global environmental negotiations for India and the coalition of developing countries, with a view to evaluating the gains and losses these countries have made, and whether these can be explained purely in terms of the relative power capabilities of the North and the South, or whether other factors are also important. It will thus shed light on the basic broader question of the impact of global environmental issues on North-South relations.

III. MANNER OF TREATMENT

This thesis seeks to shed light on the policies and perceptions of developing countries with regard to global environmental issues. This could be done either through the prism of a detailed case study of a single developing country, or through

³¹ Robert W. Tucker, The Inequality of Nations, (London: Martin Robertson and Company Limited, 1977); Tony Smith, 'The Underdevelopment of Development Literature: The Case of Dependency Theory', World Politics, Vol. 31, 1978-79, pp. 247-88; Robert L. Rothstein, Global Bargaining: UNCTAD and the Quest for a New International Economic Order, (Princeton: Princeton University Press, 1979).

³² Rothstein, Global Bargaining, p. 34; Hansen, Beyond the North-South Stalemate, p. 129.

a broad comparative study of a number of different developing countries. The latter approach would tend not to get into details, and like much of the existing literature, would make many generalisations. A detailed case study, on the other hand, would reveal the complexity of policy making which a relatively broad study would hide. Because of the deep insights that can be obtained from a detailed case study on the nature of policy making in developing countries, and because of the relative dearth of such studies, this is the approach adopted by this thesis.

The preoccupations of this thesis make two aspects of a case study important: the choice of country, and the selection of environmental issues. The reasons for choosing India as the focus of this thesis have been explained earlier. As far as the selection of issues goes, constraints of space naturally limit the range that can be discussed. The issues examined, namely ozone depletion, climate change, and the loss of biodiversity, have been selected for their symbolic importance: of the treaties to emerge from global environmental negotiations, the ground-breaking ozone agreements were the first to be achieved, while the conventions on climate change and biodiversity were the only treaties specifically prepared for presentation to the historic 1992 Earth Summit. Negotiations over these issues are studied up to the Earth Summit; subsequent developments are not analysed because the events are too proximate for an adequate and scholarly analysis.³³

Three areas were intensively researched for this thesis in order to locate the case study of India firmly in the context of global environmental discussions. First,

³³ It is also possible to argue that events up to the Earth Summit constitute the first phase of North-South bargaining over the global environment. The ongoing phase of ratification and implementation of agreements can be the subject of future work.

because of the lack of substantive analyses of Indian policy on global environmental issues and the lack of general studies on Indian foreign environmental policy, a considerable amount of empirical and primary research was conducted on Indian policy. Second, a substantial amount of research and synthesis went into providing overviews of how the scientific and technical specificity of each global environmental issue fed into the political process. Finally, considerable research was conducted in order to provide detailed pictures of how the political dynamics of each issue unfolded. The organisation of this thesis reflects the integration of the research conducted on these three areas in a way that facilitates understanding of the evolution of Indian policy, and also sheds light more generally on the policies and perceptions of developing countries and the impact of global environmental issues on North-South relations.

Chapter 2 provides some background on India's foreign environmental policy. It identifies characteristic features of the policy making process, and notes the traditional autonomy of the government in shaping policy. It also outlines traditions and values which have tended to shape Indian policy, highlighting particularly the importance of the "poverty is the greatest polluter" orthodoxy established by Indira Gandhi and the legacy of India's foreign policy.

Chapters 3 to 8 take up, in order, the issues of ozone depletion, climate change, and loss of biodiversity. Each issue is treated in the same way, with an introductory chapter that outlines the evolution of international concern over the issue, particularly the way in which the scientific and technical specificity of the issue feeds into the political process, and a chapter that analyses the evolution of India's strategy in international negotiations over the issue. Events are discussed in a

chronological manner in these chapters.

Ozone depletion was the first issue to be resolved. The analysis of the ozone issue (Chapters 3 and 4) shows that the initial negotiation process, up to the signing of the Montreal Protocol in 1987, was dominated by the North, with the developing countries generally showing little inclination to play more than a marginal role. Gradually, though, the developing countries realised that they needed to play a more active role to secure their interests, and fought a successful rearguard action to modify controversial clauses in the Montreal Protocol.

The ozone issue established important precedents for future global environmental agreements and taught the developing countries the importance of participating in international negotiations from their very inception, in order to influence the emergent agendas. Consequently, the South participated in international negotiations over the climate change and biodiversity issues right from the start, and in strength.

The discussion of the climate change issue (Chapters 5 and 6) demonstrates that problematic North-South issues to do with the allocation of responsibility for climate change and the distribution of the costs of responding to it emerged at an early stage in international deliberations. These were to strongly influence the course of negotiations and the eventual outcome, a weak framework convention.

The examination of the biodiversity issue (Chapters 7 and 8) reveals the contrast between the long history of international interest in biodiversity conservation and the much more recent history of international concern over ozone depletion and climate change. Even so, the loss of biodiversity was elevated to the status of a global environmental issue only in the 1980s. Despite general agreement over the

importance of biodiversity conservation, significant North-South differences emerged through the 1980s over the question of access to and control of plant genetic resources, the distribution of the costs and benefits of biotechnology, and trends in intellectual property protection in the North. These were to strongly influence the biodiversity convention negotiations.

This thesis shows that North-South differences played a crucial role in the outcome of negotiations over each global environmental issue discussed. It also reveals the central role that India played in organising and articulating the South's response in negotiations. Consequently, the concluding chapter (Chapter 9) argues that certain strong lessons can be drawn from the Indian case about the impact of global environmental issues on North-South relations. The Indian case suggests that developing countries did not regard their cooperation in the resolution of global environmental issues purely as a bargaining chip with which to extract concessions from the North. Still less did they perceive global environmental issues as providing an opportunity to pose a macro-challenge to the North, linking agendas across issue areas. Instead, their goals reflected perceptions of constraints and mutual interests in bargaining with the North. Their bargaining strategy thus tended to be moderate and flexible, unlike the confrontational approach so typical of the 1970s.

IV. SOURCES

Access to primary material on Indian government policy is often very difficult to obtain. Under government regulations, all internal memoranda, negotiating briefs, Cabinet notes, and other such documents are classified and unavailable to the public.

India does not have a freedom of information law. The government, for its part, tends to display an obsession with secrecy that, as one observer has noted, often makes it “impossible to obtain any worth-while information from the government through regular official channels”.³⁴ Despite these constraints, primary research for this thesis was conducted in India, much of it in the Ministry of Environment and Forests. The thesis benefited enormously from the confidence of many senior government officials.³⁵ Interviews with senior serving and retired civil servants who were involved in policy formulation, as well as influential environmentalists, journalists, and other knowledgeable commentators, helped to fill in the gaps and to elaborate on the information gathered from confidential government sources. Newspaper and news-magazine articles, publications of non-governmental organisations, and government publications also proved to be useful primary sources, providing evidence with regard to the government’s position and the policy advice of non-governmental actors.

Secondary sources on Indian environmental policy are very limited. The meagre literature that exists concerns itself almost exclusively with domestic policy. The first journals devoted to Indian environmental policy, Sustainable Development and Down to Earth, came into publication in late 1991 and 1992 respectively. These have begun to fill an important gap. Overall, though, the picture remains bleak for students of Indian environmental policy. The coverage of Indian foreign policy in the secondary literature is much better. Nevertheless, even here there are relatively few

³⁴ J. Bandyopadhyaya, The Making of India’s Foreign Policy: Determinants, Institutions, Processes and Personalities, (Bombay: Allied Publishers, 1970), p. 113.

³⁵ For obvious reasons, the confidentiality of sources is maintained at a number of points in the thesis.

balanced and incisive accounts of foreign policy making, particularly in the 1980s. One of the better books on the process and determinants of Indian foreign policy making still remains a 1970 account by Bandyopadhyaya.³⁶

Research on the scientific and technical background to the evolution of international concern over the different global environmental issues was assisted by a number of readable accounts, both books as well as articles in a number of scientific and legal journals. The scientific journals were a consistent source of valuable information, and included well-established journals like Science, New Scientist, Nature, Ambio, Scientific American, and The Ecologist, and new ones like Global Environmental Change.

Research on the negotiations over the different issues was greatly aided by the extensive United Nations documentation that exists, particularly of UNEP. The proceedings and declarations of the large number of conferences held in recent years on global environmental protection also provided valuable primary information. Newspaper articles also proved to be important primary sources, as did articles in the scientific journals mentioned above, as well as publications of environmental and industrial pressure groups.

This thesis also greatly benefited from the attendance of the author at the Earth Summit. The Earth Summit provided an exceptional opportunity to conduct interviews, and to become acquainted with the ideas and opinions of a wide variety of politicians, environmentalists, academicians, bureaucrats, media figures and others. The daily newspapers published specially for the summit, including Terraviva, Earth Summit Times, and special editions of the Jornal do Brasil, also provided very useful

³⁶ Bandyopadhyaya, India's Foreign Policy.

material for this thesis.

International environmental policy is not a mature field in international relations, unlike, say, strategic studies. The secondary literature in the area is thus relatively limited, although a number of very good works already exist. There is a considerable amount of work that is now being done, both of an empirical and a theoretical nature, which this thesis will supplement.

2. INDIA'S FOREIGN ENVIRONMENTAL POLICY

This chapter identifies traditional features of India's foreign environmental policy. This will facilitate the interpretation of India's policy on global environmental issues. The first part identifies characteristic features of the policy making process, and the second part outlines the traditions and values which have tended to shape policy.

I. THE POLICY MAKING PROCESS

The dominant feature of the policy making process in India has undoubtedly been the autonomy of the government in shaping policy. Other actors, including political parties, environmental groups, business interests, and the media, who might typically be expected to play an important role in the formulation of a country's foreign environmental policy, have generally exercised very little influence.

(a) Autonomy of the Government

There has traditionally been very little public debate over foreign environmental policy in India. This is due partly to the very limited public awareness and understanding of the issues involved, unsurprising in a country where illiteracy and ignorance are widespread. Indeed, on the recent admission of an Environment Secretary, the top civil servant in the Environment Ministry, "[T]oday we find that awareness is abysmally low, not only among the illiterate and uneducated, but among

all people, including educated and uneducated, urbanites and ruralites”.¹ Partly because of this absence of public debate, the government - particularly the ministries most involved with foreign environmental policy, namely the Ministry of Environment and Forests (MOEF) and the Ministry of External Affairs (MEA) - has enjoyed considerable autonomy in policy making.

The government has also deliberately sought to preserve its autonomy. It has engaged in very limited consultation over policy with the non-governmental sector, and has tended to restrict the access of non-state actors to information. The explanation for this behaviour appears to lie mainly in the bureaucracy's attitude.

The powerful and elitist Indian bureaucracy functions in an elitist society.² This has encouraged it to discount and discourage non-governmental inputs to policy. Thus, two leading Indian political scientists observe that the bureaucracy

fails to recognise the relationship between the governors and the governed as an essential part of the democratic process. One of the most undesirable occupational characteristics of bureaucracy in India is that it treats administration as a secret, even esoteric process. There is no appreciation of the citizen's viewpoint and public relations aim more at publicity and propaganda than at establishing rapport with the community or making genuine attempts to involve public participation.³

Other general reasons for the bureaucracy's attitude include: a sceptical view of non-governmental organisations, on the grounds that they are guided by particular

¹ K.P. Geethakrishnan, 'Sustainable Development in Operation', in Malcolm S. Adiseshiah, ed., Sustainable Development - Its Content, Scope and Prices, (Delhi: Lancer International, 1990), pp. 7-21, pp. 9-10.

² And as a famous Indian economist notes, "[I]t is important to understand the elitist nature of India to make sense of India's policies". [Amartya Sen, 'How is India Doing?', in Iqbal Khan, ed., Fresh Perspectives on India and Pakistan, (Oxford: Bougainvillea Books, 1985), pp. 86-96, p. 91].

³ O.P. Dwivedi and R.B. Jain, India's Administrative State, (Delhi: Gitanjali Publishing House, 1985), p. 44.

interests and pursue predetermined agendas; a desire to avoid delays and controversies that might be generated by exposing policy to public scrutiny; and a view that the fundamental traditions of foreign environmental policy are so widely accepted that specific policies require no fresh debate.

Considerable evidence regarding the bureaucracy's attitude exists.⁴ In the field of environmental legislation, for instance, Abraham and Rosencranz point out that

[A]lthough the comparable pollution control laws of the United States and the United Kingdom were consulted by the drafters of India's clean air and clean water legislation, the public participation elements of those two nations' processes for environmental decision-making were systematically ignored.⁵

Citing the many difficulties placed in the way of citizen participation in environmental policy formulation, these analysts argue that "[I]n India, the only avenue for citizen response is public demonstration and other forms of civil agitation".⁶

The government's restrictive information policy has led prominent environmentalists such as S.R. Hiremath to plead that

the thrust of the government, whether at the national or the state level, with respect to voluntary agencies should be mainly in the following areas: Making scientific and administrative information available to environmentalists and grassroots groups; a freedom of information law

⁴ See, for example, Centre for Science and Environment (CSE), The State of India's Environment - 1982: A Citizens' Report, (New Delhi: CSE, 1982), and The State of India's Environment - 1984-85: The Second Citizens' Report, (New Delhi: CSE, 1985). See also the reports on the public hearings conducted in 1991 and 1992 by the People's Commission on Environment and Development, India.

⁵ C.M. Abraham and Armin Rosencranz, 'An Evaluation of Pollution Control Legislation in India', Columbia Journal of Environmental Law, Vol. 11, 1986, pp. 101-18, p. 111.

⁶ *Ibid.*, p. 113; see also Robert L. Hardgrave, Jr. and Stanley A. Kochanek, India - Government and Politics in a Developing Nation, (London: Harcourt Brace Jovanovich College Publishers, 1993, 5th edn), p. 172.

is a must.⁷

According to the Vice President of the respected Bombay Natural History Society (BNHS), Dilnavaz Variava,

[P]erhaps the biggest problem that NGOs face is a lack of information. We must demand access to information as a right, very forcefully on all issues. We are now reduced to going under false pretences, even sometimes in disguise, to get information from official sources.⁸

Criticism also comes from distinguished former senior civil servants. According to the former Foreign Secretary, Muchkund Dubey, “our bureaucracy has a reluctance to get outside inputs. It is arrogant, and thinks that outsiders have dated information which weakens their contributions; its contempt for outsiders means that it does not even part with obvious information ...”.⁹

In fairness to the government, it must be said that there have been signs of change in its behaviour recently. A 1992 policy statement on the abatement of pollution stresses the MOEF’s readiness to “involve the public in decision making”.¹⁰ It declares that

[T]he public must be made aware in order to be able to make informed choices. A high governmental priority will be to educate citizens about environmental risks, the economic and health dangers of resource degradation and the real cost of natural resources. Information about the environment will be published periodically. ... Access to information to enable public monitoring of environmental concerns, will be provided for.¹¹

Despite recent evidence of good intentions for the future, however, the fact

⁷ CSE, India’s Environment - 1984-85, p. 335.

⁸ People’s Commission on Environment and Development (PCED), India, Report - Public Hearing on Environmental Problems and Developmental Strategies - Bombay, 16-17 November, 1991, (New Delhi: PCED, 1991), p. 15.

⁹ Interview with Muchkund Dubey, former Foreign Secretary, New Delhi, 15/6/93.

¹⁰ MOEF, Policy Statement for Abatement of Pollution, (New Delhi: MOEF, 1992), para. 3.3.

¹¹ *Ibid.*, para. 11.1.

is the government has generally shown little inclination to encourage non-governmental inputs to policy.¹² Partly because of this, non-governmental actors have sometimes been reluctant or unable to contribute to policy formulation.

(b) Non-Governmental Inputs

1. Political Parties and Parliament

Party political contributions to foreign environmental policy have been insignificant. References to the environment have consistently appeared in the political manifestos of the major national parties only since 1980, and have tended to be of a very general and unsophisticated nature. Party political debates have primarily concerned national development policy, rather than environmental policy. Indeed, the failure of the Green Party to win a single seat in national elections demonstrates that in a poverty-stricken country with a pressing need for economic development, a green political platform is perceived to be of little relevance. On the rare occasions when the environment has been the subject of political debate, the focus has tended predominantly to be on domestic policy. Even in the year of the Earth Summit, the majority of questions on the environment in Parliament concerned domestic issues like industrial and vehicular pollution, deforestation, progress of afforestation, and the early clearance of developmental projects from the environmental angle.¹³

Foreign policy, moreover, is an area where political parties have generally been

¹² Anil Agarwal and Sunita Narain, 'Without the Right to Know, Planning is a Sham', The Economic Times, 24 May, 1992.

¹³ MOEF, Annual Report 1992-93, (New Delhi: MOEF, 1993), p. 101.

confident that the government of the day would go by traditional and largely consensual precepts. Foreign policy debates in Parliament have therefore been rare. In theory, Parliament has considerable powers to control foreign policy, through, for instance, its powers to sanction appropriations, cut or increase Ministerial budgets, and legislate on all aspects of foreign affairs.¹⁴ In practice, as Bandyopadhyaya wrote in 1970, but with continued relevance for the period since,

on account of the overwhelming majority enjoyed by the Indian National Congress in the parliament for many years, the virtual monopolization of thinking on foreign policy within the party by Jawaharlal Nehru and the subsequent Prime Ministers and Foreign Ministers ... the general absence of reading habits, knowledge of and interest in foreign policy on the part of Members of Parliament, and also due to the fact that the broad foreign policy formulated by Nehru and pursued more or less unchanged in the post-Nehru era represents the consensus of Indian political opinion, cutting across different political parties, the theoretical functions of parliament with regard to the making of foreign policy have remained largely unfulfilled.¹⁵

A Consultative Committee of Parliament is attached to the MOEF, and may meet several times a year. It may seek clarifications and question government policy, or draw attention to concerns expressed by political parties. In practice, however, it has served primarily as a briefing forum for the MOEF to provide information to Members of Parliament. There appears to have been no significant scrutiny of foreign environmental policy by the committee in recent years.¹⁶ The same appears to be true about the Consultative Committee attached to the MEA. It has mainly served as “a mere transmission belt between the Foreign Minister and parliament for the conveyance of the official foreign policy”.¹⁷

¹⁴ Bandyopadhyaya, India's Foreign Policy, pp. 130-1.

¹⁵ *Ibid.*, p. 132. Similar points are made by Hardgrave and Kochanek, India - Government and Politics, pp. 81-2.

¹⁶ Interview with Keshav Desiraju, Director, MOEF, New Delhi, 26/4/93.

¹⁷ Bandyopadhyaya, India's Foreign Policy, p. 134.

2. Environmental non-governmental organisations (NGOs)

There has been considerable growth in NGO numbers over the last two decades, coinciding with a period in which the mounting ecological costs of development in India have become increasingly evident. Their present number is estimated at around 3400, the vast majority being very small, grass roots organisations.¹⁸ The influence of the latter, by definition, is concentrated at the grass roots level. Of the rest, some have deliberately channelled their limited resources towards making concrete contributions on the ground rather than participating in policy debates. Some relatively well-organised NGOs have proved reluctant to contribute to policy unless specifically asked to do so by the government - this has especially been the case with NGOs dependent on the patronage of the government for their effective functioning, or which value the perks of association with the government, such as sponsorship to participate in internationally-aided projects. All this leaves very few NGOs which possess at least some of the resources,¹⁹ and the interest, to try and influence foreign environmental policy.

Some NGOs have made sporadic efforts to link up and exert joint pressure on the government. These, however, have tended to focus on specific cases, such as the Narmada dam, rather than on influencing broad government policy. These targeted efforts, moreover, have rarely had much impact. In fact, on many occasions, they have been opposed by other groups of NGOs. A good example is provided by the Narmada dam controversy, which created a rift between the World Wide Fund for Nature - India (WWF-India) and its Gujarat chapter, with the former opposing the

¹⁸ MOEF, Environment and Development: Traditions, Concerns and Efforts in India, (New Delhi: MOEF, June 1992), p. 49.

¹⁹ CSE, India's Environment - 1984-85, p. 342.

dam and the latter supporting it. Indeed, the lack of unity between NGOs has proved a major obstacle to their effectiveness as a pressure group.²⁰ Expressing a widely held view, Jill Carr-Harris of the Delhi based NGO, South-South Solidarity, complains that Indian NGOs “have no real desire to work as a community”.²¹ A particular problem, according to Carr-Harris, is that because the activities of several prominent NGOs revolve around strong personalities, cooperation between them often becomes a casualty of the personal incompatibilities of these personalities.

Despite various handicaps, a few NGOs have had some, albeit limited, influence on India’s foreign environmental policy. Examples include the Centre for Science and Environment (CSE), the Tata Energy Research Institute (TERI), the Society for Development Alternatives, and WWF-India. These NGOs, however, share one distinguishing characteristic, which has in effect meant that they have rarely vigorously opposed or criticised government policy: a strong sense of nationalism, rooted in the view that the answers to India’s environmental crisis are to be found in domestic traditions and the revival of strong communities at the grass roots level. Their views about Western environmental concerns, for instance, are reflected in this statement of prominent environmentalists Anil Agarwal and Sunita Narain of the CSE:

As yet there is little understanding in the West about the complexity of environmental issues in countries like India. India’s forests, for instance, are not wilderness areas as in the US but habitats of millions of people. The environmental issue in India cannot be one of conservation but of rational and sustainable use of its natural resources. This is something that the West cannot teach us because it has no

²⁰ Smitu Kothari, ‘Social Movements and the Redefinition of Democracy’, in Philip Oldenburg, ed., India Briefing, 1993, (Boulder: Westview Press, 1993), pp. 131-62, p. 161.

²¹ Interview with Jill Carr-Harris, South-South Solidarity, New Delhi, 15/6/93.

experience of how to integrate the environmental imperative with the realities of an intensely poor and heavily populated region and where environment is not just a matter of the quality of life but of survival.²²

And with specific reference to emerging global environmental issues, Agarwal and Narain argue that

there is a genuine fear that the Western concern for the environment could tread upon the sovereignty of nations through the imposition of more conditionalities on foreign loans and aid. While political arm-twisting has been the basis of many so-called international cooperation efforts, it has never been an openly stated international norm of behaviour. But today in the name of environment, we could see a return to a time of open interventions.²³

Consequently, they recommend that the developing world

get together to assert the right of nation-states to decide their own development choices. In a world that is still extremely unequal in terms of power, knowledge and wealth the framework of nationalism cannot yet be given up in favour of unbridled internationalism.²⁴

3. Business and Trade Unions

Business interests, because they have (until very recently) been very highly sheltered by the Indian government's protectionist economic policies from international competition and Northern environmental standards, have neither had to, nor been expected to, respond to international environmental developments. They have led a protected existence in an ethos that has, as will be seen, prioritised development over the environment to a very high degree. Their contribution to foreign environmental policy has therefore been generally limited. Trade unions, for

²² Anil Agarwal and Sunita Narain, 'A New Morality', The Illustrated Weekly of India, 24 December, 1989, pp. 84-7, p. 84.

²³ Ibid., p. 87.

²⁴ Ibid.

their part, have tended primarily to concern themselves with wage levels and employment guarantees for workers, rather than environmental policy.

4. The Media

National television and radio services, both under government control, have generally been used to disseminate government propaganda. The national press has therefore tended to be a far more reliable guide to the diversity of opinion on many issues, including environmental policy. Its coverage of environmental issues has increased considerably over the years. As will be seen in subsequent chapters, it provides a useful guide to the views of policy makers and the pressures on the government.

(c) Governmental Apparatus

The MOEF is, by convention, the nodal agency of the Indian government for most issues relating to the environment.²⁵ It is also the nodal agency for matters relating to UNEP.²⁶ For issues which have a strong bearing on foreign policy or concern the United Nations system (except for UNEP), the MEA is, by convention, the nodal agency.

1. The MOEF

As in many other states, the impetus for the establishment of an institutional

²⁵ MOEF, Annual Report 1991-92, (New Delhi: MOEF, 1992), p. 5.

²⁶ *Ibid.*, p. 92.

framework for environmental protection in India came from the 1972 Stockholm Conference. The Indian government set up a Committee on Human Environment to coordinate its preparations for the conference. This committee established the need for coordination of the environmental programmes of the government. Consequently, in February 1972, a National Committee on Environmental Planning and Coordination (NCEPC) was established within the Department of Science and Technology (DST). The NCEPC, however, made little impact. Its role was essentially advisory, rather than executive. Furthermore, its diminishing political clout over the years, particularly following the exit of Indira Gandhi from government in 1977, meant that it was unable to significantly influence the actions of the various departments of the government whose involvement in controlling environmental degradation was necessary.²⁷

In 1980, following her return to power, Indira Gandhi appointed a Committee for Recommending Legislative Measures and Administrative Machinery for Ensuring Environmental Protection, under the chairmanship of the deputy Chairman of the Planning Commission, N.D. Tiwari. The Tiwari Committee revealed a frightening picture of environmental degradation across the nation. Its main recommendation was that a Department of the Environment (DOE) be created at the Centre, to “provide explicit recognition to the pivotal role that environmental conservation must play for sustainable national development”; further, “[I]n order to invest the Department with the stature essential for achieving the purpose for which it is recommended, the Committee feels that it should be under the charge of the Prime

²⁷ O.P. Dwivedi and B. Kishore, ‘India’s Environmental Policies: A Review’, in Shekhar Singh, ed., Environmental Policy in India, (New Delhi: Indian Institute of Public Administration, 1984), pp. 47-84, pp. 52-5.

Minister, assisted by a Minister at an appropriate level”.²⁸ Accordingly, the DOE was established on 1 November, 1980, with the Prime Minister as the Cabinet Minister in charge. In 1985, the MOEF was created through the expansion of the DOE.

2. Organisation of matters within the MOEF

At the top of the hierarchy in the MOEF comes the Minister. For several years, successive Prime Ministers, Indira Gandhi and Rajiv Gandhi, were the Cabinet Ministers in charge of the environment, supported by a deputy Minister or Minister of State. In more recent times, Cabinet Ministers, or Ministers of State with independent charge,²⁹ have been appointed.

The Secretary in the MOEF is the top civil servant in the ministry. Under the Secretary may come one or more Additional Secretaries, followed by a large number of Joint Secretaries, Directors, Deputy Secretaries and Under Secretaries. These positions tend to be filled by generalist administrators on short-term assignments, usually selected from the cadres of the elite Indian Administrative Service (IAS). The senior positions within the MOEF, involving control over policy issues, tend largely to be staffed by these bureaucrats. A number of other positions within the Ministry, such as Advisers, Joint Directors and different grades of scientists tend to be filled by specialists.

The distinction between generalists and specialists is an important one. Since

²⁸ DST, Report of the Committee for Recommending Legislative Measures and Administrative Machinery for Ensuring Environmental Protection, (New Delhi: DST, 1980), p. 27. [Hereinafter, Tiwari Committee Report].

²⁹ The present Minister, Kamal Nath, falls in this category.

the generalists control policy, the specialists, who generally lack political or administrative clout, are often perceived to suit their recommendations to the anticipated preferences of the generalists, to avoid controversy or to curry favour. This can have serious implications, for instance when issues arise which require policy-relevant scientific inputs, as is the case with global environmental issues; in such cases, sub-optimal decisions on policy may be made by the generalists (who lack scientific knowledge), because the specialist scientists distort the full range of scientific advice which could be given. Thus, according to a former senior consultant to the MOEF, Dr K. Chatterjee, “[T]he government is biased by government science. It does not get a true picture of the range of uncertainty because it does not consult the range of scientists. Government science tends to be very cautious to fit in with government policy”.³⁰ Confirming the low status of government scientists, one of the MOEF’s chief scientists, dealing with the implementation of the ozone agreements entered into by India, argues that “[A]t the peak of negotiations, almost as an afterthought, the scientists are consulted. However, they are given no time. Consequently, they tend to be very cautious, and usually recommend further studies”.³¹

The International Cooperation (IC) division of the MOEF usually handles foreign environmental policy. This is usually headed by a Joint Secretary. However, important decisions are rarely reached alone by the head of the IC division. The Secretary, and perhaps one or more of the Additional Secretaries, are usually associated with important policy decisions. The involvement of the Minister(s) in policy making is variable. In theory, the Minister, guided by the priorities of the party

³⁰ Interview with Dr K. Chatterjee, former Consultant, MOEF, New Delhi, 30/6/93.

³¹ Interview with Dr Indrani Chandrasekharan, Joint Director, MOEF, New Delhi, 30/6/93.

in power and the advice of the Council of Ministers, lays down policy, which is then left to the bureaucrats to implement. In practice, a considerable degree of control over policy has rested with the bureaucracy.³²

The concentration of power in the hands of the bureaucracy has been attributed to various factors: declining standards of ministerial competence;³³ economic policies adopted by independent India which necessitated a central role for the bureaucracy in administering a highly complicated system of controls;³⁴ and a preference, dating from colonial times, of those in authority for coercive rather than incentive-based or exhortative measures in the implementation of policies.³⁵ The increase in the bureaucracy's strength has been particularly associated with the period in the late 1960s and early 1970s, which saw a decline in the legitimacy of the Congress Party's leadership in national politics, centralisation of many powers under Indira Gandhi, and reliance by her on particular elements within the bureaucracy for assistance in the formulation of policies and political strategies.³⁶

In consequence, Ministers have often allowed themselves to be guided solely by the advice of the bureaucracy, doing little besides rubber stamping decisions made by the latter. This provokes the prominent ecologist and environmentalist, Prof Madhav Gadgil, to comment caustically on "the existing bureaucratic privilege of total

³² David C. Potter, India's Political Administrators 1919-1983, (Oxford: Oxford University Press, 1986), pp. 226-7.

³³ B.B. Misra, Government and Bureaucracy in India 1947-76, (Delhi: Oxford University Press, 1986), p. 169.

³⁴ Myron Weiner, 'Political Evolution - Party Bureaucracy and Institutions', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 15-47, especially pp. 39-43.

³⁵ Ibid. See also Hardgrave and Kochanek, India - Government and Politics, p. 96.

³⁶ Ibid.

lack of accountability”.³⁷

Recommendations have recently been made to the government for reducing the monopoly of the bureaucracy over policy. Thus, the Core Committee charged with devising a National Conservation Strategy recommends that

[I]n order to assist Government in taking balanced and well informed decisions on international protocols, conventions and issues relating to environmental matters, a high level Long Range Environmental Policy Planning Committee will be set up in the Ministry of Environment and Forests. Its reports will be submitted by the Ministry of Environment and Forests to the Cabinet Committee on Sustainable Development.³⁸

These recommendations, however, have not been implemented.

3. The MEA

The MEA lacks expertise on environmental issues. It does not have an environmental cell, and is forced to rely for scientific and other policy inputs on the MOEF. The need for an environmental cell has apparently been felt for some time.³⁹ However, as a result of bureaucratic inertia, no action has been taken in this regard. Senior bureaucrats have apparently been apprehensive that a single-issue desk, focusing on an issue that, for reasons explained later, is not a political priority of the government, would prove an unpopular assignment for members of the elite Indian Foreign Service (IFS) cadre.

The MEA's relatively benign Policy Planning Division has also not concerned

³⁷ Madhav Gadgil, 'Biodiversity: Time for Bold Steps', The Hindu Survey of the Environment 1992, 1992, pp. 21-3, p. 23.

³⁸ MOEF, National Strategy for Conservation and Sustainable Development: Report of the Core Committee, (New Delhi: MOEF, April 1990), pp. 20-1.

³⁹ Interview with Prof Satish Kumar, Head, School of Diplomacy, Jawaharlal Nehru University, New Delhi, 18/6/93.

itself with foreign environmental policy. Significantly, former Foreign Secretary, Muchkund Dubey, holds that planning on new issues such as the environment tends to depend on the inspiration of talented individuals, rather than provisions made in the institutional structure of the MEA.⁴⁰ Consequently, the Foreign Secretary could assign any MEA official to coordinate foreign environmental policy with the MOEF.

In recent times, the MEA's United Nations (UNS) division has handled foreign environmental policy because of the UN's involvement in global environmental negotiations. This has proved problematic, because the UNS division deals with all UN issues, ranging from human rights to Security Council issues, and its staff is spread too thin. Overburdened officials have found it difficult to build up expertise on a single issue like the environment. Furthermore, the administrative convention of periodic transfer of officials means that by the time officials build up some expertise over two or three years, they become liable to be transferred. Thus, within months of the Earth Summit, the two key MEA officials dealing with global environmental issues, Chandrasekhar Dasgupta and Ajai Malhotra, were sent on foreign postings. The senior of the two, Dasgupta, who led the Indian delegation to the climate change negotiations and the preparatory meetings for the Earth Summit, was appointed India's ambassador to China.

The MEA's hierarchy is similar to the MOEF's. Important decisions tend to be taken by the Additional Secretary in charge of the UNS division, in consultation with the Foreign Secretary. Ministerial involvement is variable, but as with the MOEF, the evidence seems to suggest that considerable autonomy in foreign

⁴⁰ Dubey interview.

environmental policy making has been exercised by MEA bureaucrats.⁴¹

4. Inter-Ministerial Coordination

Other ministries, besides the MOEF and the MEA, may have an interest in aspects of foreign environmental policy. In such cases, the concerned ministries meet to coordinate their actions. For instance, the MOEF set up an Inter-Ministerial Group (IMG) in 1991, under the chairmanship of the Secretary, MOEF, to consider issues related to the Earth Summit.⁴²

Issues may occasionally arise which prove difficult to resolve in inter-ministerial meetings, or which, because of their importance to national interests, are perceived to require careful consideration and wide consensus within the government. Such issues may be taken to a Committee of Secretaries (COS) headed by the Cabinet Secretary, the senior-most civil servant. The COS does not have a fixed membership, and usually only the Secretaries (or their representatives) of specified ministries participate. The COS does not have a statutory role, but by convention, its decisions are binding.

Some inter-ministerial issues may not prove to be amenable to resolution by the COS, or may be deemed by the COS to be of sufficient gravity to require direction from the highest political levels. Such cases are usually placed before the Cabinet Committee on Political Affairs (CCPA). The source of this committee's

⁴¹ See also Harish Kapur, India's Foreign Policy, 1947-92: Shadows and Substance, (London: Sage Publications Ltd., 1994), p. 159. Kapur notes the diminishing interest of Cabinet Ministers in foreign affairs, partly because much of their time is consumed in ensuring political survival, and partly because the evolution of the Indian political system has meant that they now need to pay much more attention to domestic constituents than was the case, for instance, in the days of Nehru.

⁴² MOEF, Annual Report 1991-92, p. 13.

authority lies in the fact that its membership is restricted to senior Cabinet Ministers, and the chairmanship invariably rests with the Prime Minister.

II. TRADITIONS AND VALUES IN INDIAN POLICY

India's foreign environmental policy has been shaped in large measure by certain traditions and values. The two main sources of these have been the orthodoxy established by Indira Gandhi regarding the way in which environmental problems in poor countries need to be viewed, and the legacy of India's foreign policy.

(a) Orthodoxy in Foreign Environmental Policy

Indira Gandhi's address as India's Prime Minister to the 1972 Stockholm Conference established, for reasons explained shortly, an orthodoxy that has prevailed ever since in India's foreign environmental policy.

The critical portion of Mrs Gandhi's speech said:

We do not wish to impoverish the environment any further and yet we cannot for a moment forget the grim poverty of large numbers of people. Are not poverty and need the greatest polluters? ... How can we speak to those who live in villages and in slums about keeping the oceans, the rivers and the air clean when their own lives are contaminated at the source? The environment cannot be improved in conditions of poverty.⁴³

It was clear to her that "[T]he environmental problems of developing countries are not the side effects of excessive industrialisation but reflect the inadequacy of

⁴³ Indira Gandhi, 'Man and Environment (Plenary Session of UNCHE, 14 June, 1972)', in DOE, Indira Gandhi on Environment, (New Delhi: DOE, 1984), pp. 20-9, p. 23.

development”.⁴⁴ The analysis and prescription were thus obvious - for India (and developing countries in general), poverty was the greatest polluter, and development was the key to solving the problems of both poverty and environmental degradation.

Mrs Gandhi argued that while the developing countries would try to protect the environment, the West also had a role to play in helping them, both directly and in alleviating poverty. She asked,

[W]ill the growing awareness of “one earth” and “one environment” guide us to the concept of “one humanity”? Will there be a more equitable sharing of environmental costs and greater international interest in the accelerated progress of the less developed world?⁴⁵

The developing countries, Mrs Gandhi said, would cooperate with the developed states to protect the global environment. But they reserved their sovereign right to decide their own environmental priorities. They were not prepared to see cooperation twisted to “add to the burdens of the weaker nations by introducing new considerations in the political and trade policies of rich nations”.⁴⁶ Rich countries, Mrs Gandhi argued, were not qualified to advise the poor about what their priorities ought to be -

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 their own natural resources. They got a headstart through sheer ruthlessness, undisturbed by feelings of compassion or by abstract theories of freedom, equality or justice.⁴⁷

It seemed hypocritical that now “[O]n the one hand the rich look askance at our continuing poverty - on the other, they warn us against their own methods”.⁴⁸

⁴⁴ Ibid., p. 28.

⁴⁵ Ibid., p. 29.

⁴⁶ Ibid.

⁴⁷ Ibid., pp. 20, 23.

⁴⁸ Ibid., p. 23.

Finally, Mrs Gandhi played down concerns, particularly pronounced in the North, about the impact of population growth in the developing world on levels of poverty and environmental degradation. She suggested that the concern with population was a very narrow way of looking at matters; it was at least as important to bear in mind the lifestyles and consumption patterns of the poor, particularly when compared with those of the rich. She said,

[I]t is an over-simplification to blame all the world's problems on increasing population. Countries with but a small fraction of the world population consume the bulk of the world's production of minerals, fossil fuels and so on. Thus we see that when it comes to the depletion of natural resources and environmental pollution, the increase of one inhabitant in an affluent country, at his level of living, is equivalent to an increase of many Asians, Africans or Latin Americans at their current material levels of living.⁴⁹

It is not difficult to understand the motivations for the emphases in Mrs Gandhi's speech. These accorded with her political preferences at the time. Her emphasis on poverty alleviation, in particular, was related to domestic concerns about mass poverty. Indeed, she won the 1971 General Elections on the slogan of 'Garibi Hatao!' - 'Eradicate Poverty!'. She was also inclined in this period to take a number of populist, socialist actions.⁵⁰ Many of these accorded with dependency theory prescriptions, much in currency in the developing world at the time. Thus, for instance, she nationalised banks and insurance companies, abolished the privy purses of the ex-Princes of India, and instituted special employment generation and poverty alleviation schemes. Industrialization, and the modernisation of the agricultural sector through the 'Green Revolution', continued to be government priorities.

The concern with sovereignty and the nationalist content in Mrs Gandhi's

⁴⁹ Ibid., p. 27.

⁵⁰ Hardgrave and Kochanek, India - Government and Politics, p. 362.

speech owed partly to foreign policy traditions that emphasized sovereignty and solidarity with the Third World. India, moreover, had just concluded a war in which the domestic perception of the role played by the major Western power, the US, was extremely negative. This negative perception built on India's unhappy experience in the mid-to-late 1960s of trying to accommodate the criticism of Western aid donors of its development strategy. This helps explain the anti-West streak in Mrs Gandhi's speech.

1. Maintenance of Orthodoxy

Mrs Gandhi's views have had an enduring impact on India's foreign environmental policy. Obviously, the fact that Mrs Gandhi's party has held power for much of the post-1972 period, with her at the helm of affairs for much of this time, has played a role. A charismatic and powerful leader, Mrs Gandhi clearly exercised enormous influence over both party and government.⁵¹

Other reasons, however, also help explain the maintenance of Mrs Gandhi's views as the orthodoxy. One important factor has been the accordance of development planners and the major political parties with the view that poverty alleviation through industrial development and economic growth must be the first priority of the government. The ecological costs of development have not, until recent times, caused particular concern to these groups. This is clearly reflected, as will be seen shortly, in the prioritisation of development over the environment by successive governments.

⁵¹ A.G. Noorani, Indian Affairs: The Political Dimension, (Delhi: Konark Publishers Private Limited, 1990); Inder Malhotra, Indira Gandhi: A Personal and Political Biography, (London: Hodder and Stoughton, 1989).

Mrs Gandhi's views also carried weight with the domestic environmental community. Her Stockholm speech highlighted the difficult choices between environment and development that faced developing countries. Nevertheless, her government took a number of environmental protection measures, including legislation of the Water (Prevention and Control of Pollution) Act, 1974, described as "the nation's first comprehensive programme for dealing with an environmental problem",⁵² amendments of the Constitution in 1976 to provide for environmental protection,⁵³ legislation of the Air (Prevention and Control of Pollution) Act, 1981, and administrative actions like the establishment of the NCEPC and the DOE. Mrs Gandhi also earned a lot of goodwill as a result of her personal support for Project Tiger, launched in 1973 to save the Indian tiger from extinction.

The nationalism and anti-West streak in Mrs Gandhi's Stockholm speech also tapped popular resentment of a colonial past. Indeed, as will be seen shortly, anti-colonialism is one of the enduring themes of Indian foreign policy. It has also deeply influenced thinking within the NGO community. Many NGOs take the view articulated by a prominent Indian ecological thinker, that

[P]rior to the advent of colonialism most Third World societies consisted of a mosaic of long settled and sophisticated agrarian cultures which had a finely tuned but delicately balanced relationship with this natural environment. Colonial and post-colonial capitalism has disrupted this relationship in many ways.⁵⁴

International support also helped to sustain the orthodoxy that emerged from

⁵² Kilaparti Ramakrishna, 'The Emergence of Environmental Law in the Developing Countries: A Case Study of India', Ecology Law Quarterly, Vol. 12, 1985, pp. 907-35, p. 918.

⁵³ Articles 48 A and 51 A(g) of the Constitution of India.

⁵⁴ Ramachandra Guha, The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya, (Delhi: Oxford University Press, 1989), p. 195.

Mrs Gandhi's views. These views reflected and were reinforced by Third World views on environment and development.⁵⁵ They also gained support from liberal elements in the North who accepted as legitimate the priority that developing countries accorded to development.⁵⁶

Finally, the wide publicity given to Mrs Gandhi's Stockholm speech reinforced the Indian government's espousal of the orthodoxy that emerged from it. Mrs Gandhi was the only head of state or government from outside the host country Sweden to attend the Stockholm Conference. She enjoyed considerable personal prestige at the time of the conference: the daughter of a famous statesman, she was one of the few women leaders of the time, and came fresh from victory in war, having presided over the creation of Bangladesh. Her views therefore received wide media coverage.

A number of examples of the maintenance of the orthodoxy established by Indira Gandhi may be cited. For instance, the 1980 Tiwari Committee report, which by virtue of the committee's consultation and inclusion of leading ecologists, environmentalists, development planners, and policy makers, represented a consensus among the major influences on national environmental policy, argued that

[W]hile for developed countries environmental problems are largely the by-products of affluence marked by resource wasteful life-styles, the stresses on India's environmental resources come mainly from the pressures for satisfying the basic human needs of a large and growing population.⁵⁷

Consequently,

it is obvious that together with the propagation of environmental

⁵⁵ See Chapter 1, pp. 2-3; see also, M.K. Tolba, ed., Evolving Environmental Perceptions: From Stockholm to Nairobi, (London: Butterworths, 1989), pp. 9, 84.

⁵⁶ See, e.g., Erik P. Eckholm, Losing Ground: Environmental Stress and World Food Prospects, (Oxford: Pergamon, 1978).

⁵⁷ Tiwari Committee Report, p. 7.

awareness must come the availability of alternate sources and means for the satisfaction of basic human needs. Such human needs can be satisfied only by rapid economic growth coupled with the diffusion of benefits of such growth among the poorer sections of the community.⁵⁸

The “poverty is the greatest polluter” theme was also much in evidence during the late 1980s, at international conferences held in the context of emerging global environmental issues.⁵⁹ Perhaps the best example of the continuing relevance of this orthodoxy, though, is provided by the official stance on global environmental problems:

The Indian approach to global environmental problems is generally in keeping with other developing countries and has the following basic elements:

- Our economic development cannot be hampered in the name of the global environment, which we have done nothing to damage and can do little to save. Our resources are required to meet our developmental needs such as education, nutrition, health services, drinking water, housing, sanitation, agriculture, industry, infrastructure, even all of which we find it difficult to provide having been behind in the race for development. Without this development, threats to the environment will in any case grow. In the short run, this developmental effort could even add to the discharges and emissions which cause global problems - but these are minuscule compared to the quantities which industrialized countries have already contributed. In any case, such emissions etc., can easily be compensated for a marginal reduction of the same in the industrialized world;

- For environmental protection and improvement, we will do our best with the resources available in the country. With new and additional funding support and transfer of environmentally sound technologies from the developed countries, we will be in a position to augment our capacity to deal with the environmental problems;⁶⁰

⁵⁸ Ibid., p. 25.

⁵⁹ ‘India for More Funds to Save Ecology’, Deccan Herald, 14 March, 1989; ‘Environment: India Calls for Global Vision’, Deccan Herald, 17 May, 1989.

⁶⁰ MOEF, National Conservation Strategy and Policy Statement on Environment and Development, (New Delhi: MOEF, June 1992), pp. 31-2.

2. Prioritisation of Development Over Environment

Successive Indian governments have been pre-occupied with the problem of poverty and the need for industrialisation and economic growth. This has laid the ground for a de facto prioritisation of development over the environment. This in turn helps explain certain features of Indian policy over global environmental issues which will be observed in subsequent chapters, particularly India's resentment of suggestions that it moderate the pace of its development to accommodate global environmental concerns, and its consistent demand, because most of its available domestic resources have been devoted to development, for greater international assistance to cope with environmental degradation.

The statistics reveal why successive Indian governments have been preoccupied with the problem of poverty and the need for industrialisation and economic growth. In 1992, 40 percent of the Indian population was still living below the poverty line. Over 250 million people were officially said to suffer from under-nutrition.⁶¹ The ecological costs of mass poverty continued to be substantial. In the area of energy utilisation, for instance, inadequate supply continued to combine with the inability of the poor to afford commercial sources of energy, to cause unsustainable demands to be made on the environment - roughly half of India's energy utilisation came from a variety of non-commercial sources such as firewood, cowdung, and agricultural wastes,⁶² firewood alone provided 50 percent of the cooking energy in cities and 70 percent in villages.⁶³ Resources needed to meet basic environmental requirements remained scarce - 80 percent of the Indian population remained without access to

⁶¹ Ibid., p. 2.

⁶² MOEF, Environment and Development, p. 43.

⁶³ Ibid., p. 19.

safe drinking water, and 70 percent of India's surface water was categorised as being seriously polluted.⁶⁴ Population growth, at the rate of almost 2 percent per annum, continued to complicate all these problems; and although a new sense of urgency and political determination to control population growth, hitherto missing for more than 15 years,⁶⁵ appeared to emerge in the government,⁶⁶ the strategic focus continued to be on poverty alleviation, illustrated by the government's argument that "[H]igh population growth is usually an indicator of poverty, and not the cause of it".⁶⁷

Turning to the Indian economy, 1990 figures show that more than 70 percent of the working population was involved in agriculture, yielding just about 30 percent of the Net Domestic Product.⁶⁸ With more arable land generally unavailable, agricultural productivity low, and the population growing, industrialisation and economic growth continued to be widely seen as essential for the absorption of surplus labour and the provision of useful employment. In addition, the expectation continued to be that the resources for tackling poverty and environmental degradation would largely be generated through economic growth. According to the Indian Finance Minister, "[E]ffective solutions to the problems of poverty and environmental degradation require additional financial resources, particularly in the public sector of the economy. Only a rapidly expanding economy can provide these additional

⁶⁴ Ibid., p. 41.

⁶⁵ Family planning programmes were set back by many years because of the widespread condemnation of abuses under Mrs Gandhi's Emergency regime in the mid-1970s.

⁶⁶ MOEF, National Strategy for Conservation, p. 2.

⁶⁷ MOEF, Environment and Development, p. 10.

⁶⁸ Government of India, India - Country Study on the Environment, (New Delhi: MOEF, October 1990), pp. 6-7.

resources".⁶⁹

The preoccupation of successive governments with poverty alleviation and economic development has laid the ground for the de facto prioritisation of development over the environment. The evidence of such prioritisation is abundant.⁷⁰ A few examples are cited here by way of illustration. For instance, unlike the attention paid to development planning, successive governments have devoted insufficient attention to environmental planning. Although the Tiwari Committee recommended in 1980 that a national environmental policy be drawn up,⁷¹ the National Conservation Strategy and Policy Statement on Environment and Development was only produced in 1992. This suggests a lack of long-term vision.

Indeed, one analyst argues that

[T]here does not seem to be any perspective for environment in the Five Year Plans. What exactly is the status at present, what are the short-term and long-term objectives and what is sought to be achieved in the next fifteen years (to which the Perspective Plan in India relates), and what approaches, strategies and programmes need to be adopted and implemented, keeping in view the proposed perspective, do not seem to have been spelt out.⁷²

The recurrence of ecological protest movements in different parts of the country, such as the Chipko, Appiko, Jharkand, and Narmada Bachao movements, also reveals the continuing failure of successive governments to adequately build concern for environmental protection into development schemes.

⁶⁹ Dr Manmohan Singh, Environment and the New Economic Policies, (New Delhi: Society for Promotion of Wastelands Development, 17 June, 1992), p. 2.

⁷⁰ See, for example, CSE, India's Environment - 1982 and India's Environment - 1984-85; Ramachandra Guha, 'Forestry in British and Post-British India: A Historical Analysis', Economic and Political Weekly, Vol. 18, No. 44, October 29, 1983, pp. 1882-96 and Vol. 18, Nos. 45 & 46, November 5-12, 1983, pp. 1940-7.

⁷¹ Tiwari Committee Report, p. 22.

⁷² K.D. Saksena, Environmental Planning Policies and Programmes in India, (Delhi: Shipra Publications, 1993), p. 5.

Evidence of the priorities of successive governments is also provided by the fact that some of the biggest polluters in Indian industry, including petrochemicals, refineries, coal mines, and thermal power plants, come from the public sector. Abraham and Rosencranz stress that “[T]he major polluters in India today are governmental plants and facilities rather than private individuals or corporations”.⁷³

The environment has also traditionally been underfunded in the budget in relation to the demands of the MOEF. Provisions made specifically for the environment in successive five year plans have been meagre,⁷⁴ growing from roughly 0.04 % of the total public sector outlay in the sixth plan (1980-85) to 0.4 % in the eighth plan (1992-97).

Finally, despite considerable environmental legislation over the years, successive governments have not matched this with adequate enforcement. By the MOEF’s own admission,

[T]he modalities of protection have been to enforce environmental regulations through criminal courts of law but the long delays in the courts and inertia of the prosecuting agencies have led to the polluters escaping the full penalties and to exposing the people and the environment to the adverse effects of pollution.⁷⁵

What explains the tendency of successive governments to accord a very high priority to development over the environment? While a number of arguments may be advanced, no single factor fully explains the attitude of successive governments. Two, though, are more comprehensive than the others. The first, generally voiced by

⁷³ Abraham and Rosencranz, ‘An Evaluation of Pollution Control’, p. 109.

⁷⁴ Saksena, Environmental Planning, p. 6; Geethakrishnan, ‘Sustainable Development’, p. 19.

⁷⁵ MOEF, Annual Report - 1989-90, (New Delhi: MOEF, 1990), p. 77. On the status of implementation of pollution control standards for different industries, see MOEF, Annual Report - 1989-90, p. 42, and MOEF, Annual Report 1992-93, pp. 53, 56.

many NGOs, invokes class based analyses of India's ruling elite, and draws sustenance from the fact that several serious protests against government policies have emerged from groups that have traditionally been marginal, politically and economically, as has been the case, for instance, with the Chipko and Jharkand movements.⁷⁶ Guha has been one of the main exponents of this argument. He highlights the consensus that was built up in the early years after independence, when the environment was not a significant national concern, around an 'industrialise or perish model'. The continued prioritisation of development over the environment in the following decades, even after the ecological costs started to mount, Guha argues, owed to "the coalescence of class interests with a powerful ideology of modernisation that has been internalised by our elites".⁷⁷ The ecological costs of development were mainly passed on to politically and economically marginal elements of society.

There is some truth in Guha's argument. Caution must be exercised, however, in absorbing its implications. The issue of prioritisation of development should not be seen purely in terms of rich and powerful developmental interests versus poor environmental interests. Indeed, the fact that developmental choices are not easy to make, and often find poor and marginal elements on both sides of the fence, is vividly illustrated by the ongoing dispute over the Narmada dam.⁷⁸

⁷⁶ Guha, The Unquiet Woods; Jayanta Bandyopadhyay and Vandana Shiva, 'Development, Poverty and the Growth of the Green Movement in India', The Ecologist, Vol. 19, No. 3, May/June, 1989, pp. 111-7; Madhav Gadgil, 'Conserving India's Biodiversity: The Societal Context', Evolutionary Trends in Plants, Vol. 5, No. 1, 1991, pp. 3-8; Smitu Kothari, 'Social Movements and the Redefinition of Democracy', pp. 159-60.

⁷⁷ Ramachandra Guha, 'Ecological Roots of Development Crisis', Economic and Political Weekly, Vol. 21, No. 15, 12 April, 1986, pp. 623-6, p. 625.

⁷⁸ See, for example, Uday Mahurkar, 'Battle Royal', India Today, 31 January, 1991, pp. 66-8; Omar Sattaur, 'Greens in Muddy Water Over Indian Dam', New Scientist, 5 October, 1991, pp. 16-7.

The second argument, implicit in the views of the mainstream political parties and development planners, justifies a high degree of prioritisation of development over the environment in the short term in order to generate the momentum for the alleviation of poverty as well as the creation of surplus resources that can be ploughed back into environmental protection in the long term. It emphasizes the scarcity of resources for environmental protection, and the need for these resources to come from the process of development.

Other arguments provide partial answers for the high degree of prioritisation of development over the environment. These include: the argument that environmental agencies have lacked the clout to impress their agendas on other departments of the government;⁷⁹ arguments that weaknesses in legislation, and judicial and enforcement difficulties, have hampered efforts to rein in the development process;⁸⁰ claims that successive governments have ignored the degradation caused by the small scale industrial sector, where, according to the present Indian Environment Minister, “you cannot expect large scale investments for installing pollution controlling devices”;⁸¹ arguments about the ignorance or cynicism of many in the government and the private sector with regard to the ecological costs of development; and allegations about the political influence of big polluters and corruption at all levels.

⁷⁹ CSE, India's Environment - 1984-85, p. 326.

⁸⁰ Abraham and Rosencranz, ‘An Evaluation of Pollution Control’; Ramakrishna, ‘The Emergence of Environmental Law’; G.S. Bajwa, ‘Environmental Management: Problems and Prospects’, in R.K. Saprú, ed., Environment Management in India, (New Delhi: Ashish Publishing House, 1987), Vol. 2, pp. 207-17; M.C. Mehta, ‘Environmental Cases: What the Judiciary Can Do’, The Hindu Survey of the Environment 1992, 1992, pp. 161-3.

⁸¹ Sailesh Kottary, ‘The Tuesday Interview/ Kamal Nath: “We Have to be Practical”’, The Economic Times, 28 July, 1992.

In fairness to past and present governments, it has to be said that there is a learning process involved, both for agencies like the MOEF to learn to insinuate themselves in the development planning process, as well as for development planners to learn the true costs of environmental degradation. Evidence of such learning is reflected by a gradual improvement in environmental impact assessment procedures over the years; a gradual increase in the environment budget; a substantial increase in MOEF personnel; the strengthening of environmental legislation, for instance with the Environment (Protection) Act of 1986 and the Public Liability Insurance Act of 1991; the review and amendment of environmental legislation as necessary, including the Wildlife (Protection) Act, 1972, amended in 1983, 1986 and 1991, the Water (Prevention and Control of Pollution) Act, 1974, amended in 1988, the Forest (Conservation) Act, 1980, amended in 1988, and the Air (Prevention and Control of Pollution) Act, 1981, amended in 1988; the establishment of a host of advisory and executive bodies, including Pollution Control Boards and the National Wastelands Development Board; and the institution of many programmes, including the Ganga Action Plan and the establishment of a network of protected areas. Also impressive is the government's recent argument that "we have to avoid proceeding along paths with environmental costs so high that these activities cannot be sustained. ... The development models followed so far need to be reviewed".⁸²

On balance, though, while governmental rhetoric accommodates environmental concerns, the scale still tips substantially towards a very much higher priority for development over the environment. The good intentions reserved for the future, as well as the true thrust of present government policy, are both revealed in this

⁸² MOEF, National Conservation Strategy, p. 6.

statement of the Indian Finance Minister:

future strategies of development should pay systematic attention to their environmental impact. Environmental impact analysis, environmental accounting and use of environmentally sound technologies should be built into all major development processes and projects. It has, however, to be recognised that this will lead to a rise in the capital cost per unit of output, at least in the short run. The economy's resource base has to be expanded so that these additional costs can be absorbed without hurting the development process.⁸³

(b) Foreign Policy Legacy

Foreign policy traditions have had a major influence on India's foreign environmental policy. This is partly because of the continuity provided by Congress Party rule for more than 40 years since Indian independence in 1947, with only two brief interludes of non-Congress rule - a continuity reinforced by the leadership of the Congress Party provided by three generations of the Nehru-Gandhi family. Foreign policy traditions have also been maintained because they are believed to have served the country well, and have enjoyed strong cross-party support. This is illustrated by the lack of change in foreign policy despite changes in government.⁸⁴ Finally, the MEA's lack of environmental expertise, and more generally, its deficiencies in terms of institutionalised forward thinking and policy planning, have made it particularly prone to fall back on tradition as a guide to policy. Indeed, many observers agree that "few of India's major actions in the field of foreign affairs since 1971 have

⁸³ Singh, Environment and the New Economic Policies, p. 3.

⁸⁴ Bimal Prasad, 'An Overview', in Bimal Prasad, ed., India's Foreign Policy - Studies in Continuity and Change, (Delhi: Vikas Publishing House Private Limited, 1979), pp. 481-520, p. 511.

resulted from long-term strategic planning”.⁸⁵

What, then, is the main legacy of Indian foreign policy for India’s foreign environmental policy? It can be argued that at least four relevant traditions have been established in Indian foreign policy: a concern for sovereignty; a concern for equity; solidarity with the Third World; and a high degree of self-esteem and concern for India’s international image. Each is elaborated below. Their impact on Indian policy on global environmental issues will become clear in subsequent chapters.

Sovereignty and equity concerns have always been central to Indian foreign policy. Without these features, India has traditionally argued, the international system would soon descend into anarchy, and weak states, in particular, would be unable to protect themselves. India’s own experience of colonization obviously provides it with a strong reason for making this argument.

A number of examples may be cited of the value India has attached to preserving its sovereignty. In the economic field, for instance, India has pursued a deliberate policy of diversification of sources of aid, trading partners, and partners for industrial collaboration.⁸⁶ Thus, Bradnock argues that “right up to the present India’s economic development strategy has been subordinated to the political goal of avoiding national dependence upon either foreign powers or multinational corporations”.⁸⁷

Sovereignty concerns are also reflected in India’s stance on the Non-Proliferation Treaty (NPT). It has consistently rejected the NPT despite the costs

⁸⁵ Robert Bradnock, *India’s Foreign Policy Since 1971*, (London: Royal Institute for International Affairs, Pinter Publishers, 1990), p. 18.

⁸⁶ *Ibid.*, pp. 40-1.

⁸⁷ *Ibid.*, p. 44.

incurred in terms of the denial of nuclear fuel and technology supplies for its much vaunted nuclear energy programme, as well as the frictions generated with other countries, notably the US, and to a lesser extent, the Soviet Union and Russia. Indeed, India dramatically illustrated its independence in the nuclear area by exploding a nuclear device in 1974, despite the knowledge that this action would invite the criticism of both superpowers.⁸⁸

India's sovereignty concerns also emerge from the fact that despite an extremely close bilateral relationship in the 1970s and 1980s with the Soviet Union, it "retained its independence of action in all the areas where its interests differed from those of the Soviet Union".⁸⁹ Thus, for instance, its resistance to Soviet encouragement to join an Asian security pact, and its dismissal of suggestions that it provide naval facilities for the Soviet fleet.

The emphasis on equity in international relations has also been a strong theme in Indian foreign policy. This is reflected, for instance, in its consistent support for the United Nations, an organisation grounded in international law, which recognises the sovereignty and equality of all states, and the one state-one vote principle. India was an early advocate of universal membership of the UN, and pressed for the inclusion, among others, of China, even after its border conflict with that country in 1962.⁹⁰

⁸⁸ Baldev Raj Nayar, 'A World Role: The Dialectics of Purpose and Power', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 117-46, p. 124; Stephen P. Cohen and Richard L. Park, India: Emergent Power?, (New York: Crane, Russak, 1978), pp. 43-6.

⁸⁹ Bradnock, India's Foreign Policy, p. 20.

⁹⁰ Gopal Krishna, 'India and the International Order - Retreat from Idealism', in Hedley Bull and Adam Watson, eds., The Expansion of International Society, (Oxford: Clarendon Press, 1984), pp. 269-87, pp. 279-80.

Solidarity with the Third World has been another constant feature of Indian foreign policy. The motivation for this has come from several sources. As the first major developing country to secure independence after the Second World War, India sought, and was able to exercise, a leadership role within the Third World. This involved the promotion of decolonisation in fora such as the UN and the Commonwealth, the pursuit of “political Asianism” at the Asian Relations Conference in New Delhi, and the promotion of Afro-Asian solidarity at Bandung in 1955.⁹¹ The prestige India gained from this has played an important part in the persistence of solidarity with the Third World in its foreign policy.

Solidarity with the Third World has also followed partly from the common historical experience India has shared with many developing countries, particularly from Asia and Africa: military subjugation, economic exploitation and racial discrimination at the hands of imperialist powers; economic underdevelopment; military weakness; and a sense of destiny and desire to play an important role in international affairs in the post-colonial era. One of the products of this solidarity was, of course, the non-aligned movement which India helped to found, and which aimed initially at tackling the sense of vulnerability of new states emerging into the Cold War era.

India has also shared the view generally held in the South,⁹² and voiced insistently during the North-South debates over the NIEO in the 1970s, that there are structural inequities in the world economy which discriminate against developing countries and need to be eliminated. It has played a leading role in articulating

⁹¹ Ibid., pp. 276-9.

⁹² The South Commission, The Challenge to the South, (Oxford: Oxford University Press, 1990).

mainstream Third World opinion on a number of issues in this regard, including demands for the removal of Northern non-tariff barriers to Third World exports, Northern acceptance of the principle of non-reciprocal treatment of developing countries in trade, increased aid flows, particularly from multilateral sources, to the South, and debt relief.⁹³ It has even, according to some analysts who cite, for instance, India's response to the OPEC oil shock, occasionally suppressed its own national interests for the sake of Southern unity.⁹⁴ India's continuing concern with structural inequities in the world economy, even after the decline of North-South dialogue, is reflected, for instance, in a major speech by Rajiv Gandhi at the Non-Aligned Summit in Belgrade in September 1989, where he said:

[D]ecisions regarding the world economy should not be taken unilaterally by a small group of countries, however rich or militarily powerful. We, the developing countries constitute much the larger segment of the world community. It is we who suffer most the deleterious consequences of the structural imbalances which afflict the world economy. We must be party, therefore, to decisions which affect the world economy.⁹⁵

Solidarity with the Third World has also undoubtedly been seen by Indian policy makers to be in India's self-interest in the long run. This is partly because, as seen above, India has shared many interests with the other developing countries. In addition, India has also gained in many ways from Third World support. Thus, for instance, in the economic sphere, Third World support has allowed India to play a prominent part in the world's multilateral economic forums, such as UNCTAD and

⁹³ Sumitra Chishti, 'India's Foreign Economic Policy', in Prasad, ed., India's Foreign Policy, pp. 35-56, pp. 35-6.

⁹⁴ Ibid., p. 52; K.B. Lall, 'India and the New International Economic Order', in Prasad, ed., India's Foreign Policy, pp. 57-83, p. 72.

⁹⁵ M.K. Dhar, 'PM Moots Fund for Protection of Environment', Hindustan Times, 6 September, 1989.

GATT, despite its very small contribution to world trade.⁹⁶ Or to take the example of India's policy for many years of supporting the Arabs and the PLO against Israel, this served to diminish Islamic support for rival Pakistan, besides securing the flow of cheap oil from the Gulf, and the provision of employment for many Indians in the Middle East.

A high degree of self-esteem is another characteristic feature of India's foreign policy. It was Nehru who said, "India is going to be and is bound to be a big country that counts in world affairs".⁹⁷ This view has subsequently been reasserted by many others. Thus, for instance, Atal Behari Vajpayee's claim, as Foreign Minister in the Janata government, of India's "rightful role in the affairs of the world and in the promotion of peace and understanding among nations, a role consistent with its history as well as the stability of its democratic structure".⁹⁸

Sentiments like those above also suggest to some that great power aspirations accompany self-esteem in India's foreign policy.⁹⁹ Indeed, India has shown a willingness on several occasions to exploit opportunities to emphasize its power. This has been particularly evident in the regional context - witness, for instance, the use of force to take Goa in 1961, the participation in the creation of Bangladesh in 1971, and more recently, the intervention in Sri Lanka in 1987 and the pressure put on Nepal in 1989. One analyst thus argues that "India has never concealed its determination to protect its national interests, and it has not hesitated to apply

⁹⁶ Bradnock, India's Foreign Policy, p. 58.

⁹⁷ Quoted in Bandyopadhyaya, India's Foreign Policy, pp. 30-1.

⁹⁸ Atal Behari Vajpayee, 'India's Foreign Policy Today', in Prasad, ed., India's Foreign Policy, pp. 1-10, p. 9.

⁹⁹ Cohen and Park, India: Emergent Power?; Nayar, 'A World Role', pp. 121-2; Hardgrave and Kochanek, India - Government and Politics, p. 395.

pressure on its neighbours to secure its policy objectives”.¹⁰⁰ Great power aspirations, however, appear to have generally been grounded in the realities of India’s situation.¹⁰¹ Many observers argue that pragmatism has been the hallmark of Indian foreign policy in the 1970s and 1980s.¹⁰² It is also important to recognise that self-esteem in India’s case has traditionally been related to a strong desire to be seen as a responsible and trustworthy member of the international community. As Nayar argues, through much of its diplomatic history, “India has been moderate rather than extremist, pragmatic rather than adventurist, deliberate rather than hasty, restrained rather than provocative, pacifist rather than warlike”.¹⁰³

The origins of India’s concern about its international image, and the desire to gain appreciation from others, appear to lie in the pre-independence freedom struggle. Important features of the independence movement included idealism, particularly the Gandhian insistence on non-violence and right means in politics, mobilization of favourable domestic and international public opinion, and frequent appeals to international morality in denunciations of imperialism.¹⁰⁴ Independent India’s desire to be seen as a responsible and trustworthy member of the international community was reflected in Nehru’s articulation of the concept of ‘Panchsheel’, or five principles, which is still held up as the basis of India’s foreign policy today: mutual respect for territorial integrity and sovereignty, mutual non-aggression, mutual non-

¹⁰⁰ Bradnock, India’s Foreign Policy, p. 17.

¹⁰¹ John W. Mellor and Philip Oldenburg, ‘India and the United States’, in Mellor, ed., India: A Rising Middle Power, pp. 1-13, pp. 12-3.

¹⁰² Krishna, ‘India and the International Order’, pp. 285-7; Baldev Raj Nayar, ‘Regional Power in a Multipolar World’, in Mellor, ed., India: A Rising Middle Power, pp. 147-79, p. 151.

¹⁰³ Nayar, ‘A World Role’, p. 125.

¹⁰⁴ Bandyopadhyaya, India’s Foreign Policy, pp. 68-9.

interference in internal affairs, equality and mutual benefit, and peaceful coexistence.

Thus, as seen in this chapter, a number of traditions and values have been established in Indian foreign policy. The impact of these on Indian policy on global environmental issues will become evident in the subsequent chapters.

3. THE CASE OF OZONE DEPLETION - INTRODUCTION¹

This chapter outlines the evolution of international concern over ozone depletion up to the signing of the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987. This period witnessed activity predominantly on the part of the Northern states. The developing countries, with a marginal share of world production of ozone depleting compounds, had little incentive and showed little inclination to play more than a minimal role in international negotiations. Significant North-South differences therefore did not emerge until after the Montreal Protocol had been signed.

I. OZONE DEPLETION AS A GLOBAL ENVIRONMENTAL ISSUE

The ozone layer absorbs potentially harmful ultraviolet radiation from the sun. The depletion of the ozone layer, caused by the globally widespread use and release into the atmosphere of ozone depleting compounds, allows increased levels of ultraviolet radiation to reach the earth, with adverse consequences for all states.² The effects can include suppression of the human immune system, eye damage, skin cancer, reduced biodiversity, and impaired plant growth.

All states thus have a stake in the resolution of the problem of ozone depletion. However, eliminating the production of ozone depleting compounds, most

¹ As per University regulations, Chapters 3 and 4 draw upon research conducted for my M.Phil dissertation at Oxford University, entitled The Politics of Ozone Depletion: With Special Reference to India, April, 1991.

² UNEP, Environmental Effects Panel Report, (Nairobi: UNEP, 1989), p ii.

prominently chlorofluorocarbons (CFCs),³ has not been easy, partly because these chemicals have important, cost-efficient uses. The non-toxic and extremely stable nature of CFCs, for instance, allows them to be used as coolants in refrigerators and air-conditioners, in fire extinguishing foam, as solvents, and for a variety of other purposes. In addition, as this chapter and the next show, a variety of issues ranging from scientific uncertainty to questions of competitive advantage and North-South differences hampered the resolution of the ozone depletion issue.

II. THE EVOLUTION OF INTERNATIONAL CONCERN OVER OZONE DEPLETION

Ozone depletion first made the headlines in 1970, because of fears about the destruction of ozone by chemicals released in the exhaust of supersonic transport aircraft.⁴ However, with the abandonment by the US, Britain and France of their plans for large fleets of such aircraft, primarily for economic reasons, the concern over ozone depletion also subsided. But not for long. In 1974, US-based scientists Rowland and Molina published an article in the journal Nature, which theorised that CFCs released into the atmosphere would ultimately deplete the ozone layer.⁵ Assuming CFCs were released at a rate of about 800,000 tons per year (the rate of production in 1972), they calculated that within 30 years there would be half a million

³ For convenience, this acronym is generally used to refer to all ozone depleting chemicals in this thesis.

⁴ John Gribbin, The Hole in the Sky - Man's Threat to the Ozone Layer, (London: Corgi Books, 1988), pp. 28-33.

⁵ Mario J. Molina and F.S. Rowland, 'Stratospheric Sink for Chlorofluoromethanes; Chlorine Atom-catalysed Destruction of Ozone', Nature, Vol. 249, 28 June, 1974, pp. 810-2.

tons of chlorine in the stratosphere, which would destroy between 20 and 40 percent of the ozone shield.

These dire predictions did not elicit a proportionate response from policy makers because there was no evidence of ozone depletion to back them. However, they stirred up enough controversy to cause the US National Academy of Sciences (NAS) to look into the matter. The NAS report, produced in September 1976, confirmed that CFCs posed a real threat to the integrity of the ozone layer.⁶ This, as will be seen shortly, prompted the US to curb CFC production. Eight years elapsed, though, before concrete evidence of ozone depletion speeded up international efforts to reduce CFC production.

The first conclusive evidence of ozone depletion was obtained by a British Antarctic Survey team. Through observations over three years, beginning in 1982, it confirmed a trend towards ozone depletion over Antarctica. It published its findings in Nature in May 1985.⁷ Its paper also suggested a correlation between decreasing ozone concentration and increasing CFC concentration over Antarctica. More conclusive proof implicating CFCs in ozone depletion came soon afterwards. In 1987, the US National Aeronautics and Space Administration (NASA) organised an international mission to investigate Antarctic ozone depletion - the Airborne Antarctic Ozone Experiment. On 30 September, the mission organisers announced their immediate findings. NASA's Dr Robert Watson declared that "there is no longer debate" about whether chlorine is in the "perturbed region" at "abundances sufficient

⁶ Gribbin, The Hole in the Sky, pp. 52-3.

⁷ J.C. Farman, B.G. Gardiner and J.D. Shanklin, 'Large Losses of Total Ozone in Antarctica Reveal Seasonal ClOx/NOx Interaction', Nature, Vol. 315, 16 May, 1985, pp. 207-10.

to destroy ozone”.⁸ Furthermore, the researchers believed that CFCs “are having a role in the destruction of ozone at all latitudes”.⁹

(a) CFC Policy in the United States and the European Community

The Rowland-Molina theory, when it first emerged, lacked evidence of ozone depletion to back it up. Meanwhile, the stakes were high for the CFC industry, particularly in the US and the European Community (EC) which accounted for about 85 percent of world production.¹⁰ Indeed, as late as 1988, after CFC controls had been introduced, in the US alone 700,000 CFC-related jobs were producing CFC-related goods and services worth \$28 billion a year.¹¹ The CFC industry therefore argued in favour of more research before curbs on CFC production were introduced.¹²

The industry’s arguments were accepted by the US administration until the publication of the NAS report, whose conclusions supported the position of environmentalists and others in favour of CFC controls. At the time, about 75 percent of the CFCs released into the atmosphere came from spray can propellants. These therefore immediately became targets of controls,¹³ the case against them strengthened by the existence of substitutes, and their luxury product (hence

⁸ Philip Shabecoff, ‘Antarctica Ozone Loss Is Worst Ever Recorded’, The New York Times, 1 October, 1987.

⁹ Ibid.

¹⁰ Benedick, Ozone Diplomacy, p. 26.

¹¹ L.E. Manzer, ‘The CFC-Ozone Issue: Progress on the Development of Alternatives to CFCs’, Science, Vol. 249, 6 July, 1990, pp. 31-5, p. 31.

¹² Benedick, Ozone Diplomacy, p. 12.

¹³ Gribbin, The Hole in the Sky, pp. 39-56.

unessential) nature. In 1978, the US set a timetable for completely phasing out CFCs in spray cans. This resulted in a significant reduction in global CFC production.

The EC, however, failed to match US actions. It tended to favour industry's position that scientific concern about ozone depletion did not amount to proof. In 1980, it called for a 30 percent reduction in CFC use in aerosol cans as compared to 1976 levels, a figure apparently chosen because it could be achieved without creating too much difficulty for industry.¹⁴ It also decided not to increase its production capacity of the two commonest CFCs, CFCs 11 and 12, though allowing production to rise within capacity limits.¹⁵ The world output of CFCs again began to rise in the early 1980s. The production of CFCs for uses besides spray cans, for example in refrigerators and air-conditioners, increased considerably. This situation was allowed to persist for some time, with the new, pro-business Reagan administration in the US joining the EC in showing reluctance to impose controls on the CFC industry.

(b) The Role of the Multinational Corporations

Multinational corporations, particularly the two giants who controlled close to half the world production of CFCs, Du Pont and Imperial Chemical Industries (ICI), appeared to play an important role in influencing the positions of their respective governments. Their attitude towards the theory of ozone depletion, and their ability to successfully lobby their governments to support their preferences with regard to CFC controls, played a large part in determining the outcome of the ozone

¹⁴ Nigel Haigh, EEC Environmental Policy and Britain, (Harlow: Longman, 1989, 2nd rev. edn), p. 268.

¹⁵ *Ibid.*, pp. 267-9.

negotiations.

US-based Du Pont, the largest producer of CFCs in the world, with about 25 percent of global production, had a dominant role in presenting industry's viewpoint to the US administration. Between 1974 and 1980, it spent about \$ 2.5 million a year on research into substitutes for CFCs.¹⁶ In June 1980, it issued this statement:

In 1974 when the theory of ozone depletion by chlorofluorocarbons (CFCs) was first published, the Du Pont Company initiated extensive research programs. First, research was necessary to resolve the uncertainties in the theory. Second, since the outcome of this research could not be predicted, product research was necessary to develop alternative materials which might be substituted for CFCs. In 1980, the science is still not resolved and it is prudent to continue both research programs.¹⁷

Within a year, however, Du Pont had all but abandoned these programs. This step was prompted by the election of the Reagan administration with its anti-regulatory and pro-business ideology. Indeed, Du Pont cites this as the main reason: "In the absence of regulations there was nothing to drive the search for alternatives, because there was no market demand. Given that nothing was drawing customers to buy them, research was scaled back".¹⁸ Through the early 1980s, US CFC manufacturers led by Du Pont argued through their lobbying organisation, the Alliance for Responsible CFC Policy, that the evidence of ozone depletion was incomplete and did not conclusively implicate CFCs. They stressed the importance of further research rather than precautionary steps to reduce CFC production.

In 1986, however, Du Pont, conducted a policy reappraisal. This followed the

¹⁶ Arjun Makhijani, Annie Makhijani and Amanda Bickel, Saving Our Skins: Technical Potential and Policies for the Elimination of Ozone-Depleting Chlorine Compounds, (Washington, D.C.: The Environmental Policy Institute and the Institute for Energy and Environmental Research, 1988), p. 127.

¹⁷ Quoted *ibid.*, p. 131.

¹⁸ Statement of the External Affairs Department of Du Pont, quoted *ibid.*, p. 131.

release of a NASA report on atmospheric ozone, various symposia organised by the Environmental Protection Agency (EPA) on the health effects of ozone depletion, and a joint EPA-UNEP conference in June 1986 on ozone depletion and climatic change which concluded that real threats were posed by increased use of CFCs. In September 1986, Du Pont issued the following statement favouring limitation of CFC emissions:

All the models now predict that high sustained CFC growth-rates (i.e. leading to emission-levels from 3 to 5 times the current levels) would result in significant ozone depletion. ... the wisdom of permitting continued growth must be weighed against the existing ability of science to specify a safe long-term growth rate. Resolution of this and other key scientific uncertainties in the ozone issue and the greenhouse effects could take decades; therefore, we conclude that it now would be prudent to limit world-wide emissions of CFCs while science continues to provide a better guidance to policy makers.¹⁹

Du Pont also disclosed that given regulatory and market assurances, some substitutes to major ozone-depleting compounds could be made available in five years or so.²⁰ This undermined the staunchly anti-regulatory position of other US CFC manufacturers,²¹ and encouraged the US government to call for relatively strong international controls on CFC production.

Within the EC, as well, the CFC producing multinationals exerted considerable influence over government policies.²² However, as compared to Du Pont, it took much longer for the major producer in the EC, UK based ICI, to recognise the need

¹⁹ Quoted in Peter Haas, Ozone Alone, No CFCs: Ecological Epistemic Communities and the Protection of Stratospheric Ozone, Amherst, 1990, p. 18. [Manuscript from author].

²⁰ Mark Crawford, 'United States Floats Proposal to Help Prevent Global Ozone Depletion', Science, Vol. 234, 21 November, 1986, pp. 927-9, p. 928.

²¹ Ibid.

²² On the influence of European multinationals on EC policy, see Benedick, Ozone Diplomacy, pp. 33-4.

to limit CFC production.²³ Indeed, pressure from ICI was partly responsible for Britain's opposition to significant reductions in CFCs right up to the Montreal Protocol in 1987.²⁴

The bargaining between states that followed Du Pont's policy shift in 1986 was strongly influenced by perceptions of relative competitive advantage. The intransigence of countries like Britain in the EC led US deputy assistant secretary of state, Richard Benedick, to criticize them for being "more interested in short-term profits than in the protection of the environment for future generations".²⁵ European firms responded by pointing out that US based Du Pont enjoyed a head-start over them in developing CFC substitutes, and alleging that the US wanted to ban CFCs only in order to open up vast markets for its firms to sell substitutes.²⁶ Referring to the economic and political considerations which dominated the 1987 Montreal Protocol negotiations, the Executive Director of UNEP, Mostafa Tolba, would remark:

The difficulties in negotiating the Montreal Protocol had nothing to do with whether the environment was damaged or not. It was all who was going to gain an edge over who; whether [because of the treaty] Du Pont would have an advantage over the European companies or not.²⁷

²³ Makhijani et al., Saving Our Skins, p. 128.

²⁴ Haigh, EEC Environmental Policy, p. 269.

²⁵ Misha Glenny, 'America Attacks Europe Over Stratospheric Ozone ...', New Scientist, Vol. 113, No. 1550, 5 March, 1987, p. 17; see also Richard Benedick, 'The Ozone Treaty: Acting Before the Disaster', The Washington Post, 4 January, 1988.

²⁶ Paul Lewis, 'Borderline Cooperation', The New York Times, 12 April, 1987.

²⁷ Quoted in Debora MacKenzie, 'Now It Makes Business Sense to Save the Ozone Layer', New Scientist, Vol. 120, No. 1636, 29 October, 1988, p. 25.

(c) UNEP and the Ozone Negotiations

UNEP played an important role in providing a forum for international negotiations over the ozone issue.²⁸ It also sponsored scientific assessments that helped resolve some of the scientific uncertainties over ozone depletion. In the mid-1970s, as a result of concerns expressed about threats to the ozone layer, UNEP had included the ozone issue in its 'Outer Limits Programme'.²⁹ In March 1977, experts from 32 countries met under the auspices of UNEP in Washington D.C., and adopted a World Plan of Action on the Ozone Layer.³⁰ This involved the establishment of an international Coordinating Committee on the Ozone Layer (CCOL), with representatives from governments, nongovernmental organisations, and intergovernmental organisations, to coordinate international research on ozone depletion.

In April 1980, following CCOL's assessment that the threat of ozone depletion was significant,³¹ UNEP's Governing Council recommended that the use of CFCs 11 and 12 be significantly reduced.³² At its next meeting in May 1981, it established an ad hoc working group of legal and technical experts to prepare a global framework convention for the protection of the ozone layer.³³

At its first two meetings, the working group recommended further research before a negotiating conference was called. At its third meeting, in April 1983,

²⁸ Benedick, 'The Ozone Treaty'.

²⁹ M.K. Tolba, Earth Matters, (Nairobi: UNEP, 1983), p. 16.

³⁰ UNEP, Action on Ozone, (Nairobi: UNEP, 1989), pp. 6-7.

³¹ *Ibid.*, p. 7.

³² Tolba, Earth Matters, p. 17.

³³ *Ibid.*, p. 17.

Norway, Finland and Sweden tabled a proposal for controlling all CFC uses. The US supported part of the Nordic proposal that dealt with CFCs used as aerosol propellants. Eventually, the Nordic states, Canada and Switzerland joined the US in supporting an international aerosol ban. This group, which became known as the Toronto group, thus supported the US position. It soon came to loggerheads with the EC. The EC, like the US, floated a proposal which mirrored what it already had in place: a production capacity limit for CFCs, and a 30 percent reduction in aerosol use.

Both groups refused to budge from their positions.³⁴ The US proposal promised immediate benefits by significantly reducing unessential CFC usage (aerosol propellants were taking up 30-35 percent of the world production of CFCs 11 and 12). The EC proposal was also defensible on the grounds that it looked at the entire spectrum of CFC uses, not just aerosols. Partly because of this deadlock, a protocol could not be agreed in time for the scheduled March 1985 Vienna Conference on the Protection of the Ozone Layer, which was to approve the framework convention prepared by the working group. The other major problem was the continuing scientific uncertainty. CCOL, for example, at a meeting in October 1984, called for more research into atmospheric chemistry, "since it could devise no policy on the basis of the conflicting information available to it".³⁵ Mostafa Tolba, Executive Director of UNEP, spoke of "frustration ... that our understanding of the problem has

³⁴ Richard Benedick, 'Protecting the Ozone Layer', Department of State Bulletin, Vol. 85, No. 2097, April, 1985, pp. 63-4, p. 63.

³⁵ Michael Allaby, 'Environment', Britannica Book of the Year, 1986, pp. 242-8, p. 242.

changed rapidly, even from one working group meeting to the next”.³⁶

Hamstrung by scientific uncertainty and conflicting governmental positions, the Vienna Convention embodied an unexceptionable though toothless agreement to cooperate in research on ozone depletion, development of substitute technology, and gathering of data on CFC production.³⁷ The Convention also called upon UNEP to convene a working group to continue work on a protocol “that addresses both short and long term strategies to control equitably global production, emissions and use of CFCs”,³⁸ and authorised the Executive Director of UNEP to “convene a Diplomatic Conference, if possible in 1987, for the purpose of adopting such a protocol”.³⁹

(d) The Post-Vienna Process

The signatories to the Vienna Convention agreed to an informal ‘cooling-off’ period after the conference, while research on ozone depletion continued. This research, as seen earlier, led Du Pont to alter its position in 1986 in favour of limitation of CFC emissions. Following Du Pont’s shift, the US government also shifted its position. Its new stance was elaborated at Geneva in December 1986.

Geneva saw the resumption of negotiations for the first time since the Vienna Conference. The increased fear of ozone depletion following the discovery of the

³⁶ Quoted in J.W. Kindt and S.P. Menefee, ‘The Vexing Problem of Ozone Depletion in International Environmental Law and Policy’, Texas International Law Journal, Vol. 24, 1989, pp. 261-93, p. 279.

³⁷ UNEP, Vienna Convention for the Protection of the Ozone Layer, (Nairobi: UNEP, 1985).

³⁸ *Ibid.*, p. 8.

³⁹ *Ibid.*

Antarctic ozone hole and various scientific studies, and a better understanding of rival negotiating positions gained through workshops (in Italy in May 1986, and the US in September 1986) and informal discussions, now led to an all-round shift in positions. The US called for a freeze on CFC production followed by a 50 percent reduction in five years and a 95 percent reduction in ten to fifteen years.⁴⁰ The EC proposed that production of CFCs 11 and 12 be frozen at 1986 levels and that the controls be reviewed periodically.⁴¹ The Nordic states endorsed the US approach in general, and suggested a first step phase-down of 25 percent rather than a freeze.⁴² The USSR, which for the first time in 1986 had, as per the Vienna Convention, released figures on CFC production, called for a global production limit for CFCs 11 and 12, allocated to nations on the basis of population, with less developed countries exempt from control. Japan favoured a production capacity cap.⁴³

The next round of negotiations, in February 1987, brought widening agreement on many aspects of a protocol, including a near term freeze and longer term reductions. In March, the EC announced its support for a freeze on production of CFCs 11 and 12 at 1986 levels, a 20 percent reduction within five to seven years, and a four yearly scientific review.⁴⁴ In April, a meeting organised by UNEP of climate modellers from different countries in Würzburg, West Germany, produced a consensus that a protocol would be ineffective unless very strong regulations covering

⁴⁰ Kathy Johnston, 'Europe Agrees to Act for Protection of the Ozone Layer', *Nature*, Vol. 326, 26 March, 1987, p. 321.

⁴¹ John D. Negroponte, 'Protecting the Ozone Layer', *Department of State Bulletin*, Vol. 87, No. 2123, June, 1987, Washington, pp. 58-60, p. 59.

⁴² *Ibid.*, p. 59.

⁴³ *Ibid.*, p. 59.

⁴⁴ Johnston, 'Europe Agrees to Act', p. 321.

a full range of ozone depleting compounds were adopted.⁴⁵

The stage was now set for bargaining to determine the actual percentages and deadlines for CFC cuts. From this point until the Montreal Protocol was signed, there were no major scientific revelations to clarify uncertainties surrounding the causes of ozone depletion. The immediate findings of the Airborne Antarctic Ozone Experiment were announced days after the Montreal Conference had concluded. This was unfortunate because the experiment confirmed the role of CFCs in ozone depletion, and if completed earlier, might have persuaded the conference to aim at the complete elimination of CFCs. However, the conference was not postponed lest its delicate momentum be upset.⁴⁶ Instead, provision was made in the protocol for adjustment of targets as more information became available.

The build-up to Montreal was not without hiccups. In the US, an inter-agency fight developed in the administration over whether it should back the 95 percent reduction in CFC use proposed as far back as December 1986, or a 50 percent reduction specified by the draft protocol under consideration at this time (itself a compromise between US and EC proposals), or a freeze in production.⁴⁷ This last was pushed by Department of Interior Secretary Donald Hodel, who even suggested that Americans use sunscreens and sunglasses rather than force industry to abandon CFCs. The White House rejected Hodel's extreme stance, and sided with the EPA and the Department of State.⁴⁸

Meanwhile, bills were introduced in the US Congress that bound the US

⁴⁵ UNEP, Action on Ozone, p. 9.

⁴⁶ Kathy Johnston, 'First Steps in Ozone Protection Agreed', Nature, Vol. 329, 17 September, 1987, p. 187.

⁴⁷ Haas, Ozone Alone, No CFCs, p. 35.

⁴⁸ Benedick, Ozone Diplomacy, pp. 58-67.

negotiating team to settle for not less than a 50 percent CFC cut, with threats of trade restrictions against countries that did not join the US. This strengthened the hands of the US negotiators, and increased the pressure on the EC.⁴⁹ Most EC states, led by Germany, also by this stage favoured a 50 percent cut. However, they were held back by Britain's reluctance to go beyond the 20 percent cuts already agreed.⁵⁰ By August 1987, though, Britain had agreed to support a second round of cuts of a further 30 percent. This change of heart has been attributed partly to the efforts of William Waldegrave, the Junior Environment Minister, who was personally concerned about the threat to the ozone layer.⁵¹ ICI also shifted its position, and expressed a willingness to accept cuts provided the timetable was not too tight.⁵² The UK government was also under pressure from environmental groups like Greenpeace and Friends of the Earth, and the poor press it was receiving for its environmental policies. Finally, faced with pressure from the US, Canada and the Nordic states for a 95 percent reduction in CFCs, Britain was forced to join the rest of the EC in agreeing to a final compromise of 50 percent.⁵³

(e) The Montreal Protocol

The Montreal Protocol on Substances that Deplete the Ozone Layer was ready

⁴⁹ Ibid., p. 29.

⁵⁰ On conflicts within the EC, see *ibid.*, pp. 35-9; see also James H. Maxwell and Sanford L. Weiner, 'Green Consciousness or Dollar Diplomacy? The British Response to the Threat of Ozone Depletion', International Environmental Affairs, Vol. 5, No. 1, Winter 1993, pp. 19-41.

⁵¹ Gribbin, The Hole in the Sky, p. 138.

⁵² Kiki Warr, 'Ozone: the Burden of Proof', New Scientist, Vol. 128, No. 1740, 27 October, 1990, pp. 36-40, p. 39.

⁵³ Kathy Johnston, 'First Steps in Ozone', p. 187.

for signature on 16 September, 1987.⁵⁴ The majority of developed countries among the signatories at Montreal (16 out of 24) reflected the dominance of the North in the negotiation process till this stage. Indeed, with around 85 percent of the world output of CFCs, it is understandable that it was the North that dominated the preparation of the protocol. With the Soviet Union accounting for a further 9-10 percent, this left the developing world with only about 5 percent of world CFC production.⁵⁵ With a marginal share of world production, the developing world had thus far had little incentive and shown little inclination to play more than a minimal role in negotiations. The Montreal Protocol consequently reflected primarily the interests of the North.

The protocol essentially called for the freezing of CFC production at 1986 levels, a 20 percent cut by 1995, and a 50 percent cut by 2000.⁵⁶ It also provided for extensive controls on trade with nonparties, justified by the developed countries as being necessary “to protect industries in countries party to the protocol from being put at a competitive disadvantage vis-a-vis industries of nonparties, create an incentive for broad participation, and discourage the movement of production facilities to nonparties”.⁵⁷ It envisioned a ban on the import from and export to nonparties of CFCs; a ban on the import of products containing CFCs from nonparties; restrictions on the import of products produced with CFCs from nonparties; discouragement of the export to nonparties of technology for producing and utilizing CFCs; and termination of assistance for the export to nonparties of products, equipment or

⁵⁴ UNEP, Montreal Protocol On Substances That Deplete The Ozone Layer, (Nairobi: UNEP, 1987).

⁵⁵ EPA estimates, cited in Benedick, Ozone Diplomacy, p. 26.

⁵⁶ Montreal Protocol, Article 2.

⁵⁷ Negroponte, ‘Protecting the Ozone Layer’, p. 59.

technology that would facilitate the production of CFCs.⁵⁸

The Montreal Protocol was thus a step towards solving the ozone depletion problem, and fulfilled important specifications of the developed countries:⁵⁹ it provided certainty for industrial planning, thus minimizing the costs of adjustment; it provided adequate time for shifting away from CFCs to avoid social and economic disruption, while giving a strong incentive for the rapid development of safer substitutes and recycling techniques; it took into consideration scientific uncertainties and provided for periodic reassessment of goals and their timing; and it created incentives to participate in the protocol by regulating relevant trade between parties and nonparties.

Although most of their attention was spent in resolving mutual differences, the developed countries also recognised the importance of bringing on board the developing countries. The developing countries were beginning to make increasing use of CFCs for various domestic purposes; they also generally lacked the technological resources to make a swift transition to substitutes. The Northern states therefore decided to make special provisions in the Montreal Protocol for the developing countries, to enable them to meet legitimate needs during a transition period while substitutes were being developed, but at the same time diminish incentives for them to become major CFC producers and consumers.⁶⁰

Following consultations at Montreal with developing countries including Egypt, Argentina, Brazil, Kenya, Mexico and Venezuela, a package was devised for the developing countries. Under Article 5.1 of the protocol, developing countries

⁵⁸ Montreal Protocol, Article 4.

⁵⁹ Negroponte, 'Protecting the Ozone Layer', p. 59.

⁶⁰ Benedick, Ozone Diplomacy, p. 93.

(defined as parties not exceeding an annual calculated level of CFC consumption of 0.3 kilograms per capita) were allowed to delay compliance with the control measures in the protocol by ten years. Such a delay would not substantially increase the level of ozone depletion, partly because the developing countries' use of CFCs was very low, and partly because a ten year delay would make little difference given the background of the long atmospheric lifetimes of millions of tons of CFCs already in the atmosphere. The developed countries meanwhile undertook to "facilitate access to environmentally safe alternative substances and technology" for developing countries.⁶¹ They also undertook to facilitate assistance for developing countries to use alternative technology and substitute products.⁶² Under Article 2, the developed countries permitted themselves a ten to fifteen percent excess production facility on their CFC production quotas, the purpose of which was "industrial rationalization between Parties" and "to satisfy the basic domestic needs" of the developing countries. With the interests of developing countries thus apparently accommodated, the developed countries had reason to feel satisfied with the outcome at Montreal. The protocol was widely believed in the North to be, as the Deputy Executive Director of UNEP later put it, "a pragmatic document that balances environmental, political and economic interests".⁶³

Nevertheless, certain articles in the Montreal Protocol could potentially be seen to be controversial by the South. Under Article 2, for instance, developed

⁶¹ Montreal Protocol, Article 5.2.

⁶² Article 5.3.

⁶³ William H. Mansfield III, 'Strategies to Cope with Climate Change', in WMO, Conference Proceedings - World Conference on the Changing Atmosphere - Implications for Global Security, Toronto, 27-30 June, 1988, WMO/OMM - No. 710, 1988, p. 271.

countries could exceed their CFC production quotas in order to meet the needs of developing countries. The South could conceivably see this as a device to ensure that the developing countries did not develop their own technology to produce CFCs, but instead became dependent on the industrialised states for their requirements of CFCs, and subsequently, CFC substitutes.

Article 2(9)(c) provided that parties could make adjustments in the phase-out schedules of CFCs, so long as a two-thirds majority of parties present and voting was available, representing “at least fifty per cent of the total consumption of the controlled substances of the Parties”. This ensured that decisions affecting the major CFC consumers, i.e. the developed countries, whose consumption far exceeded 50 percent, could not be taken without their consent.⁶⁴ However, the South could conceivably see this as being inequitable, because it effectively delivered a veto to the developed countries over issues that affected the developing countries too.

Article 4.2, which provided for trade restrictions on nonparties, banned the export of CFCs to nonparties by developing countries, without placing similar restrictions on developed countries. The purpose of this article was to discourage developing countries from increasing their CFC production for purposes of supplying non-parties. The industrialised countries, though, because they were committed to reducing their CFC production in the near future, felt justified in utilising the available export opportunities. Nonetheless, the article was clearly discriminatory, and could potentially be seen to be objectionable by the developing countries.

Articles 5.2, 5.3, 9.1 and 10, dealing with technical assistance to developing countries, used mild language referring to Northern undertakings “to facilitate” and

⁶⁴ Benedick, Ozone Diplomacy, p. 88.

“promote” technology transfer and aid to developing countries, and fell far short of firm guarantees. In the absence of significant technology transfer or aid, developing countries would have to assume the full costs of making the transition from CFCs to substitutes. The developing countries could conceivably see this as being unfair, because the major agents of ozone depletion, i.e. the developed countries, would not be paying costs proportionate to their responsibility for damaging the ozone layer.

Article 19 clearly discriminated between developed and developing countries, by allowing the former to withdraw from the protocol but not the latter - apparently so that developing countries would not be able to exploit concessions under the ten year delay allowed them, only to pull out of the protocol at a later stage without fulfilling their commitments. This could conceivably be seen by the developing countries to be unjustified and illegitimate, because it undermined their sovereign rights, presumed wrong intentions on their part, and was based on the logic that concessions under the protocol to developing countries were in the nature of a gift from the North rather than, as the developing countries might see it, in recognition of their minimal contribution to ozone depletion as compared to the North’s primary responsibility.

Thus, several articles in the Montreal Protocol could potentially be seen to be objectionable by the South. In fact, as the next chapter shows, these and other articles were challenged by the developing countries. The post-Montreal process would reveal considerable dissatisfaction with the protocol in the developing world. The Malaysian negotiator at Montreal, for instance, would claim that the developing countries “had been had” at Montreal because they “were unaware of the full

socioeconomic implications of the protocol”.⁶⁵ The majority of developing states, including prominent countries like India, China and Brazil, would stay out of the protocol for a long period.

Consequently, a central concern of the North in the post-Montreal process was to accommodate the concerns of the developing countries.⁶⁶ Political accommodation was crucial for several reasons: without it, the developing countries would continue to increase their production and use of CFCs, thus increasing their contribution to ozone depletion and negating the effects of cuts in the developed world; in addition, the cooperation of the developing countries was of symbolic importance, to demonstrate the international community’s capacity to show solidarity in the face of a common global threat; finally, the ozone agreements offered a useful precedent for tackling other global environmental threats like global warming, and consequently, it was important that they enjoy universal acceptance.

⁶⁵ Quoted in Benedick, Ozone Diplomacy, p. 100.

⁶⁶ *Ibid.*, pp. 100-1.

4. THE EVOLUTION OF INDIA'S STRATEGY IN THE OZONE NEGOTIATIONS

This chapter analyses the evolution of India's policy and negotiating strategy in the ozone issue. It also examines the major concerns of the South in the ozone negotiations, and the main reasons for the emergence of North-South differences in the post-Montreal period. India, as will become clear in the course of this chapter, makes for a very useful case study for two important reasons. First, it played a very important role in articulating Southern concerns, and was an influential member of the Southern coalition. Second, it was a major focus of Northern attention because of its refusal to join the Montreal Protocol. This worried the North, partly because of India's influence within the South, and partly because India was one of the few developing countries with an indigenous capability to produce CFCs. So long as it stayed out of the Montreal Protocol, India's CFC production threatened to undo the effects of Northern CFC cuts and to damage the ozone layer.

I. NON-PARTICIPATION IN THE MONTREAL PROTOCOL PROCESS

India did not participate in the 1985 Vienna Conference. There were many uncertainties surrounding the ozone issue, and inasmuch as the major producers of CFCs were all in the North, resolving this issue appeared mainly a task for the developed states.¹ As a very small producer of CFCs, with less than half a percent of world production, India did not feel its interests would be significantly affected by decisions taken at Vienna. Constraints on foreign exchange availability also

¹ Communication from Avani Vaish, Director, MOEF, New Delhi, 23/3/91.

reinforced its decision not send a delegation.

In the post-Vienna period, Indian policy makers continued to believe that ozone depletion was mainly a concern for the developed countries. They saw little change in the situation - the scientific uncertainties about ozone depletion remained, there was no proof of any threat to India,² and India's CFC production was still marginal to world production. India did not participate in the preparatory meetings for the Montreal Conference. It sent an observer, without any negotiating powers, to represent it at Montreal. Consequently, the comprehensive measures taken at Montreal, especially the restrictions on trade with nonparties, caught the Indian government off-guard. For this lapse, it received considerable criticism from the domestic press. For example, a leading national newspaper, The Hindu, criticised the government's "inaction at Montreal" and called it a "poor commentary on the Government's appreciation of a grave environmental issue".³

The government's reaction was to claim it was "studying the issue". In fact, more than a year elapsed before it emerged with a definite policy. Two major factors help explain its prolonged deliberation. The first relates to the cautious stance of Indian scientists. They tended to favour more research and data collection. The National Physical Laboratory (NPL), for instance, declared after a 1988 expedition to Antarctica that

[T]he whole picture of ozone which emerges ... is not very clear and has many missing links one requires large amount of data both for

² Potential threats to human health, particularly skin cancer, tended to be dismissed as "the white man's problem" - because coloured populations are not significantly threatened by skin cancers caused by increased ultraviolet radiation. [Personal observations of Dr M.S. Swaminathan, former President, IUCN, Madras, 14/8/90].

³ 'Looming Menace to the Ozone Layer', The Hindu, 31 December, 1987.

ozone as well as other related geophysical parameters. ... It may then be possible with proper inputs to foresee through theoretical predictions, the extent of ozone destruction and necessary corrective steps that can be taken.⁴

The cautious scientific advice that was being given to Indian policy makers is clearly illustrated by the views expressed at a conference in February 1989 by Dr A.P. Mitra, Director General of the Council of Scientific and Industrial Research (CSIR) and chief scientific adviser on the ozone issue:

In the matter of CFC production, it has to be remembered that current per capita production is only 0.003 kg and is well below the constraint of 0.3 kg/capita. Control in India will thus have only moral and promotional value. ... the observational data are too few for India to adopt specific options. We need to emphasise that much of the Indian subcontinent has been existing for a long time with low ozone content; that although the UV-B dosages vary by an appreciable amount across its appreciable latitude range, there is no evidence of major geographical change in skin melanoma occurrence; and that atmospheric chemistry-monsoon interactions are still only very vaguely understood.⁵

Indian scientists were thus reluctant to recommend precautionary measures to combat ozone depletion until sufficient proof was available of a real threat to India. However, a slightly different perspective, offered by a former senior consultant to the MOEF, Dr K. Chatterjee, is that the lack of data was merely a convenient excuse for senior scientists.⁶ On this view, there were several scientists who were concerned about the effects of ozone depletion, given the already low ozone levels over India and the adverse health and environmental effects that could result from added

⁴ 'Ozone Layer Study Plan of NPL', World Science News, Issue No. 27, 4 July, 1990, pp. 11-3, pp. 12-3.

⁵ A.P. Mitra, 'Status and Policy Implications of Global Change: the Indian Scene', in S. Gupta and R.K. Pachauri, eds., Proceedings of the International Conference on Global Warming and Climate Change - Perspectives from Developing Countries, (New Delhi: TERI, 1989), pp. 133-6, p. 135.

⁶ Chatterjee interview.

depletion. But their concerns were played down by other more senior scientists, who were reluctant to create a public scare and were unwilling to take responsibility for the diversion of scarce resources towards tackling ozone depletion. Such analysis, although debatable, would appear to fit in with the typical picture of limited autonomy of Indian scientists, and their tendency to give cautious, politically safe advice to the government.⁷ In any case, it underlines the point that scientific diffidence allowed the attention of Indian policy makers to focus, as will be seen, on the economic and political dimensions of the ozone issue.

The second factor that helps explain the Indian government's prolonged deliberation over ozone policy relates to the results of its consultations with industry representatives. These revealed that India had significant domestic economic interests in CFC production and use. India's CFC production was about 7,000 tons in 1989, with an installed capacity of 15,000 tons.⁸ Production was being increased to cope with domestic demand, and to take advantage of export opportunities. Indeed, in 1988, the government permitted the expansion of facilities for CFC production.⁹

Around 80 percent of India's CFC production was being used for refrigeration and air-conditioning,¹⁰ with the rest mainly used in aerosols, foams and fire-fighting. The refrigeration industry was expanding, and sales were increasing with growing middle-class prosperity. India had also begun to export refrigerators to the USSR and the Middle East.¹¹ Refrigeration uses of CFCs included essential purposes like

⁷ Chapter 2, p. 36.

⁸ 'India Wants \$ 2 b to Sign Ozone Pact', The Times of India, 28 June, 1989.

⁹ 'The Depleting Ozone Layer', The Hindu, 4 March, 1989.

¹⁰ 'Overconcern for Environment', The Economic Times, 19 October, 1989.

¹¹ A. Rosencranz and R. Milligan, 'CFC Abatement: The Needs of Developing Countries', Ambio, Vol. 19, No. 6-7, October, 1990, pp. 312-6, p. 313.

food-processing and preservation of food, vaccines and pharmaceuticals. Essential strategic uses also existed in the areas of defence, atomic energy and space research. On the export side, of the four major CFC users from the developing world - India, China, Brazil and South Korea - apparently only India had an exportable surplus.¹² Countries like Korea had already evinced interest in importing CFCs from India. Thus, the existence of significant domestic economic interests meant that India had to carefully assess the impact of the Montreal Protocol on domestic CFC producers, and how domestic users and consumers would be affected by the availability and price of substitutes.

II. INDICATIONS OF EMERGING POLICY

The first public indications of India's policy orientation in the ozone issue came at an international conference on the ozone layer in London in March 1989. The conference was hosted by Britain, in association with UNEP. Its objectives were to extend understanding of ozone depletion; to increase international awareness of the work done by industry to find substitutes for CFCs; and to encourage international participation in the Montreal Protocol. Nonparties, including the two developing world giants, India and China, were therefore under pressure to accede to the Montreal Protocol. This pressure increased when the EC agreed just before the conference to phase out the use of CFCs by the year 2000 and pressed for a

¹² 'Pragmatism Makes India Spurn Ozone Treaty', The Times of India, 9 March, 1989.

worldwide agreement to outlaw the gases.¹³

The EC's step was a logical sequel to developments in the scientific understanding of ozone depletion. The results of the scientific assessment of data collected during the 1987 NASA mission to investigate the Antarctic ozone hole had been released in 1988. The executive summary, issued on 15 March, 1988, had concluded that unless a reduction of greater than 85 percent in CFC emission rates took place, the Antarctic ozone hole would remain forever.¹⁴ Following this revelation, on 24 March, 1988, Du Pont had announced that it would quit the CFC business entirely, and called for new worldwide controls on CFCs.¹⁵ The EC now assumed leadership over international ozone policy, and by the time of the March 1989 conference in London, was calling for an end to CFC production.¹⁶ Following the EC's lead, the US also announced that it would seek to ban all CFC production by the year 2000.¹⁷

India reacted strongly to efforts at London to persuade it to accede to the Montreal Protocol. India's Environment Minister, Z.A. Ansari, rejected the protocol in its existing shape.¹⁸ The Indian delegation gave several reasons for not joining the protocol.¹⁹ It argued that ozone depletion had been caused by the North's

¹³ David Dickson and Eliot Marshall, 'Europe Recognizes the Ozone Threat', Science, Vol. 243, 10 March, 1989, p. 1279.

¹⁴ Robert Watson, 'Atmospheric Ozone', in WMO, World Conference on the Changing Atmosphere, p. 89.

¹⁵ William Glaberson, 'Behind Du Pont's Shift on Loss of Ozone Layer', The New York Times, 26 March, 1988.

¹⁶ On the change in EC policy from 1987, see Benedick, Ozone Diplomacy, pp. 113-5.

¹⁷ Dickson and Marshall, Europe Recognizes the Ozone Threat, p. 1279.

¹⁸ 'Saving a Zone Primed for Destruction', The Hindu, 7 March, 1989.

¹⁹ 'Ozone Conference: India, China for Global Fund', Indian Express, 8 March, 1989.

profligate use of CFCs over many decades, and therefore the responsibility for remedying the situation was also the North's. Furthermore, the North had a moral responsibility to assist the developing countries by transferring the technology being developed by Northern chemical firms for CFC substitutes. Finally, given the grossly unequal production and consumption of CFCs of developed and developing countries, any protocol that sought to place similar restrictions on the use of CFCs on all countries was iniquitous and therefore unacceptable.

Ansari called the provisions for technical assistance to developing countries in the Montreal Protocol "delightfully vague".²⁰ He rejected the notion that developing countries would have to deal directly with Northern multinationals on purely commercial terms in order to obtain CFC substitutes.²¹ Instead, he advocated a global fund to finance technology transfer, arguing that "[L]est someone in this conference think of this as charity, I would like to remind them of the excellent principle of 'polluter pays' adopted in the developed world".²²

Indian statements thus suggested a sense amongst Indian policy makers that the Montreal Protocol was yet another example of Northern efforts to dominate the South. The protocol was perceived to lay down rules that increased Southern dependence on the North and helped the business and profits of Northern corporations. Instead of penalising the polluters, it safeguarded their interests.²³

Indian concerns about the benefits to Northern corporations were not altogether misplaced. As seen in the previous chapter, these companies had exercised

²⁰ 'Switch to Ozone-Safe Chemicals Called', Financial Express, 9 March, 1989.

²¹ Ibid.

²² 'Ozone Conference: India, China for Global Fund'.

²³ Interview with V.P. Jauhari, Deputy Secretary, MOEF, New Delhi, 10/9/90.

considerable influence over the outcome of the ozone negotiations. In addition, following the adoption of the Montreal Protocol, while the companies producing substitutes were going to profit from their sales, the CFC manufacturers (often the same companies) were also set to make windfall profits. For instance, in the US, government regulations were expected to result in “sizeable windfalls” for CFC producers because controls on production would limit the supply to users, resulting in a CFC scarcity which would drive prices up - indeed, “[T]he existence of these windfalls could create an economic incentive for producers to delay the introduction of chemical substitutes”.²⁴

India found support for its position from other developing countries, in particular China.²⁵ Indeed, in some respects China went further than India in calling for free of charge transfer of technology from the North to the South.²⁶ The strong feelings expressed by India and China had quite an impact, and evoked much sympathy, not just from other developing countries, but also from public figures like Prince Charles and the Commonwealth Secretary-General, Sridath Ramphal.²⁷ Ramphal declared that the main reason for the non-participation of many developing countries in the Montreal Protocol was that they faced “more immediate preoccupations: hunger, acute poverty, debt” than the ozone layer.²⁸

The signs of emerging solidarity amongst developing countries in opposition to the Montreal Protocol enhanced Northern concern about developing world cooperation in resolving the ozone issue. This stimulated Northern efforts to

²⁴ Federal Register, Vol. 53, No. 156, 12 August, 1988, p. 30,604.

²⁵ Benedick, Ozone Diplomacy, p. 124.

²⁶ ‘Switch to Ozone-Safe Chemicals Called’, Financial Express, 9 March, 1989.

²⁷ *Ibid.*; ‘Fund to Protect Ozone Layer Mooted’, Hindustan Times, 8 March, 1989.

²⁸ *Ibid.*

accommodate Southern concerns at the first meeting of the parties to the Montreal Protocol in Helsinki, from 2 to 5 May, 1989.

III. THE HELSINKI MEETING

The two major concerns of the North at Helsinki were to initiate moves to step up the reduction in use and production of CFCs, and to accommodate the concerns of developing countries and obtain their full cooperation in the Montreal Protocol process. Prior to the Montreal Conference, as seen earlier, the precise cause of Antarctic ozone depletion had not been established. Soon after, though, the role of CFCs as a primary factor in causing ozone depletion was established. In 1988, an international programme was undertaken to examine the Arctic ozone layer. Although no ozone hole comparable to that over Antarctica was found, scientists noted significant perturbations in the Arctic ozone layer and concluded that there was potential for ozone loss in future years in the region, a distressing conclusion for temperate zone countries in the Northern hemisphere, many of them members of the North. These observations were now placed before the Helsinki meeting by NASA's Dr Robert Watson,²⁹ and played a role in moving a number of delegations towards acceptance of a faster CFC reduction schedule,³⁰ with the Executive Director of UNEP urging a total elimination of CFCs by the end of the century.³¹

The Helsinki meeting also discussed Southern concerns, including the need for

²⁹ UNEP, Report of the Parties to the Montreal Protocol on the Work of Their First Meeting, UNEP/OzL.Pro.1/5, 6 May, 1989, pp. 5-6.

³⁰ Ibid., p. 7.

³¹ Ibid., p. 1.

mechanisms to facilitate the transfer of technology from developed to developing countries.³² The parties agreed under the Helsinki Declaration on the Protection of the Ozone Layer

to facilitate the access of developing countries to relevant scientific information, research results and training and to seek to develop appropriate funding mechanisms to facilitate the transfer of technology and replacement of equipment at minimum cost to developing countries.³³

The Helsinki meeting established an open-ended working group to devise amendments to the Montreal Protocol needed to take account of the views of states with regard, among other things, to a quicker phase out of CFCs, and the establishment of mechanisms to aid technology transfer to developing countries.³⁴

No delegation was sent from India to attend the Helsinki meeting, and it was left to the Indian ambassador in Finland to attend the meeting as an observer. The failure of the Indian government to send a properly briefed team of negotiators to Helsinki to seek changes in the Montreal Protocol indicates its continuing indecisiveness with regard to policy on the ozone issue - this despite its criticism of the protocol at the London conference in March 1989.

Indian policy makers appear at this stage to have been struggling with three important considerations that underlined the need for caution before any decision to actively oppose the protocol was taken. First, with the reduction of scientific uncertainties, ozone depletion was being revealed as a genuinely global problem which ultimately had to be solved through global cooperation. Environment Minister Ansari thus argued soon after the London conference, “[I]n purely practical terms,

³² Ibid., p. 20.

³³ Ibid., Appendix I.

³⁴ Ibid., p. 15.

it is not a question of who is causing the damage but how do we stop this damage to the ozone layer? ... We continue to be an environmentally conscious country - for when Doomsday comes, we are not going to be spared".³⁵ In other words, India could not ignore or isolate itself from international action to protect the ozone layer.

Second, policy makers were concerned about the impact of challenging the Montreal Protocol on India's image abroad. After all, India had a long tradition in foreign policy of supporting goals identical to the broad intention of the protocol, namely to remedy a global problem through global cooperation and with the UN's involvement. Indeed, the Indian government never rejected the Montreal Protocol in toto, although it stressed the need for changes in it to accommodate the interests of the developing countries.

Third, Indian policy makers were uncertain about the wisdom of challenging the Montreal Protocol, given the entire North's backing for it. There appears to have been an expectation in policy making circles that pressure from the North would continue to grow until India acceded to the protocol, with the North exercising leverage in the form of its capacity to restrict trade with nonparties under Article 4 of the protocol. This is confirmed by a statement of Indian Environment Minister, Maneka Gandhi, soon after the 1990 conference in London that amended the protocol, in which she said India could not have afforded not to sign the protocol for long, "and some years later we could have been forced to sign it without any concessions".³⁶

³⁵ 'India's Terms for Signing Montreal Protocol', The Times of India, 17 March, 1989.

³⁶ 'National Meet to Phase Out CFCs Usage Soon', The Economic Times, 17 July, 1990.

In a strongly worded communication to the MOEF, India's ambassador in Helsinki, K.P. Fabian, emphasized the need for India to clarify its policy soon, and to gather G-77 and Chinese support for its position.³⁷ He singled out the issues of technology transfer and financial aid as meriting particular attention, and warned that in the absence of such assistance, the developing countries risked increasing their technological dependence on the North. He also urged the government to make a study of the likely cost to the Indian economy of making the transition to a CFC-free world - in the absence of relevant figures, it was impossible to engage in useful discussions with the North about the quantum and nature of assistance India required.

Fabian cautioned the MOEF to expect a difficult battle over technology transfer guarantees. His discussions with Northern delegations and representatives of multinational corporations in Helsinki had revealed that what the North generally had in mind was assistance in the transfer of technology to developing countries to use CFC substitutes, rather than the transfer of technology to manufacture substitutes. Moreover, there was no intention on the North's part to interfere with market forces in the transfer of technology. Fabian's comments were borne out by a paper put out before the Helsinki meeting by the European Fluorocarbon Technical Committee (EFCTC), a sector group of the Conseil Europeen des Federations de l'Industrie Chimique (CEFIC), which argued that

European chemical companies emphasize that the production of sophisticated chemicals such as HFAs is highly capital intensive and will require multi-stage complex production processes. The production of HFAs by developing countries in the early stages may not therefore be the best approach and it is strongly recommended that the establishment of the new technologies and processes to use HFAs in the refrigerator, plastic foam, solvent cleaning and aerosol industries

³⁷ Confidential sources.

should be accorded the highest priority.

The transfer of technology to manufacture HFAs is a matter for individual chemical manufacturers to consider at the appropriate time based on normal business practices.³⁸

Fabian also conveyed Northern views about a possible international fund to assist developing countries. Most Northern states viewed such a fund in a negative way. They were reluctant to create a new international bureaucracy, and preferred to give such aid as they deemed appropriate through bilateral channels.

The developing countries, Fabian claimed, were generally unsure at Helsinki about what their position ought to be on many of the issues, including the technology transfer and aid questions. He therefore urged the government to play an active role in putting forward concrete proposals and uniting the South around these. He also revealed that some Northern NGOs, like Greenpeace and Friends of the Earth, appeared to be sympathetic to arguments that those who were primarily responsible for depleting the ozone layer, and had profited in the past from doing so, ought not to be allowed to make further substantial gains through their monopoly of technology for substitutes. He urged the Indian government to mobilise support from such favourably disposed organisations. Unless the government played a more active part, Fabian warned, amidst the increasing concern about ozone depletion and with the momentum building up for a phase-out of CFCs, Southern concerns would simply be brushed aside.

Fabian's advice seems to have decided the issue for the MOEF. The government decided after Helsinki that, on balance, its interests demanded strenuous efforts to modify the Montreal Protocol. It was also encouraged by articles in the

³⁸ European Fluorocarbon Technical Committee, EFCTC Policy on Technology Transfer to Developing Countries, 24 April, 1989, pp. 1-2.

press that called upon it to challenge the North over the protocol.³⁹ For instance, noted environmentalist, Rajendra Pachauri, chief of TERI, publicly urged the government to assume a “leadership position” in uniting the South, arguing that “fragmentation of the Third World response is just what the developed countries would want in pursuing international agreements and policies to suit their interests”.⁴⁰

High level delegations sent by the MOEF to the post-Helsinki meetings to discuss amendments to the Montreal Protocol, most of these led either by the Secretary, Mahesh Prasad, or the Joint Secretary, later Additional Secretary, Madhava Sarma, demonstrated the new, firmer approach of the Indian government. The MOEF also called a meeting in June 1989 with CFC producers and users to calculate a tentative figure for the international assistance India would require if it decided to join the protocol. The sum calculated was \$2 billion - \$ 1.2 billion for redesigning CFC plants and producing substitutes, and \$ 800 million as recurring expenditure to keep the plants on stream for ten years.⁴¹ This was conveyed to UNEP as an indicator of the costs to India of switching over to CFC substitutes.

IV. CLARIFICATION OF INDIAN POLICY

The first meeting of the open-ended working group established at Helsinki was held in Nairobi in August 1989, to discuss financial mechanisms to enable developing

³⁹ See, for instance, ‘The Montreal Protocol is Impractical for India’, The Times of India, 1 August, 1989.

⁴⁰ R.K. Pachauri, ‘Soft Options Won’t Do’, Hindustan Times, 22 June, 1989.

⁴¹ ‘India Wants \$2 b to Sign Ozone Pact’.

countries to meet the requirements of the protocol.⁴² In his opening statement, the Executive Director of UNEP described the reticence of developing countries to join the Montreal Protocol as being due to their lack of resources necessary to meet its requirements without serious disruption of their development efforts; consequently, what they needed was concessional funding and outright grants, additional to existing aid programmes.⁴³

The Indian Environment Secretary, Mahesh Prasad, led India's delegation to the Nairobi meeting. He elaborated on several aspects of Indian policy at this meeting. First, developing countries could join the Montreal Protocol and implement it successfully only if the necessary technologies were transferred fully by the North. Second, as compensation for the damage caused by it to the ozone layer, the North should meet all the incremental costs of developing countries in making the transition from CFCs to substitutes, including the costs of conversion of existing CFC production facilities, the costs of retraining personnel, and the costs of collection and destruction of CFCs. Third, the North's commitment to fund the incremental costs of transition, and the details of the financial mechanism, should be clearly included in the protocol and be enforceable. Fourth, the funds provided by Northern governments should be additional to their overseas aid budgets (the notion of additionality).

The developed countries generally argued that the nature of the financial mechanism could be decided only after concrete data on the costs to developing countries of transition became available. They therefore called for appropriate studies to be conducted. With regard to technology transfer, their stance was

⁴² UNEP, Final Report, UNEP/OzL.Pro.WG.I(1)/3, 25 August, 1989.

⁴³ *Ibid.*, p. 1.

generally that market mechanisms would suffice, although governments could play a role in facilitating transfer of data and information.

The Nairobi meeting eventually decided to postpone decisions to a meeting of the working group in February 1990, by which time the results of some preliminary studies of the costs of transition to developing countries could become available.⁴⁴ Following the meeting, individual developing countries were approached by Northern governments and offered assistance in such studies.⁴⁵ An offer of assistance from Britain's Overseas Development Administration was accepted by India.

A second meeting of the open-ended working group was held in Nairobi, from 28 August to 5 September, this time to discuss amendments to the Montreal Protocol.⁴⁶ The Indian delegation was led by Madhava Sarma from the MOEF, and included for the first time a representative of the MEA, Deputy Secretary Ajai Malhotra. Indeed, from this stage onwards, an MEA representative, usually Malhotra, attended every ozone meeting. However, in recognition of the MOEF's status as the nodal agency of the government for matters to do with UNEP, an MOEF representative always led the delegation.

The confrontational approach India had decided to adopt in the ozone negotiations, and the need to gather support from other developing countries, required diplomatic skills and finesse that the MEA was well-placed to provide. The MEA's involvement was needed also to ensure that whatever treaty emerged after amendments did not compromise India's position in future environmental negotiations. MEA involvement was also prompted by the fact that Prime Minister

⁴⁴ Ibid., p. 10.

⁴⁵ Ibid., p. 7.

⁴⁶ UNEP, Final Report, UNEP/OzL.Pro.WG.I(2)/4, 4 September, 1989.

Rajiv Gandhi had begun to take an interest in global environmental issues around this time, and indeed, as will be seen shortly, included the environment in important speeches to various international gatherings.

The Nairobi meeting to discuss amendments was presented four reports commissioned by UNEP, of expert panels that had looked into the scientific assessments, economic implications and environmental effects of ozone depletion, and the technical options to deal with it. In essence, the panels confirmed that the environmental and health effects of continuing ozone depletion were likely to be severe;⁴⁷ that ozone depletion was being caused by CFCs and other ozone depleting substances and could be halted and reversed if these were completely phased out;⁴⁸ and that there were several technological options for phase out or substantial reduction of most of these substances.⁴⁹ The economic panel also examined the economic implications of the Montreal Protocol for developing countries. It concluded that there was a need for transfer of technology and resources to developing countries to off-set the effects of transition on them.⁵⁰

The 24 member economic panel was dominated by developed country representatives, and had only 2 developing country representatives. Although this imbalance was criticised by some developing countries, the panel's recommendations in fact turned out to be sensitive to Southern views on the ozone issue.⁵¹ The panel confirmed that technology for the transition to a CFC-free world was being created

⁴⁷ Ibid., pp. 21-2.

⁴⁸ Ibid., p. 20.

⁴⁹ Ibid., pp. 23-5.

⁵⁰ Ibid., pp. 26-8.

⁵¹ UNEP, Economic Panel Report, (Nairobi: UNEP, 1989).

largely in the North.⁵² It noted that in a number of cases, the transition costs of moving from CFCs to substitutes were substantial, and could prove an obstacle to the adoption of CFC-free methods by developing countries.⁵³ Many developing countries, moreover, were struggling with dire economic situations. Given these circumstances, the panel understood why developing countries were reluctant to pay more to obtain CFC-free technologies than CFC-using technologies.⁵⁴

The economic panel stressed that it was

critical to translate the promises of technology transfer contained in the Montreal Protocol into concrete commitments, both in terms of real resources and in the establishment and development of institutional support. ... Both self-interest and the spirit of international cooperation to preserve the global environment point to policies that will facilitate transfer of the substitute technologies.⁵⁵

It also highlighted the need for national policies in developed countries “to address the potential behaviour of those who might benefit from blocking technology transfer, while at the same time preserving the incentives of firms to develop and market substitutes for CFCs as rapidly as possible”.⁵⁶

The expert panel reports set the agenda for the amendments considered by the working group at Nairobi. India’s amendments generated some friction - some developed countries protested that as a nonparty, India should not be allowed to present amendments but should instead go through a party that was willing to sponsor its proposals. The Indian delegation perceived this as an attempt to suppress its dissent and the solidarity it was fostering amongst developing countries, and

⁵² Ibid., p. 101.

⁵³ Ibid., p. 101.

⁵⁴ Ibid., p. 111.

⁵⁵ Ibid., p. 109.

⁵⁶ Ibid., p. 106.

threatened to register its protest by walking out of the meeting. After some discussion, India was allowed to present its point of view, but it was made clear that at subsequent meetings, amendments could only be presented by the parties to the protocol.

The main amendments proposed by India related to Articles 2(9)(c), 4.2, 5, 13 and 19. As seen earlier, Article 2(9)(c) essentially provided the North a veto power over adjustments.⁵⁷ India wanted this veto provision dropped altogether, or a matching veto provided to the developing countries.⁵⁸ Article 4.2, as seen earlier, discriminated between developed and developing countries by banning the latter from exporting CFCs to nonparties, but not the former.⁵⁹ On grounds of equity, India wanted this article amended so that the ban was either removed from developing countries, or was extended to the developed countries.⁶⁰ Under Article 5, India wanted developing countries to be freed from all regulations on their CFC consumption, with a review of the article to be held by 1999.⁶¹ India's justification for this was that the CFC consumption of developing countries was far less than the threshold of 0.3 kg per capita, and most of them would not reach this figure even in a decade. India wanted Article 13, dealing with the financial provisions for the protocol, amended so that the specific mechanisms for the transfer of technology and resources to developing countries were clearly indicated.⁶² Finally, India wanted Article 19 amended so that there was no discrimination between the rights of

⁵⁷ Chapter 3, p. 80.

⁵⁸ UNEP/OzL.Pro.WG.I(2)/4, Annex III, p. 69.

⁵⁹ Chapter 3, p. 80.

⁶⁰ UNEP/OzL.Pro.WG.I(2)/4, Annex III, p. 71.

⁶¹ *Ibid.*, p. 10; *ibid.*, Annex III, p. 72.

⁶² *Ibid.*, Annex III, pp. 73-4.

developed and developing countries to withdraw from the protocol.⁶³

Discussions in the working group generally revealed support from both developing and developed countries for India's amendments to Articles 2(9)(c), 4.2, 13 and 19. On Article 5, however, India did not get any support, even from other developing countries. The latter indicated to India that in view of the scientific evidence of ozone depletion, it might not be proper to demand the complete removal of regulations on CFC usage. However, they made it clear that they were with India in rejecting the applicability to developing countries of the accelerated CFC phase out schedules being proposed by the developed countries, unless the necessary technology and resources were transferred to them.⁶⁴

The new determination displayed by the Indian government to get a fair deal for the developing countries in global environmental agreements was underlined in speeches made by Prime Minister Rajiv Gandhi at various international fora, including the Non-Aligned Summit in Belgrade in September 1989, and the Commonwealth Heads of Government Meeting (CHOGM) in Kuala Lumpur in October 1989. At the Non-Aligned Summit, Rajiv Gandhi threatened Southern non-participation in global efforts to protect the environment by saying that those with inadequate capacities to pay for environmentally sound technologies would be left with no alternative but to let development proceed without due regard for the environment.⁶⁵ He called for a global effort to bring within easy reach of all states the technologies needed to combat pollution and environmental degradation, warning

⁶³ Ibid., Annex III, p. 74.

⁶⁴ Ibid., p. 8.

⁶⁵ 'PM Moots Fund for Protection of Environment', Hindustan Times, 6 September, 1989.

that these matters could not be left to the play of market forces. Towards this end, he proposed a planet protection fund to which all states would contribute a fixed percentage of their gross domestic product (GDP). At an average contribution of point one percent of GDP, the fund would work out to \$18 billion.

The concept of a planet protection fund was also pushed by Gandhi at CHOGM, overriding British objections.⁶⁶ Britain argued that existing aid flows could meet developing country needs. India, however, enlisted the support of other developing countries and secured favourable language in the Langkawi Declaration, which underlined the importance of international funding mechanisms for “assisting developing countries to obtain access to and transfer of needed environmental technologies, and which should take account of proposals for an international environment fund and planet protection fund”.

The government’s ability to draw out the North-South dimensions of the ozone issue, and its determination to challenge perceived iniquities in the Montreal Protocol, brought wide domestic support. Articles in the press, and statements by prominent environmentalists, clearly demonstrate this.⁶⁷ The broad political support for government policy is demonstrated by the continuity maintained in government policy despite the change in government when Rajiv Gandhi’s Congress Party was defeated in elections at the end of 1989, and replaced by V.P. Singh’s Janata Dal government.

The new government adopted the policy devised by its predecessor, and tried to further its objectives. It took steps to coordinate the position of the South on the ozone issue and other global environmental issues, and organised an important

⁶⁶ ‘CHOGM Ecology Declaration Okayed’, The Times of India, 22 October, 1989.

⁶⁷ See, for instance, Agarwal and Narain, ‘A New Morality’.

conference of developing countries in April 1990 for this purpose. First, though, the progress of negotiations prior to this conference is examined.

V. THE PROGRESS OF NEGOTIATIONS

The second meeting of the open-ended working group to consider amendments to the Montreal Protocol was held in Geneva from 13 to 17 November, 1989.⁶⁸ A number of prominent developing countries, including parties to the protocol like Egypt, Ghana, Kenya, Nigeria, and Mexico, as well as non-parties like India, China, and Brazil, made it a point to attend this meeting. These countries acted together in proposing amendments. India, by the decision of the previous meeting, could not present amendments, and had to request the Mexican delegation to organise meetings of the developing countries and sponsor amendments on their behalf, which the latter did.

Indian amendments to Articles 2(9)(c), 4.2 and 19, proposed at the previous meeting of the working group, were again reiterated, and accepted at this meeting. Broad agreement was reached to modify Article 2(9)(c) so that adjustments in the phase-out schedules of CFCs could not be made without a majority of the developing countries present and voting subscribing to them.⁶⁹ With regard to Article 4.2, it was decided to extend the ban on export of CFCs to non-parties to developed

⁶⁸ UNEP, Report of the First Session of the Second Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, UNEP/OzL.Pro.WG.II(1)/7, 23 November, 1989.

⁶⁹ UNEP, Report of the Legal Drafting Group, UNEP/OzL.Pro.WG.II(1)/5, 20 November, 1989, p. 12.

countries.⁷⁰

With regard to Article 5, the developing countries put forward a proposal that linked their compliance with the protocol to the transfer of technology and financial assistance by the North. Under this proposal, all the incremental costs of developing countries in switching over from CFCs to substitutes would be met by the developed countries through an international trust fund located in UNEP, which would be contributed to annually by the developed countries in proportion to their consumption of CFCs in 1986.⁷¹

A counterproposal by the US sought to strengthen Article 10 of the protocol, dealing with technical assistance to developing countries, by promising the time-bound establishment of a programme to provide technical and financial assistance to developing countries, which would also identify and implement a mechanism to cover the incremental costs of developing countries.⁷² In effect, the US sought to preserve its freedom to manoeuvre by promising assistance to the South without committing itself to the precise nature and quantum of assistance it would provide. No agreement was reached at the meeting on the issue.

The next important meeting to discuss changes to the Montreal Protocol was an informal meeting hosted by the Executive Director of UNEP in Nairobi, from 22 to 24 January, 1990, to discuss financial mechanisms. The results of an independent study commissioned by UNEP to assess the incremental costs to developing countries of implementing the Montreal Protocol were presented before this meeting.⁷³

⁷⁰ Ibid., p. 13.

⁷¹ Ibid., pp. 14, 16-7.

⁷² Ibid., p. 16.

⁷³ UNEP, The Costs to Developing Countries of Meeting the Terms of the Montreal Protocol, UNEP/OzL.Pro.WG.II(2)/3, 29 January, 1990.

These results, although very tentative, suggested that the incremental costs could be at least two billion dollars. This was probably beyond the capacity, and certainly beyond the willingness, of most developing countries to pay. This appears to have influenced a willingness on the part of the developed countries to concede the need for a fund to meet the incremental costs of the developing countries. A consensus was also reached during the informal consultations that contributions to the fund should be additional to development aid. There was also an agreement that the administration of the fund should be under the control of the parties to the protocol.

The general consensus achieved during the informal consultations was carried forward to the second meeting of the open-ended working group to consider financial mechanisms, held in Geneva from 26 February to 5 March, 1990.⁷⁴ This consensus was aided by further evidence that the incremental costs to developing countries were likely to be substantial - the first study of costs to a developing country, namely the country study of India, estimated the additional costs to India of complying with a strengthened protocol at \$ 1.2 billion.⁷⁵

A consensus was thus reached at Geneva that all the agreed incremental costs of the developing countries should be covered by a fund under the protocol,⁷⁶ that the basic provisions of the funding mechanism should be included in the protocol,⁷⁷ and that contributions to the fund should be based on the principle of additionality.⁷⁸

⁷⁴ UNEP, Report of the Second Session of the Second Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, UNEP/OzL.Pro.WG.II(2)/7, 5 March, 1990, pp. 2-3.

⁷⁵ Ibid., p. 5.

⁷⁶ Ibid., p. 10.

⁷⁷ Ibid., p. 10.

⁷⁸ Ibid., p. 12.

There were, however, differences between the North and the South over who should contribute to the fund. The developing countries wanted the fund to be made up only by contributions from the developed countries, in proportion to their 1986 consumption of CFCs.⁷⁹ Most developed countries, however, argued strongly that all states should contribute according to the UN scale.⁸⁰ Their reluctance to accept sole responsibility for funding appears to have been related to a reluctance to give the impression that they were compensating the developing countries for damages caused, rather than assisting the latter to cope with a problem. The notion of compensation, once conceded, even if only implicitly, could establish a precedent for similar demands from the South in future environmental agreements.

There was general agreement at the meeting that the fund should be under the overall control of the parties, with an executive committee with balanced representation from North and South administering it.⁸¹ This was potentially a very significant agreement. The idea of balanced representation of North and South contrasted with the situation in other international funds, such as the International Monetary Fund (IMF), where voting power and decision making power rests mainly with the major donors, i.e. the North. The North's keenness to get all the developing countries on board the ozone protocol helps explain its willingness to pay the price of power-sharing, if that was what the developing countries insisted upon. This concession was also relatively easy to digest, because the ozone fund was to be entirely dedicated to helping developing countries, and it made sense to have their input in decisions about fund allocations. Finally, the North was expecting at this

⁷⁹ Ibid., Annex I, p. 16.

⁸⁰ Ibid., Annex II, p. 17.

⁸¹ Ibid., p. 13.

stage that all states would contribute to the fund, and it was therefore willing to allow all states a say in the administration of the fund; indeed, it might even have felt it had scored a bargaining point by securing a general agreement on balanced representation, thus avoiding a dispute with the developing countries over the non-implementation of the one state-one vote principle that operates in almost all United Nations fora, and which usually guarantees the South an automatic majority in most voting situations. The developing countries, for their part, were looking forward to imposing the entire burden of funding on the North, and were therefore content to share power in the administration of the fund.

The open-ended working group met again in Geneva from 8 to 14 March, 1990, this time to consider amendments to the protocol.⁸² The consensus arrived at in November with regard to Articles 2(9)(c), 4.2 and 19, prevailed at this meeting.⁸³ There was, however, little discussion over the Article 5 proposal of the developing countries that their compliance with the protocol be linked to the transfer of technology and financial resources by the North, and that all their incremental costs be met by the North.⁸⁴ It was decided that this issue and the question of the funding mechanism would be considered jointly, at a meeting in May 1990.⁸⁵

It should be said at this stage that discussions over adjustments and amendments to the Montreal Protocol with regard to speeding up the phase-out schedules for ozone depleting substances were continuing apace. However, the

⁸² UNEP, Report of the First Session of the Third Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, UNEP/OzL.Pro.WG.III(1)/3, 14 March, 1990.

⁸³ *Ibid.*, Annex II.

⁸⁴ *Ibid.*, Annex II, p. 16.

⁸⁵ *Ibid.*, p. 4.

developing countries did not actively participate in these discussions. Their approach was that any phase-out schedule was acceptable, provided it came with a ten year delay for developing countries, and provided the incremental costs were met through a multilateral financial mechanism.⁸⁶

The Geneva meeting offered evidence of the pressure the North was under to reach an accommodation with the developing countries, especially potential hold-out countries like India, in time for the June 1990 London Conference that was to amend the Montreal Protocol. At an informal meeting between EC and Indian delegates, hosted by the French, the EC representatives expressed considerable concern about press reports that an Indian firm had won a contract to establish a CFC production plant in Iraq. The Indians responded by saying that this only highlighted the urgency of reaching a suitable accommodation with the developing countries, in order to control the spread and use of CFC production technology. This appears to have been taken by the Northern delegates as a sign of muscle flexing by India.

In truth, however, the Indian delegates were not aware of the Iraq deal, and had not been informed by the Indian industry and commerce ministries, which approved the deal.⁸⁷ Indeed, the lack of inter-ministerial coordination was again highlighted some months later, when Indian Environment Minister, Maneka Gandhi, described as “a disturbing development” the decision of the other ministries to issue licenses to firms to increase their CFC production.⁸⁸ Although publicly forced to defend the Indian action, privately the Indian delegates expressed their concern about

⁸⁶ Interview with Madhava Sarma, Additional Secretary, MOEF, New Delhi, 15/9/90.

⁸⁷ Confidential sources.

⁸⁸ ‘National Meet to Phase Out CFCs Usage Soon’, The Economic Times, 17 July, 1990.

the damage done to India's image, and the leader of the Indian delegation, Madhava Sarma, even urged the government to review the Iraq deal.⁸⁹

With the conclusion of the Geneva meeting, the stage was now set for the final phase of bargaining before the crucial conference of the parties in London in June. In an effort to ensure that the various unresolved issues went the way of the developing countries in this final phase, India organised a conference of developing countries in April, to strengthen Southern solidarity and send a strong signal to the North. In an effort to increase the awareness amongst developing countries of the relevance of the ozone agreement to other global environmental issues, India extended the agenda for the conference to encompass not only ozone depletion, but also climate change and biodiversity. Thus, India hosted the Conference of Select Developing Countries on Global Environmental Issues in New Delhi, from 23 to 25 April, 1990, the first significant political conference of developing countries on global environmental issues.⁹⁰

VI. THE CONFERENCE OF SELECT DEVELOPING COUNTRIES

The participants in the Conference of Select Developing Countries included Argentina, Brazil, China, Cuba, Egypt, Guyana, India, Kenya, the Republic of Korea, Malaysia, Malta, Pakistan, Peru, Saudi Arabia, Senegal, Sri Lanka, Yugoslavia, and Zimbabwe. These countries were selected both for their influence within the

⁸⁹ Confidential sources.

⁹⁰ The deliberations at this conference on the issues of climate change and biodiversity will be discussed in the relevant chapters of this thesis. This chapter focuses only on the ozone issue.

developing world, and their influence over the outcome of the ozone negotiations. Some, like Brazil, Egypt, Kenya, Malaysia, Malta, and Sri Lanka, were parties to the Montreal Protocol, and could represent the views of the others at London; the others collectively posed a significant threat to the ozone layer as long as they stayed out of the protocol.

China's attendance was particularly important. As with India, its technological capabilities and huge domestic market gave it considerable incentives to increase its CFC production, a possibility which alarmed the North. China's association with India and the other developing countries thus increased the joint bargaining power of the whole group. The MOEF in fact took advantage of China's presence at the conference to propose regular consultation between the two countries, in particular before either took a decision to join the Montreal Protocol.⁹¹ The MOEF's proposal was also backed by the MEA, which hoped that such bilateral contacts would help to improve relations between the two countries.⁹² The Chinese response was positive, and the two sides in fact kept in close touch with each other through the final phase of ozone deliberations.

In his keynote speech to the conference, Indian Prime Minister, V.P. Singh, set the agenda by declaring that

⁹¹ Confidential sources.

⁹² Relations between India and China have never returned to complete normalcy since the 1962 border war. The boundary dispute between the two countries continues to this day. However, in the last few years, bilateral relations have gradually improved. The common interest of the two countries in securing favourable terms in international environmental agreements, and the need to cooperate in order that they might combine their bargaining power, have played an important role in the improvement of relations. We will see later in this thesis that besides the ozone issue, the two countries consulted closely on the climate change and biodiversity issues as well.

[D]eveloping countries should certainly participate in any effort which protects and sustains the health of this planet, but such efforts must be pursued with a sense of equity and fairness. The industrialised countries, who are responsible for the high concentration levels of ozone depleting substances, must develop mechanisms for transfer of technology on a preferential and non-commercial basis and set aside additional resources to enable developing countries to shift to environmentally safe technologies.⁹³

The conference emphasized that the

[I]mplementation of the Protocol by the developing countries is contingent on their being provided with unrestricted access to substitute substances and technologies on a non-commercial basis. The provisions of the Protocol in this regard in Article 5 are vague and unsatisfactory. What is needed is an assurance in the Protocol that these technologies will be made available to the developing countries. If such an assurance cannot be given, the implementation of the Protocol by developing countries may lag behind the schedule set in the Protocol.⁹⁴

On the question of funding, the conference said that

[T]he implementation of the time-tables for reduction of controlled substances will put tremendous financial burden on the developing countries. Hence, all incremental costs to the developing countries should be funded through appropriate financial mechanisms. The financial mechanism should have the following elements: a. The incremental costs must be borne by the creation of a Fund to which requisite contributions will be made by the developed countries in proportion to their consumption of controlled substances in 1986, or in any other proportions that they may decide. b. The fund should be under the control of the Parties themselves and be an integral part of the Protocol.⁹⁵

Moreover, contributions to the fund by the developed countries, the conference insisted, should be “additional to existing financial flows to the developing countries”, while administration of the fund should be based on “democratic principles through

⁹³ MOEF, Conference of Select Developing Countries on Global Environmental Issues, (New Delhi: MOEF, 1990).

⁹⁴ MOEF, Chairman's Summary, Conference of Select Developing Countries on Global Environmental Issues, (New Delhi: MOEF, 1990), pp. 1-2.

⁹⁵ *Ibid.*, p. 2.

a balanced representation of developed and developing countries".⁹⁶

Finally, with regard to the issue of technology transfer, the developing countries argued that

[M]arket forces will not ensure transfer of the requisite technologies to the developing countries. It is not possible to accept the argument that Governments of developed countries cannot compel the holders of technologies to part with environmentally clean technologies at any cost. There are several precedents of developed countries intervening in the free markets to achieve their objectives. Such countries can, if they have the necessary will, intervene to ensure that such technologies are made available to developing countries.⁹⁷

VII. THE FINAL PHASE OF BARGAINING

A meeting of the open-ended working group was held in Geneva from 9 to 11 May, 1990, to discuss the financial mechanism for the Montreal Protocol. In his opening statement to the delegates, the Executive Director of UNEP highlighted the consensus that had already been achieved at the previous meeting: there should be a fund to help developing countries; it should be based on the principle of additionality; and it should be under the authority of the parties, who would establish the basis for contributions to it.⁹⁸

The US, however, dropped a bombshell at the meeting by declaring that it favoured a financial mechanism within the World Bank, with funds coming from existing Bank resources, and no additional funding from donor countries.⁹⁹ The US

⁹⁶ Ibid., p. 6.

⁹⁷ Ibid., p. 6.

⁹⁸ UNEP, Report of the Second Session of the Third Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol, UNEP/OzL.Pro.WG.III(2)/3, 22 May, 1990, pp. 1-2.

⁹⁹ Ibid., p. 4.

volte-face was apparently a result of internal politics within the US administration, with the EPA and the Department of State, who favoured going along with the international consensus, overruled by the White House. Influential elements in the US administration were apparently concerned that conceding developing country demands for a separate fund for ozone would lead to similar demands in the future, on issues like global warming.¹⁰⁰

The US position was strongly criticised by the other delegations at the meeting.¹⁰¹ Many developed countries, including the Nordic states and the EC, made clear their displeasure over the US stand, and declared their acceptance of all the elements of the consensus outlined by the Executive Director of UNEP.¹⁰² The Group of 77 and China, in a joint statement, also expressed their dismay over the US stand, and urged it to review its position.¹⁰³

The developed countries other than the US indicated to the developing countries that they hoped to pressure the US into changing its position. They indicated that US isolation, and the emerging consensus among the parties that the amendments to the protocol, including the financial mechanism, be considered at London as a single package,¹⁰⁴ with no picking and choosing allowed, meant that the US would probably be forced to accept the entire package.

The delegations at Geneva, with the exception of the US, reached a general

¹⁰⁰ 'Overboard on Ozone', International Herald Tribune, 12-13 May, 1990; Benedick, Ozone Diplomacy, p. 159.

¹⁰¹ UNEP/OzL.Pro.WG.III(2)/3, p. 4.

¹⁰² *Ibid.*, p. 4.

¹⁰³ *Ibid.*, p. 4.

¹⁰⁴ See UNEP, Remaining Issues to be Addressed at the Fourth Meeting of the Working Group: Note by the Executive Director, UNEP/OzL.Pro.WG.IV/3, 23 May, 1990, p. 2.

agreement to establish a financial mechanism that would cover all the agreed incremental costs of the developing countries.¹⁰⁵ Contributions under the mechanism would be based on the principle of additionality. The mechanism would include a Multilateral Fund, as well as other multilateral and bilateral funding sources. Bilateral cooperation, up to a specified percentage, could count as part of a state's contribution to the Multilateral Fund. The Fund would be under the authority of the parties, who would determine its overall policies. The parties would establish an Executive Committee, with balanced representation of developed and developing countries, to develop and implement specific policies and administrative arrangements for the Fund.

The delegations unexpectedly reached agreement that the developed countries would commit themselves to make contributions to the Fund, while contributions from the developing countries would merely "be encouraged".¹⁰⁶ Indeed, the Indian delegation later expressed its surprise that the developing countries' demand that the developed states commit themselves to wholly supporting the Fund had been conceded without much debate.¹⁰⁷ An attempt to make amends for the US stand, which had jeopardised the developing countries' full participation in the Montreal Protocol, appears to have played a role in the Northern concession. In addition, since the total contribution of the developing countries to the Fund would be very small,

¹⁰⁵ UNEP/OzL.Pro.WG.III(2)/3, Annex I, pp. 7-8.

¹⁰⁶ UNEP/OzL.Pro.WG.III(2)/3, Annex I, p. 7.

¹⁰⁷ Confidential sources. As far as India is concerned, it is unlikely that the issue of contributions to the Fund, on its own, would have kept India out of the Montreal Protocol. The benefits of the Fund far outweighed any contribution that India would have been required to make, whether on the UN scale, or on the basis of its 1986 consumption of CFCs. The same is likely to have been true for the majority of developing countries.

particularly if their contributions were to be based on their CFC consumption in 1986, the North's decision to excuse them from obligatory contributions was not a painful one in material terms.

The working group also discussed the issue of technology transfer, and the demand of the developing countries that this not be left entirely to market forces. In informal meetings, representatives of several multinational corporations made it clear that they would go purely by commercial considerations in the transfer of technology, and reserved the right to impose any conditions they chose. The developed countries backed the companies in the discussions by stressing that their national laws and socio-economic practices did not permit them to compel companies to part with their technology - if they did legislate to force companies to transfer technology, it would prove counterproductive because it would be a disincentive for companies to continue to innovate and develop more sophisticated, environmentally-friendly technologies. No agreement was reached on the issue, and the working group agreed to continue discussions at its final meeting, just prior to the London Conference.¹⁰⁸

The developing countries generally viewed the results of the working group meeting, particularly the agreement over the financial mechanism, positively. The Indian delegation was also satisfied. The only significant issues that now appeared to stand in the way of India's joining the Montreal Protocol were the uncertainty generated by the US position, and the question of technology transfer guarantees.

The US maintained its position until shortly before the London Conference. Eventually, however, pressure from different quarters, including domestically from

¹⁰⁸ UNEP/OzL.Pro.WG.III(2)/3, p. 5.

Republican and Democratic politicians,¹⁰⁹ the press, and CFC-producing companies,¹¹⁰ all of whom felt that the Multilateral Fund was a small price to pay for securing the cooperation of the developing countries, and internationally from the EC and other Northern states, the developing countries, and UNEP, whose Executive Director expressed the hope that “the US will reconsider its position”,¹¹¹ as well as a personal plea from Britain’s Margaret Thatcher to President Bush,¹¹² persuaded the US to withdraw its earlier objections.¹¹³ The US, however, emphasized at London that it would not recognize the precedential value of the financial provisions of the amended protocol for future environmental agreements.¹¹⁴

VIII. THE LONDON CONFERENCE

The second meeting of the parties to the Montreal Protocol was held in London from 27 to 29 June, 1990. This was preceded by meetings of the working group, from 20 to 26 June, and by informal consultations between the Executive Director of UNEP and representatives of selected countries, including India, on 18 and 19 June.

¹⁰⁹ ‘Environment Issue: Bush Defends US Opposition to UN Plan’, The Hindu, 12 May, 1990.

¹¹⁰ Benedick, Ozone Diplomacy, p. 160.

¹¹¹ ‘Pollution: The Main Culprits’, The Hindu, 15 June, 1990.

¹¹² Thomas, The Environment in International Relations, p. 233.

¹¹³ ‘Phasing-Out Ozone Damaging Chemicals: US Reverses Stand’, The Hindu, 18 June, 1990.

¹¹⁴ UNEP, Report of the Second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, UNEP/OzL.Pro.2/3, 29 June, 1990, p. 9.

At the informal consultations, both the Executive Director of UNEP and the host government, Britain, made it clear that in their view the success of the conference would hinge on whether the majority of developing countries, particularly India and China, were persuaded to join the Montreal Protocol. Their concern about developing world participation evidently stemmed from the fact that only 26 out of a total of 130 Article 5.1 countries had become parties to the Montreal Protocol.¹¹⁵

The working group quickly reached a consensus on amendments to Articles 2(9)(c), 4.2 and 19. The parties decided to amend Article 2(9)(c) such that decisions under it would now require a two-thirds majority of the parties present and voting, representing separate simple majorities of the developed and developing countries present and voting.¹¹⁶ Article 4.2 was amended to require each party to ban the export of controlled substances to non-parties.¹¹⁷ Article 19 was amended so that any party could withdraw from the protocol following a standard procedure.¹¹⁸

The working group agreed to the establishment of a financial mechanism to cover all the agreed incremental costs of the developing countries, on identical lines to those agreed during the May 1990 meeting. Contributions to the Multilateral Fund would be made by the developed countries on the UN scale of assessment.¹¹⁹ Decisions about the financial mechanism would be taken in the same way as decisions under the amended Article 2(9)(c).¹²⁰ The Executive Committee to supervise the

¹¹⁵ UNEP, Report of the Executive Director of the United Nations Environment Programme, Secretariat of the Montreal Protocol - Addendum, UNEP/OzL.Pro.2/2/Add.4/Rev.1, 28 May, 1990, pp. 17-8.

¹¹⁶ UNEP/OzL.Pro.2/3, Annex II, p. 3.

¹¹⁷ Ibid., Annex II, p. 7.

¹¹⁸ Ibid., Annex II, p. 14.

¹¹⁹ Ibid., Annex II, p. 13.

¹²⁰ Ibid., Annex II, p. 13.

Fund would have equal representation of developed and developing countries.¹²¹ The Executive Committee would be assisted in its operations by the World Bank, UNEP and the United Nations Development Programme (UNDP).¹²² The World Bank would generally assist in financing agreed incremental costs, while UNEP would help in research, data collection, clearing-house functions, and promotion of the protocol, and UNDP would provide technical assistance.

The US, although it had modified its earlier stance on the financial mechanism just before the London Conference, and agreed to a separate fund and new and additional funding, continued to challenge other elements of the prevailing consensus by arguing that contributions to the Fund should be voluntary, and that a system of weighted voting should be followed in decisions regarding Fund allocations, so that the major donors had a large share of the votes. These arguments were, however, quickly rejected by the other states,¹²³ and the US was forced to join the general consensus.

The parties also agreed to establish an Interim Multilateral Fund, for a three year period from 1 January, 1991, so that action to help developing countries could start quickly, even before the amendments to the protocol came into force.¹²⁴ The Fund would total \$ 160 million, to be increased by a further \$ 80 million when more countries, particularly India and China, joined the protocol. The Executive

¹²¹ Ibid., Annex II, p. 13.

¹²² Ibid., Annex II, p. 13.

¹²³ Reflecting the annoyance of developing countries with the US stance, the Malaysian representative said, “[W]e must ask the US to treat the rest of us here like equal partners if we are expected to play our role effectively in our joint efforts to save this only planet of ours. We, the developing nations, are certainly not prepared to accept environmental colonialism in whatever form it may appear”. [‘Maneka Insists West Should Pay for the Damage It Has Done’, The Hindu, 30 June, 1990].

¹²⁴ UNEP/OzL.Pro.2/3, pp. 12-5.

Committee of the Fund would have 7 developing country members and 7 developed country members. The chairmanship of the committee would rotate annually between the two groups. Decisions of the committee would be taken by a two-thirds majority, representing simple majorities of both groups.¹²⁵

The working group agreed on a speeded-up phase-out schedule for CFCs. This issue was essentially resolved in mutual discussions amongst the developed countries. The developing countries, as noted earlier, did not particularly involve themselves, operating on the principle that any schedule was acceptable provided it came with a ten year delay for them, and provided the incremental costs were met by a multilateral fund. The working group agreed to a 50 percent reduction in CFCs by 1995, an 85 percent cut by 1997, and a phase-out by 2000. It also agreed to phase out ozone depleting halons and carbon tetrachloride by 2000. Finally, it agreed to phase out methyl chloroform by 2005.

One of the most intractable issues at London was the question of technology transfer. The developing countries, led by India, China, and Malaysia, emphasized that their fulfilment of obligations under the protocol would be conditional on the transfer of technology by the North.¹²⁶ The developed countries, however, argued that they could not guarantee technology transfer - the relevant technologies were privately owned, and they refused to infringe upon the intellectual property rights of the private sector by coercing it to part with these technologies. They were also unwilling to allow the conditionality clause proposed by the developing countries, lest this introduce a legal loophole into the protocol. The developing countries, however,

¹²⁵ Ibid., p. 15.

¹²⁶ Ibid., p. 8.

were adamant. They argued that since the developed countries claimed to face constraints in transferring technology, the constraints of the developing countries in fulfilling their obligations must equally be recognised.

The technology transfer debate could not be resolved by the working group, and continued into the ministerial meeting. Faced with the unyielding stance of the developed countries, Indian Environment Minister, Maneka Gandhi, said in exasperation that “[I]f you continue to clutch your patents to your chest, you may not have a world you need patents for”.¹²⁷ At a press conference, she emphasized that India would not sign an agreement that threatened to destroy its manufacturing base and force it to buy CFC substitutes from the North.¹²⁸

With all the other issues resolved, the pressure on the ministers to achieve a compromise on the technology transfer question was high, and on the last day a solution was found. The developed countries agreed to “take every practicable step” to ensure that “the best available, environmentally safe substitutes and related technologies are expeditiously transferred”, and that the transfers “occur under fair and most favourable conditions”.¹²⁹ For the developing countries, “[D]eveloping the capacity to fulfil the obligations ... will depend upon the effective implementation of the financial co-operation ... and transfer of technology ...”.¹³⁰ The ministers also agreed to review, not later than 1995, the effectiveness of financial cooperation and technology transfer, and whether the developing countries would be able to fulfil their

¹²⁷ ‘Ozone Fund Accord’, Hindustan Times, 2 July, 1990.

¹²⁸ ‘Maneka Insists West Should Pay for the Damage It Has Done’, The Hindu, 30 June, 1990, p. 6.

¹²⁹ UNEP/OzL.Pro.2/3, Annex II, p. 14.

¹³⁰ *Ibid.*, Annex II, p. 10.

obligations.¹³¹

Thus, the amended Montreal Protocol met most of the demands made by India and the other developing countries. These countries were successful in amending clauses in the original protocol that they felt to be discriminatory. At the same time, they preserved concessions in the protocol that permitted them to follow targets adopted by the North with a ten year lag. They succeeded in obtaining a multilateral fund that would support their incremental transitional costs, and which would be funded by the North. They secured an equal share with the North in the control of this fund. Finally, although they were unable to obtain technology transfer guarantees from the North, they managed to link their fulfilment of obligations under the protocol to the satisfactory provision of financial and technical assistance by the North.

The London amendments to the Montreal Protocol came into force on 10 August, 1992, after 20 states had ratified it. India ratified the amended protocol on 19 June, 1992, and it came into force for India on 17 September, 1992.

IX. INDIA'S ASSESSMENT OF THE AMENDED MONTREAL PROTOCOL

Maneka Gandhi made a statement on the last day of the London Conference declaring that the amended protocol met many of the concerns of the developing countries, and therefore she would recommend it to the Indian government for signature.¹³² In an interview soon after the conference to an Indian newspaper, she

¹³¹ Ibid., Annex II, p. 10.

¹³² Ibid., p. 19.

said “[W]e agreed to sign the Protocol because the developed countries agreed to all our conditions”.¹³³

The ozone outcome was generally welcomed across the domestic political spectrum in India. There appeared to be widespread understanding that India had obtained the best possible deal for itself, given various constraints imposed by the need for global cooperation to resolve ozone depletion, India’s concern for its international image as a responsible member of the international community, and the perceived threat of Northern sanctions in the form of trade restrictions if India continued to abstain from participation. Reflecting the widespread view that a reasonable compromise had been achieved, a respected Indian newspaper declared that

[T]he ozone conference elicited an encouraging degree of reasonableness on all sides. A remarkable balance of self-interest and global responsibility was displayed - an uncommon attitude in most attempts at North-South cooperation - and it may not be too much to say that the environment may yet be the source of global warming, but of an entirely desirable variety.¹³⁴

The ozone outcome also satisfied Indian policy makers because they felt that it would set advantageous precedents for future global environmental regimes. Thus, Maneka Gandhi stressed soon after the London Conference that the amended Montreal Protocol would form an excellent model for developing countries when negotiating future global agreements related to the environment.¹³⁵ The amended protocol specifically established three important precedents: the establishment of differentiated responsibilities of states, and the offer of special concessions to

¹³³ ‘Greens Don’t Cost the Nation Money’, The Times of India, 22 July, 1990.

¹³⁴ ‘Ozone Friendliness’, The Statesman, 18 July, 1990.

¹³⁵ ‘Maneka for Signing Pact on CFCs’, Indian Express, 10 July, 1990.

developing countries to encourage their participation in global environmental agreements; the provision for linkage by developing countries of their fulfilment of obligations to the provision of effective assistance to them; and the provision for resources committed by the North to assist developing countries to be additional to normal aid flows from the North to the South. Having accepted the arguments underlying these provisions in the ozone issue, namely that the developing countries faced unique difficulties in tackling global environmental problems, and that the North generally had both material and normative interests in seeing the developing countries cope successfully, the North would find it very difficult to reject similar arguments in future environmental negotiations.

More generally, however, the single most important consequence of the ozone issue for India and other developing countries was the lesson it taught them of the importance of being present, so to speak, at the creation. The ozone issue demonstrated to the developing countries the importance of participating in international negotiations from their very inception, and thus exercising influence over the emergent agendas. Thus, whereas in the ozone issue the developing countries allowed the North to set the agenda and then fought a rearguard action to secure their interests, with the climate change and biodiversity issues they did not make the same mistake and participated in international negotiations right from the start, and in strength.

5. THE CASE OF CLIMATE CHANGE - INTRODUCTION

This chapter outlines the evolution of international concern over climate change up to the end of 1989. It shows that many international conferences in this period highlighted the need for new, cooperative international mechanisms for tackling climate change. They also revealed potentially problematic North-South issues regarding the allocation of responsibility for climate change and the distribution of the costs of responding to it. Formal negotiations to resolve these issues did not, however, begin until 1990, and are discussed in the next chapter.

I. CLIMATE CHANGE AS A GLOBAL ENVIRONMENTAL ISSUE

Contemporary global climate change is primarily a consequence of modifications in the composition of the atmosphere caused by human activities. These activities are increasing the atmospheric concentrations of the major long-lived greenhouse gases, carbon dioxide, methane, nitrous oxide, CFCs and carbon tetrachloride.¹ These increases, according to the Intergovernmental Panel on Climate Change (IPCC), “will enhance the greenhouse effect, resulting on average in an additional warming of the Earth’s surface. The main greenhouse gas, water vapour, will increase in response to global warming and further enhance it”.²

Global climate change affects all states. Its precise future consequences, however, are still uncertain. The IPCC frankly admits that “[G]iven our incomplete

¹ WMO/UNEP, 1992 IPCC Supplement - Scientific Assessment of Climate Change, 1992, p. 8.

² WMO/UNEP, IPCC First Assessment Report: Overview, 31 August, 1990, p. 1.

knowledge of climate, we cannot rule out the possibility of surprises”.³ Nevertheless, there appears to be a general consensus that the impacts of climate change on many states, developed and developing, are likely to be adverse. The IPCC warns that many coastal lowlands could be inundated by sea level rise and storm surges. Changes in precipitation and temperature could radically alter the patterns of vector-borne and viral diseases. Arid and semi-arid regions could face severe water resource problems. Such impacts “could initiate large migrations of people, leading over a number of years to severe disruptions of settlement patterns and social instability in some areas”.⁴

The dramatic nature of the possible impacts of climate change and the uncertainties involved, especially regarding whether the impacts might be underestimated and whether there can be any “winners”, have resulted in a broad international consensus about the desirability of preventing, or at least slowing down, climate change. Moreover, because of the widespread responsibility for climate change, an internationally coordinated response is deemed essential. Yet, international agreement on specific responses has been very hard to achieve. The activities responsible for greenhouse emissions, for instance thermal power production, cement manufacture and paddy cultivation, are often integral to vital sectors of national economies, including energy, industry and agriculture, and can be costly and exceedingly difficult to modify or abandon. In addition, as this chapter and the next show, issues ranging from scientific uncertainties to the distribution of the costs of an international response and North-South differences have hampered the

³ WMO/UNEP, 1992 IPCC Supplement, p. 18.

⁴ WMO/UNEP, IPCC First Assessment, p. 7.

resolution of the climate change issue.

II. NORTH-SOUTH ISSUES IN THE EVOLUTION OF INTERNATIONAL CONCERN OVER CLIMATE CHANGE

Global climate change has not been studied in a comprehensive way until very recently. An impetus was given to multi-disciplinary, internationally coordinated studies of climate change at the First World Climate Conference in 1979. On this conference's recommendation, the World Meteorological Organisation (WMO), in conjunction with a number of United Nations specialised agencies, including UNEP and the Food and Agriculture Organization (FAO), launched the World Climate Programme to determine the human influence on the climate. In the next few years, more than a hundred regional monitoring stations were set up all over the world to record, among other things, the carbon dioxide concentration in the atmosphere. In 1985, WMO, UNEP and the International Council of Scientific Unions (ICSU) organised the International Conference on the Assessment of the Role of Carbon Dioxide and of other Greenhouse Gases in Climate Variations and Associated Impacts, in Villach, Austria. Following from the recommendations of this conference, workshops were held in 1987 in Villach and Bellagio (in Italy), to examine the science of climate change and the possible policy responses.

The Villach and Bellagio workshops were among the first serious efforts to discuss the relative costs of action and inaction on climate change.⁵ They pointed

⁵ World Climate Programme Impact Studies, Developing Policies for Responding to Climatic Change, WCIP - 1, WMO/TD - No. 225, April, 1988.

out significant differences between developed and developing countries regarding their capacities to cope with climate change. Several scenarios were discussed, including 'business as usual', wherein no policies explicitly directed at limiting greenhouse emissions were undertaken, and 'moderate efforts' and 'concerted efforts', which reflected the effort devoted to energy policy, including end-use efficiency and utilization of renewable energy, and other greenhouse emission reduction and anti-deforestation strategies. The developed countries were expected to bear most of the costs of the 'concerted efforts' scenario in the form of research, development and deployment of new energy technologies, CFC substitutes and greenhouse emission abatement techniques. Similarly, under the 'moderate efforts' scenario, the developed countries were expected to invest more in anticipatory adaptation as compared to the developing countries.

The workshops stressed that the developed countries generally had the financial and technical resources to implement needed changes. Many developing countries, however, would need international assistance. If they were unable to implement anticipatory measures, their forced adaptation costs could be quite large. And the residual costs of failure to carry out forced adaptation could also be large. The workshops therefore concluded that from the perspective of the developing countries, the 'business as usual' scenario was worst and the 'concerted efforts' scenario best - under the latter, the benefits of the efforts, particularly of the developed countries, could devolve upon the developing countries at relatively low cost to the latter.

Questions about the distribution of the costs of responding to climate change were also addressed by the World Conference on the Changing Atmosphere in

Toronto in June 1988. Sponsored by UNEP, WMO and Environment Canada, this was the first major international conference on climate change to bring together representatives of states, international organisations and non-governmental organisations. The conference placed the main burden of combatting climate change squarely on the North's shoulders. It declared that "[T]he countries of the industrially developed world are the main sources of greenhouse gases and therefore bear the main responsibility to the world community for ensuring that measures are implemented to address the issues posed by climate change".⁶ It proposed a World Atmosphere Fund to protect the atmosphere, "financed in part by a levy on fossil fuel consumption of industrialised countries".⁷ It also urged governments to enact national legislation for the protection of the atmosphere, and encouraged them to work towards a global framework convention on climate change.⁸

More generally, the Toronto Conference highlighted the pressure beginning to be put on governments, particularly in the North, by environmental groups, concerned scientists, and the media, to take concrete actions to tackle climate change. In the US, for instance, an unusually hot summer in 1988 and the congressional testimony of prominent scientists that global warming was taking place generated considerable media and public interest in the subject.⁹ Testifying to the anxieties created, the Executive Director of UNEP declared in his annual report for 1988 that

⁶ WMO, World Conference on the Changing Atmosphere, p. 295.

⁷ *Ibid.*, p. 298.

⁸ *Ibid.*, p. 297.

⁹ Porter and Brown, Global Environmental Politics, p. 93; Christopher Flavin, Slowing Global Warming: A Worldwide Strategy, (Washington DC: Worldwatch Institute, 1989), pp. 9-10.

“[C]learly, the issue of climate change is UNEP’s highest priority”.¹⁰

The response of states was to establish the Intergovernmental Panel on Climate Change (IPCC), under the auspices of UNEP and WMO. The IPCC met for the first time in November 1988, with 30 countries represented. It agreed that its main task was to complete the first intergovernmental assessment of climate change in about 18 months, to enable it to report to the Second World Climate Conference in 1990. It organised itself into three working groups, the first on the science of global warming, the second dealing with the impacts, and the third concerned with responses. The IPCC’s agenda was subsequently endorsed by the UN General Assembly, which also stressed that action to deal with climate change be taken in a global framework.¹¹

The necessity for universal cooperation to deal with climate change was reiterated by the Summit Conference on the Protection of the Global Atmosphere, held at the Hague in March 1989. The Hague meeting, described as the world’s first environmental summit, was convened by the French, Dutch, and Norwegian Prime Ministers, and attended by leaders from 24 countries. It noted that threats to the atmosphere were great, but the cooperative mechanisms to deal with these threats were inadequate. It therefore recommended the establishment of a new international authority with responsibility to tackle global warming. In this context, a few states like France favoured a strong enforcement mechanism to ensure the compliance of states

¹⁰ UNEP, Annual Report of the Executive Director - 1988, (Nairobi: UNEP, 1989), p. 4.

¹¹ UN, General Assembly, Resolution 43/53, 6 December, 1988.

with the decisions of the proposed authority.¹² Support from the others was lukewarm, however, and the final declaration only spoke of a role for the International Court of Justice in monitoring compliance.

Comprehensive measures to deal with climate change were not discussed by the Hague conference. Its recommendations, moreover, suffered from the non-endorsement of the US and the Soviet Union. Neither country was invited to the summit, according to one analyst because “neither would be prepared to entertain any form of new institution, let alone one that implied a breach in the sacred wall of national sovereignty”.¹³ Despite the Hague Conference’s failure to achieve substantial results, however, it was still significant for highlighting the high-level political concern felt about climate change, and the preparedness of some governments to respond to public anxieties with innovative proposals for international cooperation.

Confirmation that climate change had risen to the top of the international political agenda came at the July 1989 G-7 summit in Paris.¹⁴ The environment and the problems of ozone depletion and global warming were major items of discussion. In the final communique, the G-7 leaders strongly advocated “common efforts to limit emissions of carbon dioxide and other greenhouse gases, which threaten to induce climate change, endangering the environment and the economy”. They emphasised the need to “help developing countries deal with past damage and to encourage them

¹² Glen Plant, ‘Institutional and Legal Responses to Global Environmental Change’, in Rowlands and Greene, eds., Global Environmental Change, pp. 122-44, pp. 123, 139-40.

¹³ Jim MacNeill, ‘The Greening of International Relations’, International Journal, Vol. XLV, No. 1, Winter 1989-90, pp. 1-35, p. 24.

¹⁴ ‘Key Sections of the Paris Communique by the Group of Seven’, New York Times, 17 July, 1989.

to take environmentally desirable action". They also stressed that "the increasing complexity of the issues related to the protection of the atmosphere calls for innovative solutions ... the conclusion of a framework or umbrella convention on climate change to set out general principles or guidelines is urgently required".

Significantly, the G-7 states did not address either the question of responsibility for climate change or the question of the division of the costs of a global response. They probably regarded these questions as premature, particularly in view of the uncertainties about climate change. These issues, however, were evidently important to the developing states. The controversy over identical issues in the ongoing ozone negotiations, in particular, appears to have had some influence on developing country positions. These issues were raised at several international meetings following the G-7 summit.

Thus, as seen earlier in this thesis, at the meeting of the Non-Aligned Movement in September 1989, the Indian Prime Minister, Rajiv Gandhi, threatened Southern non-participation in global efforts to protect the environment by saying that those with inadequate capacities to pay for environmentally sound technologies would be left no alternative but to let development proceed without due regard for the environment. Gandhi proposed a Planet Protection Fund (PPF) to assist developing countries in acquiring environmentally friendly technologies at reasonable cost. His proposal was also backed by other developing countries at the Commonwealth Heads of Government Meeting in Malaysia in October 1989.

The logic underlying the PPF proposal was explained at an international meeting by an adviser to the Indian government on environmental matters, Dr

Rajendra Pachauri, Director of TERI.¹⁵ He argued that the major responsibility for global atmospheric pollution lay in the cumulative activities of the developed countries. Furthermore, the removal of poverty in developing countries would require a growth in their energy consumption. Consequently, “[T]he opportunity cost of a low growth or non-growth scenario in the developing countries would be economically and politically much too high for any global understanding on reducing emissions in the Third World being accepted, much less implemented”. Therefore, the costs of implementing energy efficiency strategies in developing countries, like adopting better technology or restructuring economic activities, ought to be shared by the developed countries.

Yet, despite the concerns voiced by countries like India, the developing states as a group failed to put forward a coherent agenda for discussion with the North. There were several reasons for this. First, although there was general support for the points raised by India, there was less clarity about the emphasis to be placed on different aspects of the climate change issue. Some developing countries, notably the small island states, were very concerned about the effects of climate change, especially the anticipated sea level rise which threatened their very existence. Indeed, in an effort to publicise their fears, these countries organised the Small States Conference on Sea Level Rise in the Maldives in November 1989, followed soon after, on an initiative of Trinidad and Tobago, by the formation of the Alliance of Small Island

¹⁵ Dr Rajendra K. Pachauri, ‘Sharing Global Environmental Costs’, in Human Dimensions of Global Change Workshop Report, Industrial Metabolism: Restructuring for Sustainable Development, (Maastricht: United Nations University and IFIAS, 12-13 October, 1989), p. 147.

States (AOSIS).¹⁶ Other developing countries, like India, were concerned more with the costs of strategies to cope with climate change. And a number of developing countries, as in the ozone issue, were apathetic or confused about where their interests really lay. Second, with negotiations over a climate convention still some distance in the future, confrontation with the North appeared to many developing countries to be premature and possibly unnecessary. Finally, a number of developing countries appeared to be keen to share in the publicity attracted by international conferences on climate change, and to demonstrate their desire to cooperate in global efforts to protect the environment, knowing that few costs were attached to their rhetorical commitments.

The most important of the international conferences referred to above was the Noordwijk Ministerial Conference on Atmospheric Pollution and Climate Change, held in the Netherlands in November 1989, and attended by representatives from 67 countries. The Noordwijk Conference declared climate change to be a “common concern of mankind”, and called upon all countries to initiate actions to control greenhouse emissions according to their capabilities.¹⁷ Developing countries were called upon to meet future targets on emissions, with due regard to their development requirements and the limits of their financial and technical capabilities.¹⁸

In deference to developing country concerns expressed at meetings of the Non-

¹⁶ WMO, Climate Change: Environment and Development, World Leaders' Viewpoints, (Geneva: WMO, 1992), WMO - No. 772, pp. 67-77; John C. Pernetta, 'Impacts of Climate Change and Sea-Level Rise on Small Island States', Global Environmental Change, Vol. 2, No. 1, 1992, pp. 19-31.

¹⁷ Ministerial Conference on Atmospheric Pollution and Climate Change, The Noordwijk Declaration on Climate Change, (Leidschendam: Minister of Housing, Physical Planning and Environment, The Netherlands, 1989), para. 7.

¹⁸ *Ibid.*, para. 19.

Aligned Movement and the Commonwealth in preceding months, the Noordwijk Conference declared that industrialized countries had “specific responsibilities” to tackle climate change, in view of their capabilities and their contribution to the increase of greenhouse gas concentrations.¹⁹ It stressed that the industrialised countries “will take steps to facilitate the transfer to developing countries of technologies to limit the global climate change through financial assistance and other mechanisms to overcome the incremental costs of acquiring and using these technologies”.²⁰ It also recommended that a framework convention on climate change commit parties to address the financial needs of the developing countries in gaining access to technology.²¹

The developing countries accepted the Noordwijk Declaration, though it was ambiguous with regard to the responsibility of the North for climate change and did not impose binding obligations on the North to help them cope with climate change. Moreover, it did not excuse the developing countries from participation in international efforts to tackle climate change. Nevertheless, for reasons mentioned earlier, they went along with this declaration.

In the favourable forum of the UN General Assembly, where they enjoyed a voting majority, however, the developing countries adopted a less benign and more overtly political approach. Thus, they ensured that General Assembly Resolution 44/228, on the organisation of a United Nations Conference on Environment and Development (UNCED),²² addressed the question of responsibility. The resolution

¹⁹ Ibid., para. 7.

²⁰ Ibid., para. 13.

²¹ Ibid., para. 29.

²² UN, General Assembly, Resolution 44/228, ‘United Nations Conference on Environment and Development’, 22 December, 1989.

affirmed that

the responsibility for containing, reducing and eliminating global environmental damage must be borne by the countries causing such damage, must be in relation to the damage caused and must be in accordance with their respective capabilities and responsibilities.²³

In particular, it noted that “the largest part of the current emission of pollutants into the environment ... originates in developed countries, and therefore those countries have the main responsibility for combating such pollution”.²⁴ The resolution also recognised that “new and additional financial resources will have to be channelled to developing countries in order to ensure their full participation in global efforts for environmental protection”.²⁵

Developing countries were to make constant references in the course of negotiations over climate change to Resolution 44/228. As we will see, they consistently pressed the North to accept “main responsibility” for climate change and to provide “new and additional” financial resources and environmentally friendly technologies to help them tackle climate change. These questions, to do with responsibility, new and additional financial resources, and technology transfer, were to become major sources of North-South differences. The General Assembly resolution thus heralded a more political phase of international discussions over climate change.

²³ Ibid., Preamble.

²⁴ Ibid., para. 9.

²⁵ Ibid., Preamble.

6. THE EVOLUTION OF INDIA'S STRATEGY IN THE CLIMATE CHANGE NEGOTIATIONS

This chapter analyses the evolution of India's policy and negotiating strategy with regard to the climate change issue. It also sheds light on the major concerns of the South in the climate change negotiations, and the main reasons for the emergence of North-South differences. India, as will become clear in the course of this chapter, makes for a useful case study for two reasons. First, it played an important role in articulating Southern concerns, and was an influential member of the Southern coalition. Second, its inherent importance in the context of climate change gave it considerable prominence during negotiations; already one of the largest greenhouse gas producers in the world, ranking fifth in the World Resources Institute's list of countries with the highest greenhouse gas net emissions,¹ India's growing population and rapid industrialisation policy meant that its contribution to global warming was expected to grow still further.

I. DEFICIENCIES IN SCIENTIFIC UNDERSTANDING

Growing international concern about global environmental issues in the late 1980s motivated India's MOEF to constitute an Expert Advisory Committee on Global Environmental Issues (EAC) in July 1989, under the chairmanship of Dr A.P. Mitra, Director-General of the Council of Scientific and Industrial Research (CSIR).

¹ World Resources Institute, World Resources 1990-91, (Oxford: Oxford University Press, 1990), p. 15.

This committee was to “advise the Government on all aspects related to global warming”.²

At its second meeting, in May 1990, the committee reported that with regard to the major greenhouse gases (GHGs), “no data base exists in the country, nor is there any present programme for systematic study/collection of data”.³ One of the committee members, Dr Rajendra Pachauri, critically commented that

[A]n accurate estimate of India’s contribution to the global inventory of GHGs and global warming potential is essential for any debate or negotiations in an international forum. As yet, there does not exist a comprehensive structure for the assessment of GHG emission levels from the different sources for India.⁴

In an effort to remedy this situation, the MOEF commissioned several studies. These included a study initiated in 1989 on the impact of sea level rise on Indian coastal areas, expected to take at least two years to complete,⁵ and a National Methane Campaign launched in 1991, to measure India’s methane gas production.⁶ In 1991, too, the CSIR initiated a series of scientific reports on Indian measurements of global phenomena, devoting the first to a preliminary assessment of greenhouse gas emissions in India.⁷

None of the above studies, however, were completed in time for the data to be analyzed and presented to the policy makers for use in the climate change negotiations. The general consensus amongst Indian scientists was, as the CSIR

² MOEF, Second Meeting of the Expert Advisory Committee on Global Environmental Issues, (New Delhi: MOEF, 24 May, 1990), p. 2.

³ Ibid., p. 20.

⁴ Ibid., p. 40.

⁵ MOEF, Annual Report 1989-90, p. 55.

⁶ MOEF, Annual Report 1991-92, p. 9.

⁷ A.P. Mitra, ed., Greenhouse Gas Emissions in India: A Preliminary Report, (New Delhi: CSIR, 1991).

report put it, that “[P]olicy options should ... await more observations, preferably in a coordinated way”.⁸ Furthermore, in the absence of hard data, the scepticism of some senior scientists about the threats posed by climate change came to the fore. For instance, the Director-General of the Indian Meteorological Department questioned at an EAC subgroup meeting in September 1989 “whether it was right to give such importance to the threat of climate change, especially in the absence of hard evidence”.⁹

Consequently, the contribution of Indian scientists to the policy making process with regard to climate change followed the pattern observed with ozone depletion. The scientists lacked essential data and hence preferred to be cautious, calling for further studies. To the extent that senior scientists were willing to take a view, they tended to be sceptical about the threats posed by climate change. Under the circumstances, Indian policy makers gained little inspiration from the scientific community during international negotiations.

II. THE CONFERENCE OF SELECT DEVELOPING COUNTRIES

In the absence of hard scientific data, India’s approach to the climate change issue was significantly influenced by traditional views, outlined earlier in the thesis,¹⁰ and by its experience in the ozone negotiations. In the early stages of the climate issue, traditional arguments about the North’s profligate consumption of resources were made. Thus, Indian President, R. Venkataraman, for instance, argued in a

⁸ Ibid., p. 3.

⁹ MOEF, Second Meeting of the Expert Advisory Committee, p. 43.

¹⁰ See Chapter 2.

speech in November 1989 that the developed countries contributed to global environmental degradation through excessive resource consumption and large scale industrialisation intended to support their lifestyles, and were primarily responsible for adverse changes in the atmosphere and oceans.¹¹ He urged them to tackle the degradation caused by them, and also to help the developing countries by sharing their technologies and resources.

Subsequently, Indian policy was elaborated in more detail at the New Delhi Conference of Select Developing Countries on Global Environmental Issues in April 1990. This conference, as we have seen earlier in the thesis,¹² was organised by India in an effort to strengthen Southern solidarity at a crucial stage in the ozone negotiations, and also to highlight the linkages between the different global environmental issues and the need for coherence in the South's strategy with regard to each. Presenting the case for Southern unity, the Indian Prime Minister, V.P. Singh, said in his inaugural speech that

[T]he developed countries naturally take positions from their own point of view in determining the direction and scope of international negotiations on environmental issues. The case of developing nations tend to go by default since we often do not know enough about such issues and are also unable to present our views in a co-ordinated manner.¹³

The Indian government's perceptions about the climate change issue were outlined in a paper prepared for the conference.¹⁴ In it, the government argued that

¹¹ 'Conservation of Natural Wealth Most Essential', The Hindu, 4 November, 1989.

¹² See Chapter 4, pp. 110-13.

¹³ MOEF, Conference of Select Developing Countries.

¹⁴ MOEF, 'Greenhouse Effect and Climate Change - Issues for the Developing Countries', New Delhi, 5 April, 1990.

(a) It is the developed countries which have created and continue to add to the threats of climate change and it is primarily their responsibility to reverse the situation by setting limits on their emissions of greenhouse gases.

(b) Developing countries contribute little to the problem, though their share is increasing. Their resources are scarce and they do not have ready access to technologies required. They need technical and financial assistance to adopt environmentally benign technologies. Even given adequate resources and required technologies, their socio-economic backwardness may prevent them from attaining fully the desired results.

(c) There are many factors contributing to climate change and the range of responses is wide. Responses by countries would accordingly vary widely, depending on factors such as geography, stage of development, perceptions and priorities. Developing countries would accept particular responses only if they do not impede their economic development or reduce the resources currently available for such development.

India's approach thus reflected traditional concerns about sovereignty, equity and the importance of economic development. It stressed the conventional wisdom, voiced at conferences like Toronto in 1988 and Noordwijk in 1989, that the North was mainly responsible for greenhouse gas production. Consequently, employing the same logic it was using to press its case in the ozone issue, India argued that equity demanded the North accept its responsibility for causing climate change and make amends.

India's arguments also reflected its traditional reluctance to divert scarce resources from development purposes, towards meeting the costs of tackling climate change. By fixing the primary responsibility for climate change on the North, many of the costs could be avoided. However, an awkward note was evident in the claim that the developing countries contribute "little" to climate change, "though their share is increasing". An increasing share in greenhouse emissions could mean an increasing share in the costs of measures to deal with climate change, on the basis of the formulation on responsibility approved in General Assembly Resolution 44/228. This

was clearly undesirable for India. Hence, it articulated other justifications, besides the North's primary responsibility, for avoiding costs, such as the pressing demands made by development programmes on already scarce resources, and "socio-economic backwardness".

India obtained general support at the conference for a narrowly defined position that effectively shifted all responsibility for tackling climate change to the North. The conference thus agreed that

[E]ven assuming high economic growth by developing countries and stabilisation of energy consumption by the developed countries over the next 20 years, the developed countries would continue to be responsible for a major portion of the greenhouse gas emissions. The developing countries would require to increase their energy consumption for their development and for alleviation of poverty. The responsibility for reduction of greenhouse gas emissions to prevent a climate change would, therefore, rest with the developed countries. The developing countries will be prepared to cooperate in energy efficiency measures but no targets can be fixed for the reduction of greenhouse gas emissions by them.¹⁵

Furthermore,

[A]ny convention on climate change must provide for technology transfer to the developing countries and funds to meet their resource needs. The developing countries will not adopt a negative stand but will adopt all the possible measures if they are enabled to implement these measures with technology transfer and financial assistance.¹⁶

The defensive aspect of Indian policy, of avoiding costly international obligations and seeking financial and technological assistance from the North, was to be a constant feature during international discussions over climate change. This was reinforced by reports commissioned by the MOEF which indicated that the costs of greenhouse emission limitation strategies were likely to be very substantial, and that

¹⁵ MOEF, Chairman's Summary, p. 3.

¹⁶ *Ibid.*, p. 3.

many of the technologies required for such strategies were unavailable in India.¹⁷

III. THE BUILD-UP TOWARDS NEGOTIATIONS FOR A CLIMATE CONVENTION

The IPCC working groups released draft reports in May 1990, which received wide publicity in the media.¹⁸ The working group on the science of global warming declared that “[M]an-made emissions are substantially increasing the atmospheric concentrations of the greenhouse gases”. Its best estimate was that average global temperatures would rise by about 2 degrees celsius above pre-industrial levels (1.1 C above existing levels) by the year 2030 and 4 C by 2090, resulting in average rises in sea level over existing levels of 18 cm by 2030 and 58 cm by 2090. It calculated that the stabilization of greenhouse gases in the atmosphere at existing levels would require immediate reductions of over 60 percent in the net (sources minus sinks) emissions from human activities.

The working group on impacts warned of adverse consequences for many states. The coastal areas of many developed and developing states, including Japan, the US, Egypt, Bangladesh, India, and China, would be threatened by sea level rise. Island states like the Maldives, Tuvalu and Kiribati could be inundated by sea level rise. As a result of warming, tropical diseases like malaria would spread to higher latitudes. Droughts would become more serious in many regions. The gravest effects,

¹⁷ TERI, Report on Global Warming and Associated Impacts, (New Delhi: TERI, June 1990); TERI, Strategies for Limiting Carbon Dioxide Emissions in India, (New Delhi: TERI, November 1990).

¹⁸ ‘Global Warming’, Financial Times, 24 May, 1990.

the working group warned, “may be those on human migration as millions are uprooted by shoreline erosion, coastal flooding and agricultural disruption”.

The working group on responses recommended the development by all states of national plans to combat greenhouse emissions, as well as an international framework convention to lay down general principles and obligations for addressing climate change. It did not, however, make specific recommendations for remedial action or discuss their possible costs or how these would be distributed.¹⁹ It claimed the primary constraint on conducting an analysis of responses was the serious lack of data on the economic and social costs of various options. The closest it came to a prescription was to recommend

implementation of measures which are already economically and socially justifiable in their own right and which also provide benefits from a climate change standpoint. Examples include increased energy efficiency, improved use of forests and other natural resources, and reductions in emissions of CFCs.

Responding to the growing pressure for a climate convention, recommended by various conferences including the 1988 Toronto Conference, the 1989 G-7 summit, and the 1989 Noordwijk Conference, and spurred on by the IPCC's warnings, UNEP called a special session of its Governing Council from 1 to 3 August, 1990, to discuss, among other things, the preparations to be made by it for a climate convention. This meeting saw significant signs of discontent on the part of many developing countries with the suggestion that the WMO/UNEP IPCC serve as a forum for future climate negotiations, a possibility favoured by some developed countries.

A number of developing countries complained that they had not been able to

¹⁹ For a detailed criticism of the report of the Response Strategies Working Group, see Jeremy Leggett, ‘Global Warming: A Greenpeace View’, in Leggett, ed., Global Warming: The Greenpeace Report, pp. 457-80, especially pp. 472-5.

participate adequately in the various IPCC meetings because of resource constraints. The small island states were particularly critical of the recommendations of the Response Strategies Working Group, which they saw as inadequate answers to the threats posed by climate change. Consequently, the general view of the developing countries was that the climate negotiations be handed to a body nominated by the UN General Assembly. With the support of some developed countries, this view prevailed. Thus, while the Governing Council authorised the Executive Director of UNEP to convene, jointly with the Secretary-General of WMO, an open-ended working group of government representatives to prepare for negotiations on a framework convention on climate change,²⁰ it also stressed that the first negotiating session of the working group be convened after a decision had been taken by the General Assembly on the way forward.²¹

The special session of the Governing Council provided an opportunity for countries to informally exchange views. Of special significance to Indian policy makers was a private meeting with their Chinese counterparts.²² Here, both sides expressed satisfaction with the outcome of the ozone negotiations. The Chinese also expressed their appreciation for Indian efforts to promote Southern solidarity at the Conference of Select Developing Countries, and disclosed their intention to hold a similar conference in 1991. The two sides agreed to consult with each other, and coordinate their policies on global environmental issues.

Doubtless, India and China would have been aware of their collective

²⁰ UNEP, Proceedings of the Governing Council at its Second Special Session, UNEP/GCSS.II/3, 8 August, 1990, p. 38.

²¹ Ibid., p. 39.

²² Confidential sources.

bargaining power - with two-fifths of humanity, large programmes for rapid industrialisation, and already large greenhouse emissions, their bargaining clout was considerable. Clearly, too, they were keen to repeat, if possible, their ozone success. Because of the confidentiality maintained by both sides in their bilateral communications, it is difficult to highlight obvious evidence of policy coordination during the climate negotiations. Nevertheless, we will see that neither side's proposals adversely affected the other. Moreover, we will see that at a crucial stage in the climate negotiations, Indian policy makers at the highest level linked India's stance to the Chinese position.

(a) The Fourth Plenary Session of the IPCC

The approval given by UNEP's Governing Council for preparations to begin on climate negotiations made governments particularly conscious about the significance of public commitments they might be called upon to make. Thus, the fourth plenary session of the IPCC, held in Sundsvall, Sweden, from 27 to 30 August, 1990, to formally adopt the IPCC First Assessment Report, witnessed contentious debates between states keen to have their own points of view reflected in the Overview, the main document for discussion. Indeed, the original objective of the meeting had been to discuss a document entitled Overview and Conclusions, including an executive summary. But when amendments were invited, after the initial day and a half had been expended on plenary statements, they proved so voluminous and contentious that negotiations on the main document were abandoned and a decision taken that the basic document for negotiations would be the executive summary.

Reflecting the Indian government's understanding of the importance of environmental diplomacy at this stage, and following the pattern established by the ozone negotiations, India's delegation to the IPCC plenary included representatives from both the MOEF and the MEA. Moreover, the MEA was the nodal agency for negotiations over UNCED, and its representation in the Indian delegation therefore partly reflected its efforts to coordinate India's policy across negotiations in different fora. However, an MOEF representative headed the delegation, since the MOEF was the nodal agency for matters relating to UNEP.

Illustrative of the many divisions that emerged during the IPCC plenary session was the split between developed and developing countries over the question of responsibility for climate change. The draft document before the meeting spoke of the "common responsibilities" of industrialised and developing countries to combat climate change. The developing countries, however, wanted this amended to reflect the "main responsibility" of the developed countries. But because of strong resistance from countries like the US and Britain, and in view of the limited time available for discussion, a semantic compromise was agreed: "Industrialized and developing countries have a common but differentiated responsibility in dealing with the problem of climate change and its adverse effects".²³

The best evidence, however, of the heightened sensitivity of governments to possible constraints on their future negotiating positions was provided by the attitude of many developing countries, including India, to the entire IPCC report. These countries felt they had been unable to participate fully in the work of the IPCC, and consequently it had been dominated by the North. Their grievances were in fact

²³ WMO/UNEP, IPCC First Assessment, p. 10.

validated by the IPCC's Special Committee on the Participation of Developing Countries, which identified a number of factors which kept developing countries from participating fully: insufficient information; insufficient communication; limited human resources; institutional difficulties; and limited financial resources.²⁴ Furthermore, these countries felt that the IPCC report was being rushed through the plenary session without adequate discussion. The Indian delegation reasoned that this was being done because of three factors: the desire of the IPCC Chairman, Bert Bolin, to complete the first assessment report on time, to show that the meeting was a success; the keenness of the European countries to complete the IPCC's mandated work and to move on to substantive negotiations on a framework convention; and the US administration's apprehension about the negative fall-out in terms of domestic public opinion and congressional reaction in case the IPCC report was not adopted.²⁵ Consequently, India and other developing countries, displaying their dissatisfaction with what they saw as a North-inspired document, and with voting power on their side, qualified the entire IPCC report by inserting in its preface this statement: "It should be noted that the Report reflects the technical assessment of experts rather than government positions, particularly those governments that could not participate in all Working Groups of IPCC".

(b) The Preparatory Meeting for Negotiations on a Climate Convention

At the UNEP/WMO preparatory meeting for negotiations on a climate

²⁴ Ibid., p. 15.

²⁵ Confidential sources.

convention in September 1990, the developing countries reiterated their opposition, expressed earlier at the UNEP Governing Council meeting, to negotiations under the auspices of UNEP and WMO. There were several reasons for their dissatisfaction with UNEP and WMO. As noted earlier, they were unhappy with the handling by these agencies of the IPCC process. They felt the IPCC process had been dominated by experts from the North, and in the absence of clear rules of procedure, had been manipulated by the latter to their advantage. The handling of the IPCC plenary session, moreover, had done little to reassure them that their interests would be protected. Finally, a number of developing countries were nervous about the enthusiasm of the Executive Director of UNEP, Mostafa Tolba, to conclude a convention before the Earth Summit in 1992 - they felt their interests might take secondary importance to the speedy conclusion of an international agreement.²⁶ Consequently, the developing countries pressed for a forum duly established by the UN General Assembly to conduct negotiations.²⁷

The preparatory meeting took note of the strong concerns expressed by the developing countries. Indeed, as seen earlier, declarations at a series of international conferences had already demonstrated the widespread understanding of the need for universality and cooperation in international negotiations on climate change. Consequently, the preparatory meeting reiterated the UNEP Governing Council's recommendation that the UN General Assembly "recommend ways, means and modalities for further pursuing negotiations".²⁸ It also recommended that the

²⁶ Porter and Brown, Global Environmental Politics, p. 50.

²⁷ UNEP/WMO, Ad Hoc Working Group of Government Representatives to Prepare for Negotiations on a Framework Convention on Climate Change, UNEP/WMO Prep./FCCC/L.1/REPORT, Geneva, 24-26 September, 1990, p. 7.

²⁸ *Ibid.*, Recommendations, p. 10.

negotiating body respond to General Assembly decisions, and regularly inform it of progress in its deliberations.²⁹ It emphasised that “[T]he negotiating process should be organised and conducted in such a manner as to ensure openness, transparency, universality and legitimacy. It should reflect the full participation and commitment of all States to the negotiations”.³⁰

The concerns expressed by the developing countries revealed that they were determined from the outset to be fully involved in the climate negotiations. They appeared to have learnt the importance of being present at the agenda-setting stage of global environmental negotiations from their experience in the ozone issue. This impression is reinforced by the discussions during the preparatory meeting over representation on the bureau of the negotiating body. The importance of such representation was stressed by the Indian delegation in its report to the Indian government, in which it argued that “having a representative on the bureau would help us to keep track of and influence the process”.³¹ Apparently on the same principle, a number of countries lobbied during the preparatory meeting for places on the bureau. The African countries and the small island states, for instance, emphasizing their vulnerability to climate change, made strong statements asking for representation on the bureau.³² The meeting eventually resolved that the bureau “should reflect a proper geographical representation, balance of interests and specific concerns ... and be of strength sufficient to ensure equity and still limited to ensure effectiveness”.³³

²⁹ Ibid., Recommendations, Section A, no. 4, p. 10.

³⁰ Ibid., Recommendations, Section A, no. 1, p. 10.

³¹ Confidential sources.

³² UNEP/WMO Prep./FCCC/L.1/REPORT, pp. 7, 8.

³³ Ibid., Recommendations, Section A, no. 5, p. 10.

Developing country concerns about full participation in negotiations were also reflected in the recommendation of the preparatory meeting that “not more than two meetings of the main body or sub-groups should be in session simultaneously”,³⁴ since it would otherwise be difficult for those developing countries with small delegations to be adequately represented in all the sub-groups.

In sum, the preparatory meeting revealed the determination of the developing countries to ensure their interests were protected even at this early stage of the climate negotiations. This did not, however, mean that their individual national interests would necessarily coincide when substantial negotiations began. Indeed, the variation in national interests, both between and within the developed and developing worlds, was soon revealed at the Second World Climate Conference.

(c) The Second World Climate Conference

The Second World Climate Conference, held in Geneva from 1-7 November, 1990, provided the 137 countries which participated the opportunity to clarify their positions on climate change. But the desire to achieve a consensus during this once-a-decade conference, particularly over the Ministerial Declaration, the principal political statement of the conference, meant that many compromises had to be made.

The developing countries were generally united over key elements of the position outlined at the Conference of Select Developing Countries, concerning the question of responsibility and the need for Northern assistance. The need for Northern assistance was in fact widely acknowledged during the conference. Thus,

³⁴ Ibid., Recommendations, Section A, no. 15, p. 12.

the conference statement of the scientific and technical sessions said,

[D]eveloping countries are being asked to participate in the alleviation of the legacy of environmental damage from prior industrialization. If they are to avoid the potentially disastrous course followed by industrialized countries in the past, they need to adopt modern technologies early in the process of development, particularly in regard to energy efficiency. They must be full partners in the global scientific and technical effort that will be required. It is clear that developing countries must not go through the evolutionary process of previous industrialization but rather, must 'leapfrog' ahead directly from a status of under-development through to efficient, environmentally benign, technologies presently found only in the most advanced industrial economies. ...

... a massive and sustained flow of scientific and technological expertise towards the development of the intellectual resources, technical and institutional capacity of the developing countries is a necessary complement to the efforts of those countries.³⁵

The question of responsibility, however, produced differences with the North. The debate with the North over this question was carried out under the shadow of a 1990 report by the Northern non-governmental organisation, the Washington-based World Resources Institute (WRI).³⁶ Until this stage, the conventional wisdom had been that the North, by virtue of having industrialised earlier and used energy-intensive industrial methods for comparatively longer than the developing world, had contributed far more to climate change than the South. The WRI report, however, purported to show that the annual greenhouse emissions of the developing countries almost equalled those of the developed world.³⁷ Furthermore, it claimed the South's emissions were growing and would overtake the North's in the near future.

Despite the evidence of the WRI report, the developing countries sought

³⁵ Second World Climate Conference, 'Conference Statement - Scientific/Technical Sessions', in J. Jäger and H.L. Ferguson, eds., Climate Change: Science, Impacts and Policy, (Cambridge: Cambridge University Press, 1991), pp. 497-503, p. 502.

³⁶ WRI, World Resources 1990-91.

³⁷ *Ibid.*, p. 15.

recognition in the Ministerial Declaration of the “main responsibility” of the industrialized countries for actions to reduce greenhouse emissions, since “past and present emissions of greenhouse gases originate largely in these countries”.³⁸ The South’s reference to historical emissions partly reflected its understanding that because of the long-lived character of greenhouse gases, these emissions would remain responsible for global warming long into the future. It also was necessary if the South wished, despite the WRI’s findings, to press the argument of Northern “main responsibility”.

The industrialised countries strongly resisted this. An admission of main responsibility would raise controversial issues relating to liability for damages caused by climate change which the Northern countries were keen to avoid. The North also did not want to give the South any excuse to free-ride on Northern efforts to combat climate change. The British Prime Minister, Margaret Thatcher, thus argued at the conference that “[T]here is little point in action to reduce the amounts being put into the atmosphere in one part of the world, if they are promptly increased in another”.³⁹ The North’s policy consequently was that the successful resolution of the climate issue required the sharing of responsibilities by all countries in the present and the future, and that raking up the past served little purpose.

The Ministerial Declaration eventually did note that “the developed world is

³⁸ This language was used by the developing countries during the conference, and appeared in the draft Ministerial Declaration discussed at an earlier meeting. See WMO, Report of the Meeting of Government Representatives to Draft Ministerial Declaration for the Second World Climate Conference, Geneva, 27-29 September, 1990.

³⁹ Quoted in Jäger and Ferguson, Climate Change, p. 517.

responsible for about 3/4 of all emissions of greenhouse gases”.⁴⁰ However, the South was unable to translate this into an admission by the North of main responsibility for climate change. Instead, a North-South compromise was built around the notion of “common but differentiated responsibility”, which had first appeared in the IPCC’s first assessment report. The Ministerial Declaration thus declared that

[R]ecognizing ... that the principle of equity and the common but differentiated responsibility of countries should be the basis of any global response to climate change, developed countries must take the lead. They must all commit themselves to actions to reduce their major contributions to the global net emissions and enter into and strengthen co-operation with developing countries to enable them to adequately address climate change without hindering their national development goals and objectives.⁴¹

The developing countries, for their part, were not excused from actions, and were urged to, “within the limits feasible, taking into account the problems regarding the burden of external debt and their economic circumstances, commit themselves to appropriate action in this regard”.⁴² Nevertheless, they successfully asserted their right to increase greenhouse emissions. Thus,

[W]e recognize that developing countries have as their main priority alleviating poverty and achieving social and economic development and that their net emissions must grow from their, as yet, relatively low energy consumption to accommodate their development needs.⁴³

Despite their unity over the question of responsibility and the need for Northern assistance, divisions arose between the developing countries during the conference over other substantive issues. In particular, the small island states, which

⁴⁰ Second World Climate Conference, Ministerial Declaration, [reprinted *ibid.*, pp. 535-9], para. 12.

⁴¹ Second World Climate Conference, Ministerial Declaration, para. 5.

⁴² *Ibid.*, para. 5.

⁴³ *Ibid.*, para. 15.

were particularly vulnerable to the effects of climate change, repeatedly clashed with the oil producing countries. The latter, citing scientific uncertainties about climate change, opposed strong actions to control greenhouse emissions, since these would adversely affect their fossil fuel exports. The small island states, however, supported such actions for obvious reasons. The majority of the developing countries adopted positions between these two groups, generally favouring strong actions by the North, but rejecting such actions for themselves. In the event, the points of view of both the small island states and the oil producers were reflected in the Ministerial Declaration.

Thus,

[T]he potentially serious consequences of climate change, including the risk for survival in low-lying and other small island States and in some low-lying coastal, and arid and semi-arid areas of the world, give sufficient reasons to begin by adopting response strategies even in the face of significant uncertainties.⁴⁴

At the same time,

[T]he specific difficulties of those countries, particularly developing countries, whose economies are highly dependent on fossil fuel production and exportation, as a consequence of action taken on limiting greenhouse gas emission, should be taken into account.⁴⁵

Divisions over actions to control greenhouse emissions also occurred within the North. Practically all the Northern states, including the EC, the Nordic states, Canada, Australia, New Zealand, Austria, Switzerland, Iceland, and Japan, agreed in general terms to stabilize their greenhouse emissions, particularly carbon dioxide, by the year 2000 at 1990 levels.⁴⁶ The major exception was the US, the largest greenhouse gas producer in the world, which strongly resisted such targets. Many

⁴⁴ Ibid., para. 8.

⁴⁵ Ibid., para. 16.

⁴⁶ Ibid., para. 12.

observers have in fact argued that there was a distinct cross-bloc alliance between the US and the oil-producing developing countries in their common resistance to strong measures to stabilise or curb greenhouse emissions.⁴⁷ The US, maintaining consistency in a stance it had been adopting for many months now,⁴⁸ stressed the need for more research to resolve the uncertainties in the climate change issue, and argued that only a no-regrets policy was justified at this stage. Because of the crucial US role in any international strategy to tackle climate change, the other developed countries proved reluctant to isolate it. The Ministerial Declaration consequently did not specify targets for greenhouse gas stabilization or reduction.

(d) General Assembly Resolution 45/212

The developing countries used the favourable forum provided by the UN General Assembly to ensure that the resolution over climate negotiations took note of the preferences expressed by them at the preparatory meeting in September 1990. Thus, on 21 December, 1990, the Assembly adopted Resolution 45/212, wherein it established a single intergovernmental negotiating process, under its own auspices but supported by UNEP and WMO. It called for negotiations to be conducted by an Intergovernmental Negotiating Committee, and to be completed before the Earth Summit. The Assembly also established a special voluntary fund to enable the participation in negotiations of developing countries, especially the small island states

⁴⁷ MacNeill et al, Beyond Interdependence, p. 77.

⁴⁸ Rowlands, 'The International Politics of Global Environmental Change', p. 31; Helen Gavaghan, 'Bush Rejects Scientists' Call for Action on Global Warming', New Scientist, Vol. 125, No. 1703, 10 February, 1990, p. 23.

and the least developed countries.

IV. NEGOTIATIONS OVER A FRAMEWORK CONVENTION ON CLIMATE CHANGE

The transfer of the climate negotiations from UNEP and WMO to the General Assembly resulted in the MEA replacing the MOEF as the nodal agency within the Indian government with responsibility for negotiations. Few discordant notes appear to have been produced by this change. Chandrasekhar Dasgupta, Additional Secretary in the MEA, was appointed as leader of the Indian delegation to the climate talks. The establishment of a good rapport between him and the Environment Secretary, Rajamani, and the inclusion of an MOEF representative in the Indian delegation, resulted in the elimination of initial frictions between the two ministries.⁴⁹ In addition, when potentially controversial decisions had to be made during the final stages of the climate negotiations, a good working relationship between the Foreign Secretary, J.N. Dixit, and Rajamani, enabled Dasgupta to get on with his work without conflicting instructions being issued to him.

(a) The First Session of the INC

The first session of the INC, held in Washington from 4 to 14 February, 1991, was primarily an organisational one. It elected a bureau, approved special efforts to encourage participation by developing countries, established rules of procedure, and

⁴⁹ Interview with R. Rajamani, Secretary, MOEF, Rio de Janeiro, 14/6/92.

finalized the mandate of the working groups.

In line with the perceived importance of representation on the bureau,⁵⁰ India sought membership and was elected as one of the Vice-Chairmen, representing the Asian group. The other members of the bureau were France (West European and Others group), Argentina (Latin American group), Algeria (African group), and Rumania (East European group). The French representative, Jean Ripert, was elected Chairman of the bureau. The two working groups established during this session also each had a Chairman and two Vice-Chairmen. The five recognised groups nominated representatives to the bureaux of these working groups as well. In deference to its special interests, the Alliance of Small Island States (AOSIS) was allowed to nominate the sixth member.

The session approved the establishment of a special voluntary fund to support the participation of developing countries in the climate talks.⁵¹ The need for such a fund was illustrated by the poor representation of the developing countries when compared to the strong delegations sent by the developed countries. For instance, developing countries like India and Bangladesh had 3 representatives, Pakistan, Ghana, Indonesia and Iran, 2, and Nigeria, 1, whereas the US had 27, Japan, 21, Canada, 18, France, 13, and the Netherlands, 12.⁵²

The INC agreed that General Assembly rules of procedure would prevail at

⁵⁰ See p. 150.

⁵¹ UN, General Assembly, Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of Its First Session, Held at Washington, D.C., From 4 to 14 February, 1991, A/AC.237/6, 8 March, 1991, pp. 16-7.

⁵² UN, General Assembly, Intergovernmental Negotiating Committee for a Framework Convention on Climate Change - List of Participants, A/AC.237/INF.1, 12 February, 1991.

all its meetings. All efforts were to be made to reach a consensus on the INC's decisions, with a 'cooling-off period' between failure to achieve general agreement and voting. This followed the stress laid by the developed states on the need for consensus, without which, they warned, the convention would have little meaning. This warning was clearly directed at the G-77, the main platform for the South, whose voting strength considerably outweighed that of the North.

Finally, the Washington session established two working groups of the INC, the first dealing with 'commitments' related to greenhouse emission controls and the provision of financial and technological assistance to developing countries, and the second dealing with 'mechanisms' to implement the commitments undertaken by states.⁵³

(b) Developments Prior to the Second Session of the INC

Two important developments took place before the second session of the INC in June 1991, which were to have significant impacts on Indian policy. These were: the exposure of critical weaknesses in India's economy; and the production of an influential report by the Delhi-based NGO, the CSE, which challenged the statistics and analysis of the 1990 WRI report.

Soon after the first session of the INC, critical weaknesses in the Indian economy were fully exposed. The crisis had arguably been building up over a number of years, as a result of three major factors: inward-looking trade and investment policies; extensive bureaucratic controls over production, investment and trade; and

⁵³ A/AC.237/6, p. 24.

poor economic performance of the public sector.⁵⁴ What brought the crisis to a head, however, was an explosive growth in foreign borrowing and government spending during the 1980s.⁵⁵ A further shock was delivered by the rise in oil import costs, loss of remittances, and expenditures incurred in evacuating Indian workers, following the Iraqi invasion of Kuwait.⁵⁶ In January 1991, India was forced to take out IMF loans worth \$ 1.8 billion. Further multilateral loans were sought, which entailed firm commitments to control and reduce the budget deficit and to undertake structural reforms.

The situation by June 1991 was critical. It is vividly described by the Indian Finance Minister, Manmohan Singh:

Inflation had reached a double digit level and was accelerating. Balance of payments deficit had reached an unsustainable level despite a severe import squeeze. Nobody was willing to lend us money. Due to the erosion of confidence, non-resident Indians had begun to withdraw on a large scale the deposits they had kept with our banks. Our foreign exchange reserves worth about one billion dollars at the end of June 1991 were equal to no more than two weeks' imports. ... In June 1991 we had reached the end of the road.⁵⁷

In July 1991, the newly-elected Congress government announced a structural reform agenda, which gained the endorsement of the World Bank and the IMF.

The most important effect of the exposure of economic vulnerability was to introduce a note of moderation in Indian policy. Indian negotiators feared that India's economic vulnerability and dependence on Northern aid would be exploited by the North. Thus, a report prepared by the US Environmental Protection Agency

⁵⁴ Jagdish Bhagwati, India in Transition - Freeing the Economy, (Oxford: Clarendon Press, 1993), p. 46.

⁵⁵ *Ibid.*, p. 67.

⁵⁶ *Ibid.*, p. 68.

⁵⁷ Singh, Environment and the New Economic Policies, p. 3.

for the US Congress, which appeared to give substance to Indian fears, came in for much scrutiny in the MOEF and the MEA.⁵⁸ This report suggested that

[T]he US can help developing countries reduce their greenhouse gas emissions through its foreign aid programs and contributions to the World Bank and other multilateral development banks (MDBs). Although all such programs (US and foreign) address only a small percentage of total investment in developing countries, they can exert disproportionate influence because they leverage much greater amounts of funds and certify the financial merit of particular technologies and projects.⁵⁹

This was interpreted by Indian policy makers as evidence of US willingness to influence the national policies of India and other developing countries through the use of new conditionalities in multilateral lending. Consequently, to avoid such pressure from the North, instructions were periodically given to India's negotiators, as we will see, to tread carefully and to avoid isolation during negotiations.

The second important development which took place before the second session of the INC was the production of a robust criticism of the 1990 WRI report by the CSE.⁶⁰ The WRI report, as we have seen, cast doubt on the conventional wisdom regarding responsibility for climate change. The CSE, however, highlighted problems in the methodology adopted by the WRI. It criticized the WRI for focusing on current annual emissions, rather than cumulative emissions. By neglecting the past, the WRI enhanced the South's responsibility for climate change. The CSE also pointed out that by focusing only on their short-term heating effect, the WRI was ignoring the various atmospheric residence times and long-term warming effects of

⁵⁸ Desiraju interview.

⁵⁹ Daniel A. Lashof and Dennis A. Tirpak, eds., Policy Options for Stabilizing Global Climate, (London: Hemisphere Publishing Corporation, 1990), pp. 782-3.

⁶⁰ Anil Agarwal and Sunita Narain, Global Warming in an Unequal World: A Case of Environmental Colonialism, (New Delhi: CSE, 1991); see also, Agarwal and Narain, Towards a Green World, (New Delhi: CSE, 1992), pp. 27-33.

greenhouse emissions; consequently, the WRI report was biased against countries that produced relatively large quantities of short-lived greenhouse gases, as did many developing countries. The CSE also opposed the WRI's allocation to each country of a share of the natural sinks on the basis of its share of greenhouse emissions. Such an allocation gave the largest share of the natural sinks to the largest polluter, thus providing a perverse incentive to pollute. Instead, the CSE argued, the natural sinks ought to be allocated such that each nation was credited with its entire national sinks as well as a share of the global sinks based on its share of world population. Apart from these considerations, the CSE also criticised the WRI for using uncertain and faulty data.

From a policy perspective, the CSE resisted the WRI's suggestion that all greenhouse emissions were readily comparable,⁶¹ arguing instead that it was important to differentiate between "survival" emissions related to activities like paddy cultivation and cattle rearing (which produced methane) and "luxury" emissions related to activities like automobile usage (which produced carbon dioxide). Cutting "luxury" emissions, according to the CSE, was less painful in its human impact than reducing "survival" emissions. The CSE also advocated the calculation of each country's emissions on a per capita basis. It argued that it was illogical to ignore the size of a state's population when comparing the emissions of states with large populations and needs, like India and China, with those with much smaller populations and requirements. Furthermore, it was morally correct to give each human being an equal share of the global greenhouse budget.

⁶¹ On some of the issues surrounding the comparison of greenhouse emissions, see the essays in 'Viewpoint - Greenhouse Equity', Global Environmental Change, Vol. 2, No. 2, 1992, pp. 82-100.

The CSE criticized Third World representatives who had unquestioningly accepted the statistics and analysis of the WRI.⁶² It also objected to UNEP lending its name to the WRI publication: “the unfounded credibility given to the WRI report by the United Nations agencies helped to generate enormous publicity across the world, including in developing countries”.⁶³

The CSE report impressed the Indian government. It provided India’s negotiators with ammunition to attack the WRI report. It also encouraged the Indian government to adopt the notion of per capita equity, an idea which had already occurred to MOEF bureaucrats but was not translated into a specific proposal until this stage.⁶⁴

(c) The Second Session of the INC

The second session of the INC, held in Geneva from 19 to 28 June, 1991, provided the first major opportunity for states to make substantive arguments. India submitted a ‘non-paper’, a full draft text of the convention, designed partly to furnish a basis for negotiations and partly to rally the developing countries.

The main thrust of India’s non-paper was on the concept of per capita equity.⁶⁵ The leader of the Indian delegation, Dasgupta, said,

⁶² See, for example, the article by the eminent Indian scientist, M.S. Swaminathan, ‘A Non-Aggression Pact With Nature’, The Hindu, 3 June, 1990.

⁶³ Agarwal and Narain, Towards a Green World, p. 32.

⁶⁴ Sarma interview.

⁶⁵ The logic behind this is clear from the following statistics: India’s per capita carbon dioxide emissions in 1989 were 0.21 tons of carbon compared to 2.72 for the UK and 5.34 for the US; its per capita energy consumption in 1990 was 231 kgs of oil equivalent compared to 3646 for the UK and 7822 for the US. [Figures from The World Bank, World Development Report 1992: Development and the Environment,

the problem of global warming is caused not by emissions of greenhouse gases as such but by excessive levels of per capita emissions of these gases. If per capita emissions of all countries had been on the same levels as that of the developing countries, the world would not today have faced the threat of global warming. It follows, therefore, that developed countries with high per capita emission levels of greenhouse gases are responsible for incremental global warming. ... it follows that they have a corresponding obligation to take corrective action. ... An equitable solution can only be found on the basis of significant reductions in levels of per capita emissions in developed countries, so that over a period of years these converge with rising per capita emissions in developing countries.⁶⁶

On the question of developing country responsibilities, Dasgupta said,

[I]t must ... be recognized that the process of development will inevitably lead to increasing greenhouse gas emissions in developing countries. ... This is not to say that developing countries should be silent spectators. While they can have no legal responsibility - at least in the near future - for taking corrective measures, they may, in accordance with their national development plans, priorities and objectives, consider feasible measures, provided that the full incremental costs involved are met by provision of new and additional financial resources from developed countries. Developing countries will also require assured access to technology on preferential terms.⁶⁷

Finally, on the question of a mechanism to fund financial and technological flows to the developing countries, Dasgupta said, “[W]e believe it is essential that this should be democratically administered by the parties to the Convention, rather than through institutions where donors have disproportionate influence”.⁶⁸

The Indian non-paper was generally welcomed by developing countries, in particular for its focus on the North’s primary responsibility, the South’s need for assistance, and the importance of democratic administration of any funding mechanism. It was also well received by many environmental groups present at the

(Oxford: Oxford University Press, 1992), pp. 204 and 226-7].

⁶⁶ MOEF, ‘Statement by the Leader of the Indian delegation’, New Delhi, 19 June, 1991.

⁶⁷ Ibid.

⁶⁸ Ibid.

session. The Eco, for instance, published cooperatively by non-governmental environmental groups at major conferences since Stockholm, welcomed the Indian stand. It described it as

more far-sighted and more in tune with the thoughts and hopes of people all over the world, than the disingenuous rhetoric of many rich countries. ... The present argument is in truth, between the very rich and the mainly poor. It will not be a disaster if most poor countries do relatively little about the greenhouse effect for a few years. It will be a disaster if the major economies of the North do nothing, and that includes financing a different pattern of development in the South.⁶⁹

The developed countries, for the most part, rejected India's non-paper as an extreme position. In particular, they resisted the idea that developing countries would not accept any obligations, and the proposal that all states should bring their per capita emissions to a common level. The French came closest to some notion of per capita equity, but insisted that consideration also be given to GNP per capita as well as the total emissions of each state.

Despite the general approval given by the developing countries to the Indian non-paper, divisions emerged within the South over the specific elements in it that had been meant to provide a uniting theme for the South. The concept of convergence of per capita emission levels did not attract the endorsement of all developing countries. Some, like China, supported the proposal, while others, including prominent developing states like Brazil, Malaysia, and Mexico, were non-committal, and a few, like Saudi Arabia, vigorously opposed it.⁷⁰ Saudi objections

⁶⁹ 'India Throws Down the Gauntlet', Eco, Issue 2, 20 June, 1991, p. 2.

⁷⁰ On different approaches to equity in the allocation of greenhouse emission rights, see Barry D. Solomon and Dilip R. Ahuja, 'International Reductions of Greenhouse-Gas Emissions', Global Environmental Change, Vol. 1, No. 5, 1991, pp. 343-50; see also, Michael Grubb, The Greenhouse Effect: Negotiating Targets, (London: The Royal Institute of International Affairs, 1989).

were inevitable - a relatively small population and high greenhouse emissions from its production and use of fossil fuels meant that Saudi per capita emissions were very high. Consequently, a per capita ceiling would require Saudi Arabia to make drastic reductions, hurting its economy and reducing the living standards of its people.

India's stand that Southern states could not accept any legal obligations was also not supported by all developing countries. The AOSIS states, as we have seen, were keen to have a strong convention with commitments by all states to tackle climate change. Brazil and some other Latin American countries also generally pronounced themselves ready to accept obligations, albeit on a "differentiated" basis from the North.

Divisions within the South also extended to other issues. The very first meeting of the G-77 produced differences over the chairmanship of the group. Ghana, as chairman of the G-77 in New York, sought the chairmanship of the group in Geneva as well. Malaysia, as chairman of the G-15 group in Geneva dealing with environmental issues, also staked its claim to chairmanship. The issue was resolved by inviting Malaysia to head a drafting group to report to the G-77 as a whole. The drafting exercise, however, was unsuccessful. The Latin American states, led by Brazil, pointed to the wide differences within the G-77, particularly highlighting the vehement opposition of the oil producing countries to serious measures to tackle climate change, and expressed their view that any text agreed would necessarily be a very weak compromise which could not serve as a reasonable basis for negotiations. They therefore opposed the presentation of a common text by the G-77 at this stage, and did not participate fully in the drafting exercise.

The differences within the G-77, the Indian delegation acknowledged, meant

it was “unable to make much of an impact as a group”.⁷¹ In the event, its usefulness “lay largely in providing a forum for sensitizing member delegations to important issues and the rationale of our approach”.⁷²

The North also was not entirely united at the second session of the INC. One of the major issues on which it was unable to come up with a common position was the question of commitments to stabilize and reduce greenhouse emissions. Although most Northern states had already pledged to stabilize their emissions at 1990 levels by 2000, the US remained adamant about not accepting any targets.⁷³ In fact, soon after the first session of the INC, the US had announced an energy strategy which emphasized reduced dependence on imported energy and increased domestic production, and which paid relatively little attention to energy conservation and renewable sources of energy.⁷⁴ Clearly, the US felt less of a sense of urgency with regard to tackling climate change as compared to other developed countries.

A proposal by the EC and Japan at the second session for a ‘pledge and review’ process was widely seen as an effort to accommodate the US.⁷⁵ Under this process, all states would commit themselves to establish policies and strategies to limit their greenhouse emissions. They would be obliged to report on the measures taken by them, and these reports would be the subject of formal review. Specific commitments, such as the stabilization by the developed countries of their carbon

⁷¹ Confidential sources.

⁷² Ibid.

⁷³ C. Boyden Gray and David B. Rivkin, Jr., ‘A “No Regrets” Environmental Policy’, *Foreign Policy*, No. 83, Summer 1991, pp. 47-65.

⁷⁴ US Department of Energy, National Energy Strategy: First Edition 1991-1992, (Washington, D.C.: Department of Energy, February 1991).

⁷⁵ ‘Intervention of the Netherlands Delegation on Behalf of the European Community and Its Member States, Geneva, 28 June, 1991’. [n.d].

dioxide emissions at 1990 levels by 2000, or commitments by all countries to curb deforestation, would be the subject of separate protocols.

The view of many developing countries was that the EC proposal offered the US the opportunity to sign up to a convention with vague commitments, while rejecting protocols involving specific commitments. They criticized the EC for not insisting on firm targets for stabilization and reduction of greenhouse gases.

India opposed the 'pledge and review' proposal on the grounds that it would impose legal obligations on the developing countries, which was unacceptable. Indian negotiators also feared that the review process could evolve into an intrusive mechanism whereby the North would be able to interfere in the national policies of the developing countries, especially in important sectors such as energy and industry, through, for instance, the use of conditionalities in aid.⁷⁶

The second session also saw preliminary discussions on the questions of financial resources and technology transfer, which were to divide North and South rather sharply. All states were in general agreement that the developing countries would need financial resources and technology to meet their obligations under a climate convention.⁷⁷ There were differences between the North and the South, however, over the nature of the financial mechanism which would transfer resources, and the terms on which technology transfer would take place.⁷⁸ These were elaborated in more detail at the third session of the INC.

⁷⁶ Desiraju interview.

⁷⁷ UN, General Assembly, Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of its Second Session, Held at Geneva from 19 to 28 June, 1991, A/AC.237/9, 19 August, 1991, p. 14.

⁷⁸ Ibid., pp. 14, 15.

(d) The Third Session of the INC

The general approach adopted by India for the second session of the INC was approved for the third session as well, by a meeting of the Committee of Secretaries (COS) on 6 August, 1991.⁷⁹ Significantly, the COS also approved preliminary thoughts of the MEA and the MOEF on alternative options in case the North refused to make concessions over the questions of financial resources, technology transfer, and targets for greenhouse emission curbs. The MEA proposed that

[O]ur 'non-paper' calls for major steps on the part of developed countries to reduce their emissions. We may show flexibility on this point if the EC and the US ultimately agree on a weak and general convention, provided that no unfair legal 'obligations' are imposed on us.⁸⁰

The MOEF argued that

[O]ur optional position would be a framework convention as a formal recognition of the problem, expression of concern to develop common ground on the nature of the scientific issues involved, and establish coordination in international research and develop endogenous capability.⁸¹

The COS appears to have endorsed the views of the MEA and the MOEF with the background of India's economic vulnerability very much in mind. This impression is reinforced by its instructions to the Indian delegation that "care should be taken to ensure that we do not get isolated in the international fora".⁸² It also instructed the MOEF to bring up a note for the Cabinet Committee on Political Affairs (CCPA), since negotiations were now entering a complicated and perhaps

⁷⁹ Confidential sources.

⁸⁰ Confidential sources.

⁸¹ Confidential sources.

⁸² Confidential sources.

decisive phase.

The third session of the INC, held in Nairobi from 9 to 20 September, 1991, witnessed little change in the developed countries' position regarding the need for universal obligations under the climate convention, and the utility of the 'pledge and review' concept.⁸³ India reacted strongly to the North's perceived inflexibility. It rejected legal obligations for the developing countries, opposed the 'pledge and review' concept, and continued to make reference to the notion of convergence of per capita greenhouse emissions. It also made a significant tactical move, in offering that the developing countries might be prepared to implement specific projects to reduce their greenhouse emissions, provided the full incremental costs of such projects were met by the North. Thus,

a clear differentiation must be made between developed countries with excessively high per capita emission levels, who are responsible and liable for inducing climate change, and other countries who do not have such a liability.

... Developing countries have no legal liability or responsibility for climate change. Nevertheless, they may accept a contractual commitment to undertake specific projects, in accordance with their national development plans and priorities, where the full incremental costs are met by provision of new and additional financial resources from the developed countries. This would be in the nature of a contractual and conditional commitment. Developing countries would be responsible for proper implementation of such projects but their national policies in regard to energy, etc., cannot be a subject of this Convention since they have no legal liability for inducing climate change. Bringing the national policies of these countries within the purview of the Convention would amount to shifting on to them part of the responsibility and liability of countries with excessively high emission levels. Any attempt to pressurise or impose conditionalities on them to change their national policies would be an inadmissible

⁸³ UN, General Assembly, Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of its Third Session, Held at Nairobi from 9 to 20 September, 1991, A/AC.237/12, 25 October, 1991, pp. 18, 19; Debora MacKenzie, 'Storm Clouds Gather Over Climate Talks', New Scientist, Vol. 131, No. 1787, 21 September, 1991, p. 15.

interference in their internal affairs since, I repeat, they have no legal liability or responsibility for climate change.⁸⁴

India's strong response was welcomed by a number of developing countries. However, differences within the G-77 remained over aspects of India's position. Thus, the small island states continued to indicate their desire for strong commitments on the part of all states. Some of the Latin American states also indicated their willingness to accept some obligations, including, if necessary, a review of their national plans. Mexico, one of the countries so inclined, explained to the Indian delegation that its stance was partly dictated by its preference for multilateral scrutiny of its plans, rather than unilateral reviews by the developed countries, particularly its powerful neighbour, the US.⁸⁵

The South was more strongly united over the questions of technological and financial resource transfers. The developing countries, clearly drawing inspiration from the provisions of the amended Montreal Protocol, stressed that their ability to meet commitments under the framework convention would depend on technology transfer and the provision of financial resources by the North.⁸⁶ The North, however, insisted that such transfers would depend on a commitment by the developing countries to implement their obligations.⁸⁷

A number of developing countries insisted on a preferential, concessional and non-commercial basis for technology transfer.⁸⁸ They justified their demand primarily on the grounds that the North was mainly responsible for causing climate

⁸⁴ MOEF, 'Intervention of the leader of the Indian delegation on 'Commitments on Sources and Sinks' (Agenda item 2(a))'. [n.d].

⁸⁵ Confidential sources.

⁸⁶ A/AC.237/12, p. 19.

⁸⁷ Ibid., p. 19.

⁸⁸ Ibid., p. 19.

change, and consequently was obliged to make amends. The North, they argued, ought to transfer environmentally sound technologies at cost. Furthermore, it ought to bear the full incremental costs of adoption of such technologies, such as the costs of enforced idleness of production plants and retraining of workers. Private firms in the North which developed the relevant technologies would legitimately want to profit from their inventions, but it would be the responsibility of Northern governments to find a way of compensating these firms.

The industrialised countries predictably rejected this line of argument, and stressed their inability to interfere with the operations of private enterprises. The private sector, they argued, played a crucial role in devising solutions to global environmental problems. It was therefore necessary to respect its intellectual property rights. The developed countries were, however, amenable to references to the “fair and most favourable” transfer of technology; this imposed few obligations on them, and had no legal implications for their national laws on intellectual property rights.

Two distinct options also emerged for a mechanism to provide financial resources to the developing countries.⁸⁹ The option of establishing a separate financial mechanism under the authority of the parties to the convention was strongly supported by the developing countries. The developed countries, however, tended to support the second option, which favoured the use of the existing World Bank/UNEP/UNDP Global Environment Facility (GEF). The GEF, a French initiative, later supported by Germany and other donor countries, was launched in 1991 to provide additional concessional funding for environmental activities of global

⁸⁹ Ibid., p. 22.

concern, particularly in the developing countries.⁹⁰ The only common element in the two options was the view that the parties to the climate convention should provide the necessary policy direction to the financial mechanism.⁹¹

India and the other developing countries saw several advantages in a separate, democratically administered fund over the GEF.⁹² The most important was that a separate fund would provide an equal voice to beneficiaries and donors, and would provide for the funding of activities according to the priorities of the recipient countries. The GEF, on the other hand, was perceived to follow World Bank operating procedures and was dominated by the donor countries from the North. Second, contributions to a fund set up under the convention could be made obligatory, and the adequacy and nature of the resources to be provided by the developed countries could be specified in the convention. Contributions to the GEF, however, were voluntary. Finally, a separate fund would give recipient governments control over the resources channelled from it, whereas the disbursements made by the GEF were not only through governments but also non-governmental organisations and other agencies.

Besides the above factors, discussions during the third session between Indian delegates and officials of UNEP, which was coordinating the scientific work of the GEF, revealed differences of opinion between the different agencies in the GEF, over issues like project selection criteria. In its contribution to the discussions on the GEF, therefore, the Indian delegation commented on the lack of transparency, objectivity

⁹⁰ UNEP, Annual Report of the Executive Director - 1991, (Nairobi: UNEP, 1992), p. 4.

⁹¹ A/AC.237/12, p. 22.

⁹² Rajamani interview; Desiraju interview.

and coordination in the GEF's functioning, further underlining its unsuitability as a financial mechanism for the framework convention.

The developed countries, for their part, emphasized the GEF's advantages. It would minimize the creation of new bureaucracies. It would use the World Bank's competence in efficient allocations of funds deposited with it. And as a unitary funding mechanism, it would enhance the overall funding potential for activities aimed at addressing global environmental problems, while minimizing the overhead costs. Some developed countries, however, such as the Netherlands and the Nordic states, responded to criticism of the GEF by acknowledging the need to amend its governance arrangements.

(e) Policy Statement of the OECD

OECD Ministers meeting in Paris on 2 and 3 December, 1991, shortly before the fourth session of the INC, issued an important policy statement which clarified the North's stance on several environmental issues.⁹³ The OECD statement acknowledged "the responsibility that OECD countries bear ... in view of the pressures their societies place on the global environment and of the technologies and financial resources they command",⁹⁴ and recognised "in particular that OECD countries must demonstrate international leadership and continued commitment ...".⁹⁵ It called for a partnership between all states to resolve global environmental

⁹³ Meeting of OECD Ministers on Environment and Development, Policy Statement, Paris, 2-3 December, 1991.

⁹⁴ *Ibid.*, para. 5.

⁹⁵ *Ibid.*, para. 6.

issues “based on mutual commitments by all countries in the light of their relative capacities and responsibilities”.⁹⁶

The OECD statement thus revealed an acknowledgement by the North that it had a special responsibility to show leadership. This, however, did not constitute an admission of “main responsibility”. Moreover, by calling for “mutual commitments by all countries”, the North indicated that it expected developing countries to cooperate with it in resolving environmental problems, and was unwilling to excuse them from all obligations.

The OECD Ministers also committed themselves “to substantial action on the enhancement and protection of greenhouse gas sinks and limitation of emissions of greenhouse gases aiming in particular, as a first step at a stabilisation, individually or collectively, of CO₂ emissions”.⁹⁷ Significantly, no target date for stabilisation was agreed. The OECD’s admission that “most OECD countries have committed themselves to stabilise CO₂ emissions, individually or collectively, in general by the year 2000 at 1990 levels”, and that “those countries make a strong appeal to other OECD countries to do the same”, clearly revealed the difficulty it was having in coming up with a common position on targets.⁹⁸ The US obviously posed the biggest obstacle in this regard, with sceptics in the White House, deeply influenced by the uncertainties surrounding climate change, preferring to adopt a ‘wait and see’ approach rather than an ‘act now’ policy.⁹⁹

The OECD statement also acknowledged the need to provide financial

⁹⁶ Ibid., para. 4.

⁹⁷ Ibid., para. 6.

⁹⁸ Ibid., para. 6.

⁹⁹ Richard A. Kerr, ‘Greenhouse Science Survives Sceptics’, *Science*, Vol. 256, 22 May, 1992, pp. 1138-40.

resources to the developing countries. It said, “[F]or developing countries to play their full part in coping with global environmental problems, Ministers consider that appropriate additional financial resources must be made available to them as part of a strengthened partnership”.¹⁰⁰ It stressed that

a modified GEF under appropriate governance should play a leading role as the multilateral mechanism to provide additional financial resources to developing countries in the resolution of environmental problems of global significance. In this regard, most OECD countries will provide new financial resources.¹⁰¹

Significantly for the developing countries, the OECD showed an apparent willingness to restructure the GEF. However, the reference to “most OECD countries” with regard to the provision of new and additional financial resources to the South reflected divisions in the OECD. The US, in particular, had no wish to commit itself to the indefinite provision of possibly large sums of money to the South on the basis that these needed always to be “new and additional”. Moreover, since it rejected the notion of “main responsibility”, it saw no reason for it or any other developed country to provide financial resources to the South when these could be borrowed at commercial rates from private banks, as well as from alternative sources such as multilateral development institutions.

On the issue of technology transfer, the OECD states were not willing to guarantee the transfer of environmentally sound technology to developing countries. The most they were willing to do was to “expand technology co-operation”, to “facilitate” the transfer of technologies, and to “enhance” the capacities of developing countries to use and develop technologies.¹⁰² All this, moreover, they would do

¹⁰⁰ OECD, Policy Statement, para. 11.

¹⁰¹ *Ibid.*, para. 11.

¹⁰² *Ibid.*, para. 12.

“while taking full account of the need to protect intellectual property rights”.¹⁰³

In sum, the OECD statement revealed some movement towards the South’s position on the question of new and additional financial resources, and in terms of restructuring the GEF. However, on the issues of the North’s “main responsibility”, emission targets, developing country obligations, and technology transfer, the statement reaffirmed the established Northern position.

(f) The Fourth Session of the INC

The Indian Cabinet met on 3 December, 1991, shortly before the fourth session of the INC, to consider for the first time India’s policy in the climate negotiations. An MOEF note highlighted the main elements in India’s negotiating stance, including the concept of per capita equity, India’s opposition to any international review of the national policies of developing countries, India’s willingness to consider contractual commitments, and its demand for a separate fund under the climate convention. The note argued that despite the South’s general vulnerability to pressure from the North, there was nevertheless a basis for pursuing demands that might conflict with the North’s interests. Thus,

[T]hough the changed international balance of power and growing indebtedness reduces flexibility in negotiations, the likely adverse effect of global climatic changes on the developed countries and commonality of interests perceived through threats to the environment may provide some leverage to the developing countries.¹⁰⁴

The Cabinet, apparently without much discussion, gave its full approval to the policy

¹⁰³ Ibid., para. 12.

¹⁰⁴ Confidential sources.

outlined in the MOEF note.

The fourth session of the INC, held in Geneva from 9 to 20 December, 1991, saw a continuation of deep divisions between the North and the South over the issues of the North's "main responsibility", developing country obligations, technology transfer, and a financial mechanism for the framework convention. These differences were so sharp that it appeared unlikely they would be resolved by the fifth and final session of the INC, scheduled for February 1992. The General Assembly therefore made provision for a short resumed fifth session in New York in April 1992.¹⁰⁵

A more solid Southern consensus than had been the case thus far began to emerge at the fourth session of the INC, and it integrated practically all the main elements in India's policy. The only major plank of Indian policy which did not prove acceptable to the South as a whole was the concept of per capita equity. This concept, as seen earlier, had already been received with scepticism by several developing countries, particularly the oil producing countries and the rapidly industrialising economies. At the fourth session too, there was no unity amongst the developing countries over the concept. Consequently, after this session, India dropped the concept.

The main responsibility argument was reiterated at the fourth session by the G-77. It was important because it was really the hook from which most of the South's demands hung. It therefore argued that while all states had an obligation to protect the climate, this obligation

¹⁰⁵ UN, General Assembly, Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of Its Fourth Session, held at Geneva from 9 to 20 December, 1991, A/AC.237/15, 29 January, 1992, p.4.

shall be carried out with different time frames for implementation in accordance with common but differentiated responsibilities and capabilities between developing and developed countries and taking fully into account that the largest part of emissions of greenhouse gases have been originating from developed countries and those countries have the main responsibility in combating climate change and the adverse effects thereof.¹⁰⁶

Although the North predictably rejected the notion of main responsibility, the developing countries found the argument useful to stress that the same order of commitments could not be expected from them in the climate convention, as those that might be expected from the North. They had several reasons, besides the question of fairness implicit in the responsibility argument, for worrying about the commitments that might be imposed upon them. These were outlined by the G-77 in a joint statement, and essentially reflected the developing countries' reluctance to divert scarce resources from their development priorities, and their fear that they might not be able to meet the obligations they were placed under and might consequently attract punitive sanctions from the North.

The resource scarcity argument was reflected in the G-77 view that

[P]rotection of the global climate against human induced change should proceed in an integrated manner with economic development in the light of the specific conditions of each country, without prejudice to the socio-economic development of developing countries.¹⁰⁷

The South's fear of global standards for environmental protection set by the North was evident from this statement:

[M]easures to guard against climate change should be integrated into national development programmes taking into account that environmental standards valid for developed countries may have

¹⁰⁶ 'Joint Statement of the Group of 77 made by its Chairman Ghana at the Fourth Session of the INC for a Framework Convention on Climate Change, Geneva, 9-20 December, 1991'. [n.d].

¹⁰⁷ Ibid.

inappropriate and unwarranted social and economic costs in developing countries.¹⁰⁸

Its fear of sanctions arising from failure to meet its obligations was reflected in the statement that “[E]xcept on the basis of a decision by the Conference of Parties no country or group of countries shall introduce barriers to trade on the basis of claims related to climate change”.¹⁰⁹

Some developing countries like India and China took the view that the North, by trying to impose obligations on the developing countries despite its own main responsibility, was shifting the burden of tackling climate change and undermining their sovereignty. They therefore rejected any monitoring, for instance by special committees proposed by the North, of their fulfilment of obligations under the convention.¹¹⁰

The most many developing countries were willing to concede by way of commitments were contractual commitments for specific projects, the offer India had made at the previous session. Thus, a proposal by 43 developing countries, including Brazil, China, Ghana, India, Indonesia, Kenya, Mexico, Malaysia, Nigeria, and Tanzania, said that the developing countries would,

in accordance with their national development plans, priorities, objectives and specific country conditions, consider taking feasible measures to address climate change, provided that the full incremental costs involved are met by the provision of new, adequate and additional financial resources from the developed country Parties.¹¹¹

The developed countries, while willing to help the South meet some of its

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ A/AC.237/15, p. 11.

¹¹¹ UN, General Assembly, Proposal on the Entire Section on Commitments by 43 Developing Countries, A/AC.237/WG.I/L.7, 18 December, 1991, p. 3.

obligations, were sceptical about the demand that the full incremental costs of measures taken by the developing countries be met by the North. They argued that many measures, such as improving energy efficiency, were beneficial to the economic development of the developing countries, and were in their own interest to implement. Such measures ought not to be seen, as the South seemed to be doing, as irksome impositions taking away precious resources from national priorities, but as useful economy-building measures the South needed to adopt in the natural course of events, regardless of climate change. Furthermore, while they were willing to make reporting requirements under the convention flexible for the developing countries, both in terms of frequency of reporting and content, they were unwilling to relax these requirements altogether.

Thus, the divisions between the North and the South over developing country obligations were quite sharp. The Indian delegation reported to the Indian government that

[T]he developed countries are seeking a Convention weak on reductions of emissions (as it affects them) but strong on controls (as it will affect us), and in this manner while making no 'Commitments' impose 'Mechanisms' that will curtail our sovereignty and our initiatives for use of natural resources.¹¹²

North-South differences also persisted over the question of technology transfer.¹¹³ The G-77 declared that

transfers of and access to environmentally safe and sound technology on most favourable, concessional, and preferential terms shall have to be channelled to developing countries in order to enable their full participation in global efforts for the protection of the climate.¹¹⁴

¹¹² Confidential sources.

¹¹³ A/AC.237/15, p. 10.

¹¹⁴ 'Joint Statement of the Group of 77 made by its Chairman Ghana at the Fourth Session'.

The North, however, was not prepared to guarantee the transfer of relevant technologies to the South, and maintained the stand outlined in the OECD statement issued before the fourth session.

Finally, the question of a financial mechanism for the framework convention also continued to divide North and South,¹¹⁵ although these differences had narrowed with the North's indication in the OECD policy statement before the fourth session of its willingness to restructure the GEF. The South still favoured a separate fund for the framework convention, and called upon the developed countries to

[T]hrough their assessed contributions to the International Climate Fund, specific to this Convention, expeditiously mobilize and provide on a grant basis new, adequate and additional financial resources to meet the full incremental costs of developing country Parties to take measures provided for in this Convention; to cover the costs to developing countries of adaptation and mitigation measures that may be needed as a result of the adverse consequences of climate change and, the direct and indirect social and economic costs to developing countries that may result from the implementation of the Convention. The International Climate Fund shall operate under the authority of the Conference of the Parties and shall be distinct and independent from other funds and international financial institutions.¹¹⁶

The developed countries, however, continued to favour the GEF, albeit a modified GEF.

Thus, with only one session of the INC left to conclude negotiations on a framework convention, fundamental issues still divided North and South. The main sticking points were the degree of responsibility the North was prepared to accept, the nature of the obligations the South was willing to accept, the assistance that the North was willing to provide to the South, and the stake that the South would have in the management of a financial mechanism for the framework convention.

¹¹⁵ A/AC.237/15, p. 10.

¹¹⁶ A/AC.237/WG.I/L.7, p. 2.

(g) Solidarity Amongst the Developing Countries

The strengthened solidarity displayed by the developing countries at the fourth session of the INC was also evident in statements issued by two regional conferences in the South just prior to the fifth session of the INC. These were the Manaus Declaration on UNCED,¹¹⁷ adopted on 10 February, 1992, by the Presidents of the Amazonian states of Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela, and the Singapore Resolution on Environment and Development,¹¹⁸ adopted on 18 February, 1992, by the ASEAN Ministers responsible for the environment.

The Manaus Declaration urged the North, “mainly responsible for the cumulative concentration of greenhouse gases, to adopt concrete measures to reverse those trends”. Developing countries, it said, “will only be able to join the international efforts towards climate protection if they are assured of the necessary financial and technological resources for the adoption of a new sustainable development model”. On technology transfer,

[D]ue to financial and institutional limitations of developing countries, access to these technologies should be on a preferential rather than on a purely commercial basis; considering the main responsibility of developed countries for the environmental deterioration as well as the common interest of the international community in the protection of the global environment.

Finally, on the question of a financial mechanism,

¹¹⁷ Manaus Declaration on the United Nations Conference on Environment and Development, 10 February, 1992; Christina Lamb, ‘Amazon Destruction Blamed on First World’, Financial Times, 12 February, 1992, p. 4; ‘Amazon Nations Name Their Price’, New Scientist, Vol. 133, No. 1810, 29 February, 1992, p. 15.

¹¹⁸ Singapore Resolution on Environment and Development, 18 February, 1992; ‘Political Clean-Up’, Far Eastern Economic Review, 5 March, 1992, pp. 10-1.

new financial resources should be channelled through appropriate institutional mechanisms, on a concessional basis, without conditionalities, operating in accordance with the priorities of the recipient The representation in these mechanisms and their management should comply with the criterion of equity between developed and developing countries. For all these reasons, it should be understood that the financial mechanism called 'Global Environmental Facility' is a clearly limited and insufficient instrument.

The Singapore Resolution called upon the North to

stabilize and limit the emissions of all greenhouse gases. ... In addition, adequate, new and additional funding must be provided by developed countries, especially those which have been emitting cumulatively large amounts of CO₂, to enable developing countries to meet the full incremental costs of combatting climate change. Technologies to reduce CO₂ emissions shall be made available to developing countries on concessional and preferential terms.¹¹⁹

(h) The Fifth Session of the INC

The climate negotiations made little headway during the fifth session of the INC, held in New York from 18 to 28 February, 1992. The heavily bracketed consolidated text which emerged at the end of this session testified to the wide differences that still existed between states, particularly between the North and the South.¹²⁰ A resumed session from 30 April to 8 May thus became inevitable for the conclusion of negotiations.

Perhaps the most important feature of the fifth session was the apparently increasingly critical role of the US in the negotiation of the framework convention. The US actively opposed the notion that the North had any duty to help developing

¹¹⁹ Ibid., Annex: 'ASEAN Common Stand on the UNCED and Related Issues', para. 1.

¹²⁰ See UN doc. A/AC.237/Misc.20, 28 February, 1992.

countries meet the incremental costs of measures to tackle climate change. It also continued to reject commitments to provide new and additional financial resources to the developing countries, something most other developed states had accepted in the OECD policy statement issued prior to the fourth session of the INC. The US also continued to oppose time-bound programmes for the stabilisation of greenhouse emissions.

The US stance now began to create concerns in the South with regard to the nature of the convention which might emerge if the most influential member of the Northern bloc continued to resist making concessions. If other developed countries like the EC proved unwilling to isolate the US and negotiate a framework convention on their own, then the pressure to modify its position might instead fall on the South. Expressing this apprehension, the Indian delegation reported to the Indian government that

[A]t the present moment the prospects of a successful conclusion of the negotiations in May are not promising. Nevertheless, it is possible that a last minute effort will be made to bridge the differences between the US and the EC by adoption of ambiguous formulation concerning stabilisation and reduction of emissions of developed countries. This could be the basis of an attempt to shift the balance of responsibility from the North to the South.¹²¹

In view of these concerns, and in an effort to put more pressure on the North, the South issued a strong statement during the fifth session:

The Group of 77 and China are extremely dismayed and concerned ... at the slow rate of progress in these negotiations which have almost stalled. The principal reason is because the developed countries have not clearly stated and defined the commitments that they are willing to enter into under this proposed Convention. ... It was our expectation after the fourth INC ... that at this session the developed countries' common position would be before us for a consensus to emerge after

¹²¹ Confidential sources.

negotiations. However, we are halfway in this last session ... without a significant advance and without being in a position to respond optimistically to world expectations.

... The developed countries must clearly indicate the commitments on emissions for stabilization and reduction that they are willing to enter into along with a specific time-table.

Secondly, there is the issue of financial resources. The developed countries have concentrated most of their negotiating energies on the subsidiary question of the institutional modalities for delivering these resources. What is really required as an essential first step is for the OECD countries to signal that the financial resources required to fulfil the objectives for this Convention will be available on an adequate and predictable basis without adversely affecting existing economic assistance inflows. ...

Thirdly, there is the issue of transfer of technology. The developed countries have to give their position as to their willingness to work for a solution whereby the technology needed by the developing countries to environmentalize their development becomes available at terms which will maximize its use.¹²²

The question of a financial mechanism was the only one over which the North and the South moved towards reconciling their differences during the fifth session. The North, as seen earlier, had already indicated its willingness to restructure the GEF; the scope of such restructuring was now spelt out at the fifth session. The Chairman of the GEF, Mohamed El-Ashry, made a special presentation to the INC based on discussions which had taken place at a special GEF participants meeting in Geneva on 14 February, 1992.¹²³ The consensus which apparently emerged at the 14 February meeting was that the GEF could be modified to service the climate convention. The proposal was that the parties to the convention would prepare guidelines on priorities and criteria for project formulation and implementation to be utilized by the implementing agencies, the World Bank, UNDP and UNEP. The

¹²² 'Joint Statement of the Group of 77 and China to the Fifth INC-FCC on 24 February, 1992 in New York'.

¹²³ Mohamed T. El-Ashry, 'Statement to the Fifth INC on a Framework Convention on Global Climate Change', New York, 22 February, 1992.

parties would also determine eligibility criteria for accessing GEF resources. The GEF participants would ensure that the implementing agencies were fully in compliance with these criteria, and would provide routine reports to the parties to the convention on the fulfilment of the functions mandated by them.

The possible reform of the GEF was welcomed by several developing countries. Several others still voiced their support for a separate fund, but the trend now appeared to be towards acceptance of a modified GEF as the financial mechanism for the framework convention.

In sum, besides the question of the financial mechanism, the fifth session brought little by way of consensus over the provisions of the framework convention. It did highlight, however, the crucial role the US would play in determining the outcome of negotiations. If the US remained inflexible, then the South would have to be prepared for the emergence of a convention with weak commitments by the North, and would also need to be cautious about the obligations that might be imposed on it. If, however, the US went along with the other developed countries, the South might yet enjoy some bargaining success.

(i) Restatement of Positions Prior to the Concluding Session of the INC

In an effort to convey to the North their determination to achieve their stated objectives with regard to the climate convention, the developing countries reasserted their interests at several meetings before the final session of the INC. These included the Conference of the South Asian Association for Regional Cooperation (SAARC) Ministers for the Environment in New Delhi, from 8 to 9 April, 1992, and the Second

Ministerial Conference of Developing Countries on Environment and Development in Kuala Lumpur, from 26 to 29 April, 1992.

The SAARC conference, whose participants included India, the Chairman of the G-77, Pakistan, and the small island state of Maldives, noted

with concern that the SAARC region faces grave threats from disturbances in the global environment caused by the industrialised world. Developing countries would be the innocent victims of phenomena such as climate change, which may lead to drastic impacts, including a rise in sea level and disruption in the monsoon pattern. About 250 million people in the SAARC region alone are dependent on coastal resources, directly or indirectly, and their livelihood is physically threatened. The impacts would be particularly severe on the small island nations, as well as on the region as a whole. Protection of the global environment is in the interest of all humankind but the developed countries, in view of their main responsibility for global environmental degradation and their significantly greater financial and technological resources, must bear the main burden of global environmental protection and restoration measures.¹²⁴

The SAARC Ministers reiterated

the fact that the developed countries are responsible for excessive emissions of greenhouse gases, historically and currently, and must take immediate action to stabilise and reduce such emissions. Developing countries should not be expected to undertake such measures in the near future; they can be encouraged through technological and financial resources to take appropriate action within national plans, priorities and programmes, without compromising on the need to pursue development and to meet energy requirements.¹²⁵

The Ministers called for the provision of “adequate, new and additional” funds to developing countries,¹²⁶ transfer of technology on “preferential, non-commercial and concessional” terms to developing countries,¹²⁷ and the establishment of a

¹²⁴ Joint Communique of the SAARC Ministers of Environment, New Delhi, 8-9 April, 1992, para. 6.

¹²⁵ *Ibid.*, para. 11.

¹²⁶ *Ibid.*, para. 8.

¹²⁷ *Ibid.*, para. 9.

“distinct” funding mechanism for the convention on climate change.¹²⁸

The Kuala Lumpur Declaration on Environment and Development, adopted by 55 developing countries, called for the provision of “new and additional” funds to developing countries,¹²⁹ and for “transfer of technology on preferential and concessional terms to developing countries, taking into consideration that Intellectual Property Rights should not hinder the transfer of technology to developing countries”.¹³⁰ The declaration also called for the establishment of a fund under the framework convention, which would be “transparent”, “democratic in nature, with an equal voice for all parties in setting project eligibility criteria, project selection, and the authority to release funds, enabling an equitable balance between developed and developing countries”, “provide access and disbursement to all developing countries without any conditionality”, and “provide for funding of activities according to the priorities and needs of the developing countries”.¹³¹

The developing countries thus made no new offers to the North, and appeared to rule out any modifications to their position. The US, on whose stance the outcome of negotiations now largely hinged,¹³² also took the opportunity before the final session of the INC to clarify its position. In a document distributed to embassies entitled Statement on US Views, the US said that it continued to believe that

¹²⁸ Ibid., para. 8.

¹²⁹ Second Ministerial Conference of the Developing Countries on Environment and Development, Kuala Lumpur Declaration on Environment and Development, 29 April, 1992, para. 12.

¹³⁰ Ibid., para. 14.

¹³¹ Ibid., para. 12.

¹³² Paul Lewis, ‘US Accused of Endangering Environment Talks’, International Herald Tribune, 25 March, 1992; ‘EC Environment Aide Assails Bush’, International Herald Tribune, 26 March, 1992; ‘Japan Presses US on Emissions Accord’, International Herald Tribune, 27 March, 1992.

considerable uncertainties were associated with the science behind global warming. Precise evaluations of the impacts of climate change, moreover, were “not likely to be available for a decade or more”. Consequently, it considered more research on the science and economics of climate change to be essential.

Despite the uncertainties, however, the US was “firmly committed to taking economically-efficient actions to mitigate climate change”. In the convention, it suggested,

industrialized countries would indicate actions they will take consistent with national circumstances and provide estimates of the impacts of their actions over an agreed time period, relying on agreed methodologies for estimating these impacts. By reporting on actions in an open and transparent process, all parties would be able to share information and experience, and learn from each other. Public scrutiny will provide a strong incentive for taking meaningful actions with maximum benefits for climate and other reasons.

The US did not mention, and clearly did not envision, targets for the North for stabilisation or reduction of greenhouse emissions. Its preference for a convention with weak commitments by the North was obvious in its reliance on “public scrutiny” to provide “a strong incentive” for meaningful actions rather than legally binding obligations.

With regard to the developing countries, the US proposed that they would also prepare national reports, which would

describe relevant national circumstances and assess their current emissions and vulnerability to climate change. ... In those reports, countries would identify specific projects and programs with benefits for climate as well as their economic development. They would also identify technological and financial resource needs related to implementing such projects.

The US, however, did not guarantee that these needs would be met. It supported “technology cooperation” with developing countries, but offered no guarantees of

technology transfer to developing countries. Technology cooperation, it stressed, “relies heavily on the creativity and dynamism of the private sector”. Moreover, “the successful transfer of knowledge, know-how, or equipment depends upon a two-way relationship based on mutual interests and benefits”. The implication was that it continued to oppose any interference in the process of transfer of technology on commercial terms by the private sector.

The US thus reiterated its opposition to any compromise with the South on the latter’s demands for technological and financial resource concessions by the North. The only concession it appeared to make was that corresponding to the minimal commitments it sought for itself, it would not seek to place any major obligations on the South either.

Referring to the US position, the leader of the Indian delegation commented that “the US now appears to be ready to negotiate a framework convention with minimal obligations for both developed and developing countries”.¹³³ His assessment was that

the obligations of the developed countries ... fall far short of acceptance of a time-bound stabilisation programme, followed by reduction of emissions. While this is unfortunate, we may accept this weak commitment, provided no attempt is made to revert to proposals for reviewing national plans/strategies of developing countries. A suitable provision would, of course, have to be added in respect of financial and technological transfers to developing countries.

Dasgupta’s comments reflect India’s willingness at this stage to accept a convention with weak commitments by the North. This did not constitute a significant shift in Indian policy, since such an option had already been reckoned to be acceptable by the MEA and the MOEF soon after the second session of the INC, and

¹³³ Confidential sources.

had been approved by the Committee of Secretaries. What it does reflect is the considerable influence of the US in this crucial phase of negotiations. Dasgupta did not appear to anticipate that the developing countries would muster sufficient bargaining power to force the US to modify its stance. Thus, going into the final session of the INC, India was pessimistic about the outcome of negotiations.

(j) The Final Session of the INC

It quickly became clear at the final session of the INC that the US would prevail in its opposition to targets for greenhouse gas stabilization and reduction. The US increased the pressure on other Northern states to accept its stand by indicating that President Bush's attendance at the Rio summit would depend to a considerable extent on the nature of the framework convention agreed at New York.¹³⁴ In the event, the Northern states bowed to US wishes because they were reluctant to have a convention without the largest greenhouse gas producer in the world participating in it. Some of them, notably Portugal, on behalf of the EC, Germany, and Japan, publicly stated that the commitments under the convention fell short of their expectations, but indicated their willingness to accept them as a preliminary step.

Consequently, the text presented by the INC Chairman to the final session as the basis for negotiations imposed very weak obligations for greenhouse gas

¹³⁴ Christina Lamb, 'US Presence at Earth Summit Vital - Collor', Financial Times, 27 March, 1992, p. 6; Paul Lewis, 'Planners Dispute Bill for Global Cleanup', International Herald Tribune, 30 March, 1992, p. 3; Christina Lamb, 'Rio Will Be Ready, the Brazilians Promise', Financial Times, 16 April, 1992, p. 6.

stabilization on the developed countries.¹³⁵ These, moreover, were privately declared by the Chairman to be non-negotiable, since any revision would be unacceptable to the US.

In the Chairman's view, none of the formulations in his text were new, and all had been debated earlier. Therefore, to speed up negotiations, he confined discussions on his text to an enlarged bureau of about 25 states, comprising all the 'key' players. Only when all the issues had been resolved was the package presented to the plenary session. The majority of states thus saw the final text only hours before its adoption.

The Chairman's text had both positive and negative aspects from the South's point of view. On the positive side, the South's demand that there should be no specific review of its national plans and strategies to deal with climate change was met. Compliance by the developing countries with their obligations under the convention was made "dependent upon the effective implementation of the provisions of the Convention related to financial resources and transfer of technology".¹³⁶ The South's demand for "adequate, new and additional financial resources" was acknowledged.¹³⁷ The South's views on a financial mechanism for the convention were partly taken into account by providing that the financial mechanism would have "a balanced representation of all Parties and a transparent system of governance",¹³⁸ and would "operate under the authority of the Conference of the

¹³⁵ UN doc. A/AC.237/CRP.1/Add.2, 30 April, 1992, Article 4, 'Commitments', para. 4.

¹³⁶ Ibid., para. 6.

¹³⁷ Ibid., para. 4.

¹³⁸ UN doc. A/AC.237/CRP.1/Add.6, 30 April, 1992, Article 11, 'Financial Mechanism', para. 2.

Parties that shall decide on its overall policies”.¹³⁹

On the negative side, the Chairman’s text contained very weak commitments by the North on greenhouse gas stabilisation. It obliged the developing countries to cooperate with the North to “[D]evelop and, as appropriate coordinate in order to avoid distortions in international trade, relevant economic and administrative instruments aimed at limiting net emissions of greenhouse gases”.¹⁴⁰ It provided for the establishment of a subsidiary body for implementation which would review “information relevant to the implementation of the Convention”, and facilitate “consultation among Parties with regard to such information”.¹⁴¹ It contained no guarantee of technology transfer by the North, committing it only to “take all practicable steps to promote, facilitate and finance, as appropriate, access to and transfer of environmentally-sound technologies and know-how”.¹⁴² The South’s demand that the North meet the full incremental costs incurred by it in undertaking measures to deal with climate change was not met, and the text only provided for the meeting of “agreed” incremental costs.¹⁴³ With regard to the financial mechanism, the text provided for its administration to be entrusted to “one or more existing international organisations”,¹⁴⁴ and did not establish the independent fund demanded by the South.

¹³⁹ Ibid., para. 1.

¹⁴⁰ UN Doc. A/AC.237/CRP.1/Add.2, 30 April, 1992, Article 4, ‘Commitments’, para. 1(j).

¹⁴¹ UN Doc. A/AC.237/CRP.1/Add.6, 30 April, 1992, Article 10, ‘Subsidiary Body for Implementation’, para. 2.

¹⁴² UN Doc. A/AC.237/CRP.1/Add.2, 30 April, 1992, Article 4, ‘Commitments’, para. 2.

¹⁴³ Ibid., para. 4.

¹⁴⁴ UN Doc. A/AC.237/CRP.1/Add.6, 30 April, 1992, Article 11, ‘Financial Mechanism’, para. 1.

The Indian delegation was concerned by the large number of issues on which its interests and those of the South did not appear to be met. It sought instructions from New Delhi on the extent to which it should offer opposition to the Chairman's text. Instructions were issued by the Cabinet on 4 May, 1992,¹⁴⁵ directing the negotiating team to coordinate its position with other prominent developing countries like China and Brazil, and to ensure that Indian interests were protected. If, however, this proved difficult, then the delegation was to make its position known without stridency, and to keep the door open for further discussion at Rio.

The desire of the INC Chairman and many states to conclude the climate negotiations at New York, however, ruled out any question of continuing them at Rio, and this was pointed out by the Indian delegation. Further instructions, approved by the Prime Minister, were subsequently conveyed to the delegation by Environment Minister Nath, to the effect that if India's priority concerns were not met, then India could stay out of the climate convention, provided it was not isolated and at least China supported it.¹⁴⁶

Eventually, concessions were made to the Indian viewpoint, and the Indian delegation was able to claim that India's interests had been protected. In truth, though, Indian negotiators had little choice but to accept the convention which emerged at the end of the INC session. India received practically no support from other developing countries for the idea of staying out of the framework convention if significant changes were not made in the Chairman's text. China, in particular, showed no inclination to boycott the convention. India, consequently, would have

¹⁴⁵ Confidential sources.

¹⁴⁶ Confidential sources.

been isolated had it chosen to stay out of the convention.

Many Southern states were of the view that they could live with any convention, so long as it did not impose serious constraints on them.¹⁴⁷ Some, particularly the small island states, felt that by joining the convention, they would be able to influence the future evolution of measures to combat climate change. In general, the developing countries preferred a multilateral approach to tackling climate change; such an approach would diminish the risk of unilateral actions, including trade sanctions and aid conditionalities, that might be taken by the developed states against developing countries which did not join the convention. In sum, very few developing countries were willing to even consider the possibility of boycotting the climate convention.

The Indian delegation was thus forced to rely on energetic lobbying with influential developed and developing countries, in order to secure changes in the Chairman's text. Eventually, with support from other developing countries on specific issues, India was able to make some gains. The clause concerning coordination of economic and administrative instruments was deleted. With regard to the subsidiary body for implementation, an Indian amendment was accepted, confining the body's review function only to information provided by the developed countries as to the fulfilment of their commitments. Information provided by the developing countries would not be considered on a country by country basis, but would be assessed in terms of "the overall aggregated effect of the steps taken by the Parties in the light

¹⁴⁷ MacNeill et al make the perceptive comment that "[T]he fact is that empty framework conventions are politically very attractive. ... they allow national leaders to gain enormous political credit at no political cost. ... The public could easily be deceived into believing that something significant had been done". [MacNeill et al, Beyond Interdependence, pp. 114-5].

of the latest scientific assessments concerning climate change”. On the question of incremental costs, the Northern states accepted the compromise formulation of “agreed full incremental costs”. With regard to the financial mechanism, the Northern states succeeded in naming the GEF as an interim financial mechanism, but agreed that it should be “appropriately restructured”.

V. THE FRAMEWORK CONVENTION ON CLIMATE CHANGE

The framework convention emphasized the differentiated responsibilities of the South and the North. It noted that

the largest share of historical and current global emissions of greenhouse gases has originated in developed countries, that per capita emissions in developing countries are still relatively low and that the share of global emissions originating in developing countries will grow to meet their social and development needs.¹⁴⁸

It called for cooperation by all countries in accordance with their “common but differentiated responsibilities and respective capabilities and their social and economic conditions”.¹⁴⁹

The convention called upon the developed countries to “take the lead in combating climate change and the adverse effects thereof”.¹⁵⁰ To assuage Southern fears of Northern environmental ‘neo-protectionism’, it stressed that “[M]easures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on

¹⁴⁸ United Nations, Framework Convention on Climate Change, Preamble.

¹⁴⁹ *Ibid.*, Preamble.

¹⁵⁰ *Ibid.*, Article 3.1.

international trade”.¹⁵¹

The commitments imposed by the convention on the North were relatively weak. In a masterpiece of obfuscation, the developed countries were called upon to adopt national policies that would

demonstrate that developed countries are taking the lead in modifying longer-term trends in anthropogenic emissions consistent with the objective of the Convention, recognizing that the return by the end of the present decade to earlier levels of anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol would contribute to such modification, and taking into account the differences in these Parties’ starting points and approaches, economic structures and resources bases, the need to maintain strong and sustainable economic growth, available technologies and other individual circumstances, as well as the need for equitable and appropriate contributions by each of these Parties to the global effort regarding that objective.¹⁵²

The developed countries were required to communicate to the Conference of the Parties a detailed description of the policies and measures envisaged above, and a specific estimate of the effects on their emissions.¹⁵³ They were required to communicate their respective national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases.¹⁵⁴ In addition, they had to provide details of measures taken by them to provide new and additional financial resources to the developing countries, and to promote, facilitate and finance the transfer of environmentally sound technologies and know-how to other parties, particularly developing countries, to enable them to implement the provisions of the convention.¹⁵⁵

¹⁵¹ Ibid., Article 3.5.

¹⁵² Ibid., Article 4.2(a).

¹⁵³ Ibid., Article 12.2.

¹⁵⁴ Ibid., Article 12.1(a).

¹⁵⁵ Ibid., Article 12.3.

The South was also required to accept several commitments under the framework convention. In common with other parties, developing countries were required to develop, periodically update, publish and make available to the Conference of the Parties, national inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol.¹⁵⁶ They were also required to formulate, implement, publish and regularly update national programmes to mitigate climate change and facilitate adequate adaptation to climate change.¹⁵⁷ They were obliged to communicate specifically to the Conference of the Parties, within three years of entry into force of the convention for them, their respective national inventories of anthropogenic emissions by sources and removals by sinks of greenhouse gases, a general description of the steps taken or envisaged by them to implement the convention, and any other information they considered relevant.¹⁵⁸ The commitments imposed on them were thus fairly general and non-specific, though potentially significant inasmuch as they could lead to greater public scrutiny of their actions in the future.

However, the developing countries managed to add caveats to the convention regarding the extent to which they would be able to effectively implement their commitments - this would

depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.¹⁵⁹

¹⁵⁶ Ibid., Article 4.1(a).

¹⁵⁷ Ibid., Article 4.1(b).

¹⁵⁸ Ibid., Article 12.1.

¹⁵⁹ Ibid., Article 4.7.

The framework convention established a subsidiary body for implementation, comprising government representatives, to assist in “the assessment and review of the effective implementation of the Convention”.¹⁶⁰ It was also to assist the Conference of the Parties “in the precipitation and implementation of its decisions”. It would consider the information available with it in order to “assess the overall aggregated effect of the steps taken by the Parties”, rather than engage in a country by country analysis. The commitments made by the developed countries, however, would be individually reviewed.

On the question of technology transfer, the framework convention provided very weak assurances from the North that it would “take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties ...”.¹⁶¹

On the issue of financial resources, the North was directed to provide “new and additional financial resources” to the developing countries to enable them to comply with their obligations under the convention.¹⁶² The agreed full costs incurred by developing countries in reporting their national inventories of emissions by sources and removals by sinks of greenhouse gases, and other relevant information, were to be met by the developed countries.¹⁶³ The agreed full incremental costs incurred by developing countries in implementing measures to mitigate climate change and to facilitate adequate adaptation to climate change were also to be met

¹⁶⁰ Ibid., Article 10.

¹⁶¹ Ibid., Article 4.5.

¹⁶² Ibid., Article 4.3.

¹⁶³ Ibid., Article 4.3.

by the developed countries.¹⁶⁴

The GEF was specifically designated as the interim financial mechanism for the framework convention,¹⁶⁵ an arrangement to be reviewed at the first meeting of the Conference of the Parties.¹⁶⁶ The financial mechanism was to “function under the guidance of and be accountable to the Conference of the Parties, which shall decide on its policies, programme priorities and eligibility criteria related to this Convention”.¹⁶⁷ It was also to have “an equitable and balanced representation of all Parties within a transparent system of governance”.¹⁶⁸

Thus, the climate convention did not meet all the demands that India and the other developing countries had made during negotiations. On the positive side for these countries, it acknowledged their special situation and needs and their differentiated responsibility as compared to the North. It allowed them to exclude themselves from the purview of the review functions of the subsidiary bodies of the convention. It met their demand for new and additional financial resources, and their demand that the agreed full incremental costs incurred by them in fulfilling their obligations be met by the North. While it did not oblige their demand for a separate Climate Fund, it did provide for the restructuring of the GEF. Finally, it allowed them to link their fulfilment of obligations to the North’s effective implementation of commitments related to the provision of financial resources and the transfer of technology.

On the negative side, the convention did not emphasise the North’s main

¹⁶⁴ Ibid., Article 4.3.

¹⁶⁵ Ibid., Article 21.3.

¹⁶⁶ Ibid., Article 11.4.

¹⁶⁷ Ibid., Article 11.1.

¹⁶⁸ Ibid., Article 11.2.

responsibility. It did not impose strong commitments on the North. These were very important deficiencies from the point of view of most developing countries, particularly when seen against the 1990 IPCC estimate that the stabilization of the concentration of greenhouse gases in the atmosphere at existing levels required “[I]mmediate reductions of over 60 % in the net (sources minus sinks) emissions from human activities of long-lived gases”,¹⁶⁹ and the generally accepted view, as highlighted by various international reports such as those of the Villach and Bellagio workshops, that the developing countries would be hardest hit by climate change because they had the least resources to cope with it. The convention also did not meet the Southern demand for guarantees regarding the transfer of technology by the North. Finally, it imposed obligations on the developing countries, although these were very general and non-specific.

Despite the generally weak commitments imposed on states by the climate convention, and the mixed success that both North and South had in pressing their positions, there was broad recognition that this was the most feasible political outcome at this stage. Reflecting this recognition, 154 countries, including India, signed the climate convention at the Earth Summit.

VI. INDIA'S ASSESSMENT OF THE FRAMEWORK CONVENTION

India's priorities in the climate negotiations, articulated as early as the New Delhi Conference of Select Developing Countries in April 1990, were to avoid legally binding commitments, and to obtain assistance from the North on the best terms that

¹⁶⁹ WMO/UNEP, IPCC First Assessment, p. 2.

could be achieved. The focus of India's assessment of the outcome of negotiations was therefore on the extent to which these objectives had been met. Very little attention was paid to the commitments undertaken by the North to deal with climate change, demonstrating that the concern with Northern commitments was subsidiary to the goals of avoiding obligations and obtaining assistance. In addition, hardly any consideration was given to the success the framework convention might have in tackling the threats posed by climate change, showing that climate change was not seen by Indian policy makers as a pressing environmental issue in the short term.

The Indian delegation's assessment of the framework convention with regard to efforts made by it to avoid commitments was generally positive. In the view of the MOEF delegate, "[T]he most important gain in the negotiation was the elimination of articles dealing with review of national policies".¹⁷⁰ The MEA's chief delegate to the negotiations took a broader view:

Perhaps the most important aspect of the Convention ... is that it limits the possibilities of unilateral action by OECD countries. Without a Convention, OECD countries would impose technological emission standards through the multilateral financial bodies. (This is already evident in the World Bank and the ADB). They may also consider imposing trade restrictions on imports from countries failing to 'coordinate' or 'harmonise' their emission standards. A multilateral convention can be used to check such unilateral and arbitrary measures, though it cannot be relied upon to exclude the possibility altogether.¹⁷¹

The Indian delegation, said Dasgupta, had "ensured that the obligations imposed on us are minimal and, furthermore, that in all areas there is 'differentiation' between developed and developing countries".¹⁷² Moreover,

¹⁷⁰ Confidential sources.

¹⁷¹ Confidential sources.

¹⁷² Ibid.

[I]t has been specifically recognized that the extent to which developing countries can be expected to implement their commitments will be dependent upon the extent of financing provided to them and will also be subject to the overriding priority of development and poverty eradication.¹⁷³

With regard to technology transfer, the delegation conceded that no guarantees had been obtained from the North. However, with regard to financial resources, the assessment was positive. Dasgupta noted that

the Convention provides for augmented financial flows to developing countries over and above existing ODA levels. ... Moreover, (and here the result actually exceeds our brief) “agreed full costs” (not incremental costs) will be provided in respect of some ... commitments.¹⁷⁴

Dasgupta, however, conceded that the quantum of financial resources to be provided by the North was indeterminate and, in addition, “the precise way in which “full incremental costs” will be “agreed” upon remains to be worked out and upon this will depend the extent of the financial benefit to us”.¹⁷⁵

The provision in the framework convention for a financial mechanism was admitted to be a compromise between the North’s insistence on the GEF and the South’s preference for a new mechanism. According to Dasgupta,

the Convention not only recognizes the need for restructuring but lays down most of the specific changes required to remove the present deficiencies on account of which we have reservations on the GEF. In my view, this is not only the most which could be obtained in the negotiations but also a reasonable compromise. A single-handed crusade against the World Bank would not only have been fruitless but counter-productive in terms of our larger interests.¹⁷⁶

The overall assessment of the framework convention was positive. According

¹⁷³ Ibid.

¹⁷⁴ Ibid.

¹⁷⁵ Ibid.

¹⁷⁶ Ibid.

to Dasgupta, “[T]he outcome was entirely satisfactory from our point of view”.¹⁷⁷

¹⁷⁷ Ibid.

7. THE CASE OF LOSS OF BIODIVERSITY - INTRODUCTION

Biological diversity or biodiversity is defined by the 1992 Convention on Biological Diversity as the variability among living organisms from all sources, and includes diversity within species, between species and of ecosystems.¹ This chapter outlines the reasons for the elevation of the loss of biodiversity to the status of a global environmental issue; it shows that a heightened sense of urgency regarding the need to conserve biodiversity developed during the 1980s. It also shows that despite general agreement over the importance of biodiversity conservation, significant differences emerged between the North and the South over three issues: the question of access to and control of plant genetic resources; the distribution of the costs and benefits of biotechnology; and trends in intellectual property protection in the North. These, as the next chapter reveals, strongly influenced international negotiations over a biodiversity convention which began in 1990.

I. THE CONSERVATION OF BIODIVERSITY AS A GLOBAL ENVIRONMENTAL ISSUE

Broadly speaking, biodiversity is valuable for three reasons - it has economic value, it provides ecosystem services, and its conservation embodies aesthetic, ethical and cultural values for many communities. The economic value of biodiversity is difficult to calculate, but empirical studies have suggested it is substantial. One study estimated that about 4.5 percent of US GDP was attributable to the harvest of wild

¹ UNEP, Convention on Biological Diversity, (Nairobi: UNEP, 1992), Article 2.

species, around \$ 87 billion per year in the late 1970s.² Worldwide sales of wildlife-based drugs and pharmaceuticals are estimated at some \$ 40 billion a year.³

Diversity is particularly important in agricultural production. It was the lack of diversity which allowed a blight fungus to destroy the Irish potato in the mid-1840s, causing famine and triggering mass emigration. Progress in plant breeding depends on the availability of a pool of diverse genetic resources.⁴ The economic value of biodiversity is also increasingly evident with developments in biotechnology. Recombinant DNA techniques, for instance, now allow genes to be transferred between totally unrelated organisms, giving potential value to many wild species. These and other techniques are being used in a variety of areas, including detoxification and waste treatment, biological control of pests and diseases, and human health.⁵

Biodiversity also provides crucial ecosystem services. Many ecologists maintain that

most important from an anthropocentric perspective, plants, animals, and microorganisms help to supply human beings with an array of free ecosystem services, without which civilization would not persist. These include such things as controlling the gaseous mix of the atmosphere, generating and maintaining soils, controlling pests, and running biogeochemical cycles.⁶

² Christine Prescott-Allen and Robert Prescott-Allen, The First Resource: Wild Species in the North American Economy, (London: Yale University Press, 1986), p. 408.

³ Norman Myers, 'Tropical Forest Species: Going, Going, Going ...', Scientific American, Vol. 259, No. 6, Dec. 1988, p. 104.

⁴ Nyle C. Brady, 'Agricultural Research and US Trade', Science, Vol. 230, 1 November, 1985, p. 499.

⁵ UN, General Assembly, Environmentally Sound Management of Biotechnology, A/CONF.151/PC/29, 31 January, 1991, paras. 39-45.

⁶ Paul R. Ehrlich and Anne H. Ehrlich, 'The Value of Biodiversity', Ambio, Vol. 21, No. 3, May, 1992, pp. 219-26, p. 219.

These ecosystem services are regarded as particularly valuable in adaptation to climate change.

Finally, biodiversity carries values ascribed by different communities encompassing aesthetics, ethics and culture. Protected areas the world over provide opportunities for recreation and tourism and serve as cultural symbols and sources of national pride and inspiration. The preservation of many of these areas is vital for the survival of indigenous communities. Notions of humankind's responsibility to future generations and to other species also figure prominently in the justifications for biodiversity conservation.⁷ Many conservationists firmly believe that "nature has intrinsic worth and warrants respect regardless of its usefulness to humanity".⁸

In sum, biodiversity has considerable value. The Executive Director of UNEP has therefore argued that "biological diversity is a common global resource, like the atmosphere, from which all nations benefit and from whose diminishment all will suffer. It is a common interest in which all have a common responsibility".⁹

(a) Enhanced International Concern in the 1980s

The common interest of all states in biodiversity conservation is reflected in the long history of national and international conservation activities. Over the years, more than 130 nations have together established some 6,900 major, legally protected

⁷ Edith Brown Weiss, In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity, (Tokyo: United Nations University, 1989).

⁸ The Fourth World Congress on National Parks and Protected Areas, The Caracas Declaration, Caracas, 21 February, 1992.

⁹ UNEP, Annual Report of the Executive Director - 1988, (Nairobi: UNEP, 1989), p. 4.

areas for the conservation of biodiversity, covering almost five per cent of the earth's land surface.¹⁰ Cooperative international efforts for biodiversity conservation have led, among other things, to the creation of the international biosphere reserve network under UNESCO's Man and the Biosphere Programme, and to important conventions like the Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

Yet, a heightened sense of urgency regarding the need to conserve biodiversity developed in the 1980s, which elevated biodiversity loss to the status of a global environmental problem. This was mainly the result of three factors: a growing realisation of the unprecedented rate of loss of biodiversity; a growing and more sophisticated understanding of the different values of biodiversity conservation; and revolutionary developments in biotechnology.

The rate of loss of biodiversity in the 1980s was unprecedented. The US National Science Foundation called it "the most catastrophic loss of species in the last 65 million years".¹¹ This was underlined by the unprecedented destruction of millions of hectares of tropical moist forests, the most diverse ecosystems in the world (presently being destroyed at a rate of about 17 million hectares per year).¹²

The unprecedented loss of biodiversity was clearly attributable to human activities. A useful perspective on the human impact argues that

[T]he most important immediate cause of biodiversity loss is habitat

¹⁰ UN, General Assembly, Conservation of Biological Diversity: Background and Issues, A/CONF.151/PC/66, 25 July, 1991, para. 18.

¹¹ Christine McGourty, 'Biodiversity Plan Gets Backing from NSF', Nature, Vol. 340, 24 August, 1989, p. 585.

¹² A/CONF.151/PC/66, para. 42.

destruction and disturbance. However, it is the complex of underlying socio-economic causes - development pressure, market failure and intervention failure - which are more significant, and which have to be addressed by any conservation strategy.¹³

Thus, the immediate causes of biodiversity loss in the 1980s encompassed habitat loss, degradation and fragmentation; resource over-exploitation; species/genetic introductions; ignorance; pollution; and climatic change. The underlying causes included broadly the following: development pressure, stemming for instance from population increase and intensification and expansion of agriculture; market failure, for example through improper valuation of biodiversity and inefficient distribution of property rights; and intervention failure, revealing inadequate or incompetent government policies.

The 1980s also witnessed a growing, increasingly sophisticated awareness of the different values provided by biodiversity. Biodiversity had traditionally been undervalued for various reasons: some biological resources, like fruits and nuts consumed directly by forest-dwelling communities, were not valued because they did not pass through markets; other biological resources which did pass through markets tended sometimes to be undervalued because of short-term considerations, for instance in the case of trees valued solely for their timber content, rather than the time and effort required to grow them and the non-timber benefits provided by them; and finally, indirect values provided by biodiversity, such as ecosystem services like watershed protection, were often hard to quantify, and were ignored.¹⁴ However, much progress was made in the 1980s in devising better techniques to value

¹³ ODA, Biological Diversity and Developing Countries - Issues and Options, (London: ODA, 1991), p. 13.

¹⁴ A/CONF.151/PC/66, para. 27.

biodiversity.¹⁵

Scientific discoveries also helped to underline the value of biodiversity. Of an estimated 10 million species on earth, only about 1.4 million have been described.¹⁶ New and useful species were therefore continuously being discovered in the 1980s. Citing the case of picoplankton, for instance, a Harvard biologist declares that “[T]he productivity of marine systems may have been underestimated by one-half due to our ignorance of the role played by this picoplankton and the lack of appropriate methods of measurement”.¹⁷ Such discoveries therefore drew attention to the folly of losing biodiversity before the species being lost had been identified, let alone screened for their utility.

Enhanced publicity was also given in the 1980s to the disruption of the lives of many indigenous communities. The fate of the Yanomami of the Amazon rainforests, for instance, became an international issue because of the espousal of their cause by diverse groups including international conservation groups like Friends of the Earth and human rights organisations like Survival International. The efforts of these groups played a part in motivating several states with large indigenous populations to pledge their commitment to protect the rights of these communities. The Manaus Declaration on UNCED of the Presidents of several Amazonian states, for instance, declared that

[W]e recognise the rights of indigenous populations and their

¹⁵ Jeffrey A. McNeely, ‘Biodiversity: The Economics of Conservation Management’, in James T. Winpenny, ed., Development Research: The Environmental Challenge, (London: ODI, 1991), pp. 145-55.

¹⁶ A/CONF.151/PC/66, para. 10; Robert M. May, ‘How Many Species Are There On Earth?’, Science, Vol. 241, No. 4872, 16 September, 1988, pp. 1441-9.

¹⁷ Otto T. Solbrig, Developing the Capacity to Monitor and Audit, Cambridge, Mass., May 1991, p. 2.

contribution to conservation of the environment. We believe that a greater participation of these populations in this effort will be positive. With this aim, we are adopting significant measures, among which special mention must be made of the effort undertaken to respect the rights of indigenous populations in relation to their lands, according to national laws.¹⁸

International interest in the fate of indigenous communities eventually led to the designation of 1993 as the International Year of Indigenous People.

The emergence of new biotechnology in the 1980s also played an important role in the elevation of biodiversity loss to the status of a global environmental problem. Biotechnology held out enormous promise for progress in a variety of areas, some of which have been noted earlier. Indeed, biotechnology was the fastest growing area of scientific activity in the 1980s, judging by the number of papers published in the field.¹⁹ By the beginning of the 1990s, the annual investment in biotechnology research and development was approximately \$ 11 billion.²⁰ An ILO study estimated the worldwide biotechnology market to be worth \$ 50 billion a year, including an agricultural component of 61 percent, chemicals 20 percent, and human medicine 10 percent.²¹ The high expectations from biotechnology therefore strengthened international interest in the conservation of the genetic resources which served as its raw material.

The impact of biotechnology was not, however, perceived to be entirely positive. The issue of safety generated a wide debate involving consumer groups,

¹⁸ Manaus Declaration on the United Nations Conference on Environment and Development.

¹⁹ Andy Coghlan, 'Boom Time for Biotechnology', New Scientist, Vol. 133, No. 1803, 11 January, 1992, p. 11.

²⁰ UN, General Assembly, Environmentally Sound Management of Biotechnology, A/CONF.151/PC/29, 31 January, 1991, para. 26.

²¹ Iftikhar Ahmed, 'Introduction and Overview', in Iftikhar Ahmed, ed., Biotechnology: A Hope or a Threat?, (London: The Macmillan Press, 1992), pp. 1-14.

environmental organisations, UN agencies, governments, and others. Particular concern surrounded the release of genetically modified organisms into the environment. These organisms were potentially harmful if, for instance, genetic material inserted in them escaped uncontrollably into other organisms through naturally occurring gene transfer processes. Consequently, international efforts were initiated to publicise, monitor and control the risks posed by the release of genetically modified organisms. These led, among other things, to the establishment of a UNIDO/WHO/UNEP/FAO Informal Working Group on Safety in Biotechnology in 1985, and the adoption by the EC of directives on the use of genetically modified organisms in 1990.²²

In sum, enhanced concern over the rate of biodiversity loss, a greater appreciation of the value of biodiversity, and developments in biotechnology, served to highlight the importance of biodiversity conservation in the 1980s, and to elevate it to the status of a global environmental issue.

II. NORTH-SOUTH ISSUES IN THE EVOLUTION OF INTERNATIONAL CONCERN OVER THE CONSERVATION OF BIODIVERSITY

Despite general agreement over the importance of biodiversity conservation, significant differences emerged during the 1980s between the North and the South, particularly over three not unrelated issues: the question of access to and control of genetic resources; the distribution of the costs and benefits of biotechnology; and intellectual property protection trends in the North.

²² A/CONF.151/PC/29, para. 22.

(a) Access to and Control of Genetic Resources

North-South differences over the question of access to and control of genetic resources mainly concerned plant genetic resources. This was a relatively non-controversial subject until the latter half of the 1970s. A widely accepted 'common heritage' system operated under which countries generally levied no charge on exploration and collection activities in their territories, and no compensation was paid for resources taken out of them. Genetic resources are of indeterminate value until they have been properly studied, and consequently rewards were not grudged for the scientists and industrialists who added value through ingenuity to them. The countries in which the resources merely happened to exist were not deemed to be entitled to special rewards, a view strengthened by the argument that since the resources collected were generally renewable and the quantities usually small, the country providing them was not sustaining any losses.²³

As it happens, much of the world's biodiversity, perhaps as much as 80 percent, is found in the South.²⁴ Towards the end of the 1970s, scepticism about the common heritage principle began to grow in the South. Such scepticism was fuelled, in part, by a controversial book, Seeds of the Earth, by Canadian economist, Pat Roy Mooney.²⁵ Mooney alleged that developing countries were being "robbed" of their genetic resources by the North, and that the International Board for Plant Genetic

²³ Jack R. Kloppenburg, Jr. and Daniel Lee Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage', in Kloppenburg, ed., Seeds and Sovereignty, pp. 173-203, pp. 188-92.

²⁴ Unesco, UNCED Working Party on Biological Diversity: Promoting Education and Training, 12 April, 1991, p. 2.

²⁵ Pat Roy Mooney, Seeds of the Earth: A Private or Public Resource?, (Ottawa: ICDA, 1979).

Resources (IBPGR), ostensibly devoted to the conservation of genetic resources, was in fact aiding the North in the transfer of resources from the South. His allegations were also taken up by a pressure group, the Brussels-based International Coalition for Development Action (ICDA), which campaigned for reform of the international plant germplasm system.

Considerably enhanced activity related to the collection and transfer of genetic resources from South to North through the 1970s also made the developing countries more conscious of the importance of their genetic resources to plant breeding operations in the North.²⁶ Indeed, their resources played a fundamental part in the breeding of the high yielding plant varieties that produced the Green Revolution. The benefits of the Green Revolution did not make them indifferent either to the considerable profits that accrued to the Northern agro-business industries that often monopolised the market for high yielding seed as well as associated inputs like fertilizers and pesticides.²⁷ Therefore, they began to see “something of a contradiction in the status of their genetic resources as freely available ‘common heritage’ and the status of seed companies’ commercial varieties as ‘private property’ available by purchase”.²⁸ This, according to Juma, translated into a strong sense of resentment because of the prevailing climate of North-South confrontation:

The radical academic mood of the period was dominated by the ‘dependency school’ which cast international economic issues in a

²⁶ The Keystone Center, Oslo Plenary Session, Final Consensus Report: Global Initiative for the Security and Sustainable Use of Plant Genetic Resources, (Keystone: The Keystone Center, 1991), p. 9; Calestous Juma, The Gene Hunters: Biotechnology and the Scramble for Seeds, (London: Zed Books, 1989), p. 170.

²⁷ ‘The Global Seedsmen: The Birth of the Genetic Supply Industry’, in Pat Roy Mooney, ‘The Law of the Seed: Another Development and Plant Genetic Resources’, Development Dialogue, Issues 1-2, 1983, pp. 95-133.

²⁸ Kloppenburg and Kleinman, ‘Seeds of Controversy’, p. 174.

simple 'centre-periphery' model. Concern over genetic resources tended to fit well in this model. Here were resources predominantly located in the Third World countries being collected and improved upon by the industrialized countries and subsequently being used to exploit the Third World people.²⁹

1. Debates at the end of the 1970s

Four significant North-South debates over the question of access to and control of plant genetic resources were initiated at the end of the 1970s. The first obviously concerned the fairness of a system of common heritage that allowed breeders from the North to collect germplasm from the South without paying compensation. The justifications for the concept of free access were increasingly questioned by the South. Thus, the argument that Northern collectors did not significantly deplete the stock of genetic resources in developing countries was rejected as a red herring on the grounds that the value of germplasm lay not in its quantity but in its genetic information; the justification that at the time of collection most resources were of indeterminate value was rejected with the argument that the South at least deserved to be rewarded if the utility of these resources became apparent; and finally, the argument that only Northern ingenuity in adding value to genetic resources was deserving of reward was rejected as iniquitous because it ignored the costs incurred by developing countries, particularly local communities in these countries, in conserving their biodiversity.

Southern grievances tended to be played down by plant breeders and scientists in the North, who believed that the status quo was to everyone's advantage.³⁰ The typical argument of plant breeders was that "the replacement of free exchange with

²⁹ Juma, The Gene Hunters, p. 170.

³⁰ Otto H. Frankel, 'Genetic Resources: Evolutionary and Social Responsibilities', in Kloppenburg, ed., Seeds and Sovereignty, pp. 19-46, pp. 37-40.

a payment system would reduce breeders' interest in such materials".³¹ Several analysts also stressed that the South had little leverage to force a change in the existing practice. They argued that

the often-repeated assertion that breeders in developed countries depend on a continuing supply of germplasm from the country of origin of their crop is very largely unfounded. Breeders turn to germplasm collections for exotic materials rather than to the country or countries where landraces of their crop are still in cultivation, and even that is not a common occurrence.³²

The South's lack of leverage, moreover, was underlined by the "deluge of germplasm" in Northern collections, which meant that in the short term, Northern breeders were not overly concerned about the supply of new germplasm from the South.³³

Many scientists in the North also argued that the South stood to lose if it insisted on politicising the issue of free access.³⁴ They noted that many germplasm collections put together by Northern scientists had resulted solely from their own initiative, with little interest shown by the developing countries. Such efforts were in fact responsible for rescuing samples of many resources which had subsequently disappeared in the field. In many cases, the beneficiaries of breeding activities utilising the collected germplasm were the developing countries themselves. These advantages of the present system would therefore be lost by the developing countries if they sought to curb free access.

The second debate relating to the question of access to and control of plant genetic resources concerned the role of the IBPGR in the transfer of genetic

³¹ William L. Brown, 'Plant Genetic Resources: A View from the Seed Industry', in Kloppenburg, ed., Seeds and Sovereignty, pp. 218-30, pp. 228-9.

³² Frankel, 'Genetic Resources', p. 37.

³³ David Wood, 'Crop Germplasm: Common Heritage or Farmers' Heritage?', in Kloppenburg, ed., Seeds and Sovereignty, pp. 274-89, p. 285.

³⁴ Frankel, 'Genetic Resources', p. 38.

resources from the South to the North. The IBPGR was established in 1974 by the Consultative Group on International Agricultural Research (CGIAR),³⁵ with the objective of stimulating and supporting coordinated research on all aspects of crop genetic resources. Conflicting perceptions of its origins tended to influence views about its activities. One school of thought held that inadequacies in FAO's efforts in the area of conservation of genetic resources, especially its inability to generate public and political support and funding, prompted the CGIAR's initiative in establishing the IBPGR.³⁶ Supporters of the IBPGR included plant breeders, governments, and scientists from the North. From the South as well, scientists and administrators of national agricultural research centres tended to support the IBPGR's activities, although less vocally.

A rival school of thought about the IBPGR's origins held that its establishment was a result of the CGIAR muscling its way into FAO terrain.³⁷ Agreement between the CGIAR and FAO allowed the IBPGR to enjoy special privileges in FAO, but it used these to further the interests of major donors in the North, while at the same time escaping direct accountability to FAO, whose membership was dominated by developing countries. Its strategy was

to remove plant germplasm from its natural site to a germplasm bank, and then to provide free access to the collection. This policy ...

³⁵ The CGIAR was established in 1971. Its membership includes governments, international organisations and private donors. Its policies are primarily decided by major donors from the North. It supports the various International Agricultural Research Centres (IARCs) such as the International Rice Research Institute (IRRI) in the Philippines. 16 IARCs were in operation in 1992.

³⁶ Frankel, 'Genetic Resources', p. 23; Donald L. Plucknett, 'The Law of the Seed' and the CGIAR: A Critique of Pat Roy Mooney', Development Dialogue, Issue 1, 1985, pp. 97-102.

³⁷ Juma, The Gene Hunters, pp. 88-90; 'The Keys to the Kingdom: The Emerging 'Global' Network', in Mooney, 'The Law of the Seed', pp. 65-83, pp. 66-7.

effectively disenfranchized the host countries from their own biological assets, and greatly reduced the value of prospecting in the country itself.³⁸

Those sceptical of the IBPGR's stated goals included political activists in the South and non-governmental organisations from both North and South.

The third debate initiated at the end of the 1970s concerned the ownership of the germplasm collections held by the International Agricultural Research Centres (IARCs), and the corresponding rights of access of different parties to these collections.³⁹ The IARC collections were of particular interest to the developing countries because of their own relatively weak national storage capabilities - by 1985, there were to be five times as many base collections in the North as there were in the South.⁴⁰

Every IARC functioned under an agreement entered into with its host government. The agreement governing the IRRI, for instance, provided that

no part of the assets and property of the Institute shall inure to the benefit of or be distributable to its Members and if the existence of the Institute is terminated for any reason, all its physical plant, equipment and other assets shall become the property of the University of the Philippines.⁴¹

Such arrangements created concerns, particularly in the developing countries, that access to the IARC collections, hitherto taken for granted, could under certain eventualities become restricted. They therefore began to call for the establishment of a formal system that would guarantee their access to these collections.

³⁸ Timothy M. Swanson, 'Economics of a Biodiversity Convention', *Ambio*, Vol. 21, No. 3, May 1992, pp. 250-7, p. 255.

³⁹ Juma, *The Gene Hunters*, p. 90; The Keystone Center, *Oslo Plenary Session*, p. 9.

⁴⁰ Figures cited in Wood, 'Crop Germplasm', p. 285.

⁴¹ Quoted in M.S. Swaminathan, 'Seeds and Property Rights: A View from the CGIAR System', in Kloppenburg, ed., *Seeds and Sovereignty*, pp. 231-54, p. 251.

The fourth North-South debate over the question of access to and control of plant genetic resources which started at the end of the 1970s concerned the view in developing countries that access to Northern genetic resources was becoming more difficult as a result of Northern efforts to strengthen intellectual property protection. This is discussed later in this chapter, in the section on Northern intellectual property protection trends.

The four debates outlined above were carried into the 1980s and were sought to be resolved primarily in the forum of FAO, whose suitability followed from the almost universal membership of both the North and the South in it, and its traditional concern with matters relating to plant genetic resources.

2. North-South Confrontation in FAO

The main element in the South's initial strategy in FAO was to seek greater equity in the existing system of free access. It worked towards expanding and formalizing the system of common heritage to include all germplasm collections, private and public, Northern and Southern. This would, in its view, achieve greater equity, and also dispel apprehensions about the ownership of and access to the IARC germplasm collections. Another element in this initial strategy was to propose the establishment under FAO's auspices of an international bank for plant genetic resources, which would guarantee their free exchange. This would alleviate Southern concerns about access to proper germplasm storage facilities.

The South's initial strategy thus did not emphasize national sovereignty over genetic resources. The assertion of national sovereignty would have allowed developing countries to charge fees and control exploration and collection activities

in their territories, but it was not adopted as a strategy. This was partly because of pressure from breeders and scientists in the South who valued the existing system of cooperative research and relatively free flow of germplasm.⁴² In addition, the assertion of sovereignty would not have particularly helped Southern goals with regard to the IARC collections and with regard to intellectual property protection trends in the North. Finally, the strategy of expanding free access, unlike the assertion of sovereignty, could, by stressing notions of equity and fairness, be presented on an ethical platform likely to attract some support in the North.

In pursuance of its initial strategy, the South backed Resolution 6/81 sponsored by Mexico during the Twenty-first session of the FAO Conference in November 1981.⁴³ This resolution requested the Director-General of FAO

to examine and prepare the elements of a draft international convention, including legal provisions designed to ensure that global plant genetic resources of agricultural interest will be conserved and used for the benefit of all human beings, of this and future generations, without restrictive practices that limit their availability of exchange, whatever the source of such practices.⁴⁴

It also requested the Director-General to

prepare a study on the establishment of an international gene bank of plant genetic resources of agricultural interest under the auspices of FAO, taking into account the provisions of the proposed international convention as well as on-going national, regional and international efforts in this field in particular those of the IBPGR.⁴⁵

With regard to the proposal for an international gene bank, however, it soon

⁴² See, for example, T.T. Chang, 'Conservation of Rice Genetic Resources - Luxury or Necessity', *Science*, Vol. 224, 20 April, 1984, pp. 251-6.

⁴³ 'Only the Seeds in the Sea: The Road to Resolution 6/81', in Mooney, 'The Law of the Seed', pp. 24-64.

⁴⁴ FAO, Report of the Conference of FAO - Twenty-first Session, Rome, 7-25 November, 1981, (Rome: FAO, 1981), C 81/REP, para. 153.

⁴⁵ Ibid.

became clear that there was no source of funding for such an “ultimate” gene bank.⁴⁶ Furthermore, with regard to the proposal for an international convention to ensure unrestricted access to all plant genetic resources, it became clear from discussions within FAO that there was considerable opposition to this on the part of the North.⁴⁷ The North was particularly unwilling to force its private plant breeders and companies to open up their germplasm collections to unrestricted access.

The proposals placed before the twenty-second session of the FAO Conference in November 1983 therefore represented something of a compromise between the North and the South. The proposal for an international convention was watered down to a legally non-binding International Undertaking on Plant Genetic Resources. And the proposal for an international gene bank was replaced by an internationally coordinated network of base collections under FAO’s auspices or jurisdiction.

Despite these compromises, however, the South pressed on with its strategy at the 1983 Conference. With voting strength on its side, it established a ‘global system on plant genetic resources’ over the objections of some Northern delegations.⁴⁸ At the centre of this global system was the International Undertaking on Plant Genetic Resources,⁴⁹ and to monitor the operation of the Undertaking, a Commission on Plant Genetic Resources (CPGR).⁵⁰

In line with the South’s strategy of expanding and formalizing the common heritage system, the Undertaking was declared to be “based on the universally

⁴⁶ Charles F. Murphy, ‘Institutional Responsibility of the National Plant Germplasm System’, in Kloppenburg, ed., Seeds and Sovereignty, pp. 204-17, p. 212.

⁴⁷ Juma, The Gene Hunters, pp. 171-2.

⁴⁸ FAO, Report of the Conference of FAO - Twenty-second Session, Rome, 5-23 November, 1983, (Rome: FAO, 1983), C 83/REP, paras. 280-1.

⁴⁹ Ibid., Annex to Resolution 8/83, adopted 23 November, 1983, para. 285.

⁵⁰ Ibid., Resolution 9/83, adopted 23 November, 1983, para. 287.

accepted principle that plant genetic resources are a heritage of mankind and consequently should be available without restriction”.⁵¹ Plant genetic resources were defined to include all publicly and privately held germplasm, most controversially, as we will see below, “special genetic stocks (including elite and current breeders’ lines and mutants)”.⁵²

At the centre of the Undertaking was to be

an internationally coordinated network of national, regional and international centres, including an international network of base collections in gene banks, under the auspices or the jurisdiction of FAO, that have assumed the responsibility to hold, for the benefit of the international community and on the principle of unrestricted exchange, base or active collections of the plant genetic resources of particular plant species.⁵³

Such a network would fulfil at least two goals of the South - it would reassure the developing countries about their continued unrestricted access to important germplasm collections, and by assigning a prominent role to FAO, would diminish the IBPGR’s status.⁵⁴

The general reaction of most Northern countries was to express dissatisfaction with the resolutions adopted. Canada, France, the Federal Republic of Germany, Japan, Switzerland, the UK and the US reserved their positions with respect to Resolution 8/83 and the International Undertaking on Plant Genetic Resources. These countries, joined by the Netherlands, also reserved their positions with respect to Resolution 9/83 establishing the CPGR. Their view was that the existing system

⁵¹ Ibid., Annex to Resolution 8/83, adopted 23 November, 1983, Article 1, para. 285.

⁵² Ibid., Article 2.1(a), para. 285.

⁵³ Ibid., Article 7.1(a), para. 285.

⁵⁴ John Walsh, ‘Seeds of Dissension Sprout at FAO’, *Science*, Vol. 223, 13 January, 1984, pp. 147-8, p. 148.

needed few changes.⁵⁵ They generally viewed the South's efforts to give FAO a more prominent role as an attempt, as the executive director of the American Seed Trade Association later put it, "to use FAO to wrest control of germplasm resources" from the IBPGR.⁵⁶ Their most important criticism, however, was reserved for the inclusion of special genetic stocks under the terms of the Undertaking. In their view, the provision for unrestricted access to private breeders' lines violated plant breeders' rights recognised in their national laws. An American seed industry lobbyist voiced their general opinion when he claimed that the developing countries were trying "to use FAO as a visible forum to advance their prejudice against intellectual property rights and private enterprise".⁵⁷

Respected geneticists have in fact questioned the value to developing countries of access to special genetic stocks. Harlan, for instance, argues that

[A]ll the genes in elite inbred lines are available in the hybrids they produce. If a country is unable to use the genes, it is because its plant breeding programs are inadequate. The answer is not access to the inbreds so much as better local plant breeding programs.⁵⁸

The question then is, why did the developing countries confront the North over an issue that promised doubtful benefits?

One view holds that the South's demand for access to advanced breeders' lines arose from frustration at the inability of developing countries to produce superior cultivars using their own capabilities.⁵⁹ Another view, however, is that the South's

⁵⁵ C 83/REP, para. 280.

⁵⁶ Quoted in Marjorie Sun, 'The Global Fight Over Plant Genes', *Science*, Vol. 231, 31 January, 1986, pp. 445-7, p. 447.

⁵⁷ Quoted *ibid.*

⁵⁸ Jack R. Harlan, 'Seeds and Sovereignty: An Epilogue', in Kloppenburg, ed., *Seeds and Sovereignty*, pp. 356-62, p. 362.

⁵⁹ See Frankel, 'Genetic Resources', p. 31.

demand was driven less by need and more by bargaining tactics, or as Harlan puts it, “more politics than genetics”.⁶⁰ In the second view, the South tried to bargain for concessions from the North regarding enhanced technical assistance for plant breeding activities, and increased aid for conservation activities in the South.⁶¹

Both explanations appear valid. While equity considerations were important to the South, it also was conscious of the importance of plant breeding in improving agricultural productivity, and was keen to obtain enhanced assistance from the North for conservation and breeding activities.

The developed states, however, rejected any interference with plant breeders’ rights. Against their firm opposition, and given factors such as the non-binding character of the Undertaking, the “deluge of germplasm” in the North, and the developing countries’ reluctance to assert national sovereignty, the South had no leverage to press for concessions. The US, Canada and Australia indicated that they would not adhere to the Undertaking, while Belgium, Denmark, the Federal Republic of Germany, Finland, France, Ireland, the Netherlands, New Zealand, Norway, Sweden, and the UK agreed to do so only with reservations.⁶² By contrast, most developing countries indicated their acceptance without reservations of the Undertaking.

3. Divisions Within the South

The apparently clear North-South division began to look more complicated by

⁶⁰ Harlan, ‘Seeds and Sovereignty: An Epilogue’, p. 362.

⁶¹ Sun, ‘The Global Fight’, p. 446.

⁶² Jack R. Kloppenburg, Jr. and Daniel Lee Kleinman, ‘Plant Genetic Resources: The Common Bowl’, in Kloppenburg, ed., Seeds and Sovereignty, pp. 1-15, p. 8.

the time the twenty-third session of the FAO Conference met in November 1985. Several influential developing countries, having taken a closer look in the interim at the overall consequences of the Undertaking for their national interests, began to express reservations about unrestricted access to all germplasm. In retrospect, because of the growing disillusionment with the concept of free access, 1985 marks the beginning of the move away from the common heritage principle towards a system that emphasised national sovereignty.

At the 1985 FAO Conference, developing countries like Ethiopia, Brazil, Mexico, Argentina and India expressed reservations regarding the Undertaking.⁶³ The Ethiopian representative declared that “the jurisdiction of all affairs relating to policy on genetic resources belongs to the country concerned”, and those desirous of gaining access to genetic resources should “agree on a mode of acquisition with the proprietor”.⁶⁴ Brazil declared itself “unable to include [breeders’ lines] in international exchange agreements”.⁶⁵

Many of these countries, it emerged, already had in place legislation and practices restricting access to plant genetic resources. The resources to which access was restricted tended to be cash crops and export crops important to the economies of these countries, for instance coffee in Ethiopia, black pepper and turmeric in India, rubber in Brazil, cocoa in Ecuador, and wild pistachio in Iran.⁶⁶ These countries were reluctant to allow others access, lest their competitive advantage be eroded with the spread of breeding techniques utilising these resources. Moreover, several, like

⁶³ Kloppenburg and Kleinman, ‘Seeds of Controversy’, p. 194.

⁶⁴ Quoted *ibid.*, p. 194.

⁶⁵ Quoted in Sun, ‘The Global Fight’, p. 446.

⁶⁶ Sun, ‘The Global Fight’, p. 446; Murphy, ‘Institutional Responsibility’, p. 217.

Brazil and India, had in place strong plant breeding programs and had similar desires to those expressed by the developed states to protect the innovations produced by these programs. Thus, reservations about the Undertaking very similar to some of those registered by the Northern states came to be expressed by prominent developing countries at the 1985 Conference. Commenting on this, a senior US official at the conference said “[T]here was much less friction this time. Once countries start looking at it [the resolution], they’ll realize how flawed it is”.⁶⁷

What explains the shift in the position of some developing countries at the 1985 Conference? One approach could be to argue that the developing countries had always had at least two alternatives to choose from in trying to make the system work better for them - they could either emphasize their sovereignty over natural resources and press for ‘fair’ payment for the resources taken out of their countries, or, as they initially chose in 1981 and 1983, press for extension of the existing system of free access. Consequently, the shift in position of some developing countries could be described as a new preference for the alternative of national sovereignty, precipitated by the inability of the South to persuade the North to cooperate in the expansion of the old system. This explanation is weak, however, because none of the developing countries mentioned above attempted to organise a coordinated move away from the common heritage principle. Indeed, most of them continued to express their solidarity with the spirit in which the Undertaking had been adopted, and supported practically all the other provisions of the Undertaking.

A second explanation is more robust. It identifies the shift in stance of the developing countries with changed perceptions of where their respective national

⁶⁷ Quoted *ibid.*, p. 447.

interests lay, and assigns the lack of coordination within the South to the dominance of parochial interests over the interests of the bloc as a whole. In this view, prominent developing countries recognised that they had miscalculated in trying, among other things, to win a moral victory over the North by pressing for universal unrestricted access to plant genetic resources, and that the principle of free access could include access to their own commercially valuable genetic stocks; consequently, they toned down their support for the principle, in the process advertising differences within the South.

The South was more firmly united over other elements in the International Undertaking, particularly the establishment of the gene bank network. North-South differences persisted over the South's attempts to give FAO more direct control over activities hitherto largely the province of the IBPGR.⁶⁸ At this point, it would be appropriate to briefly describe the evolution of this issue subsequent to the 1985 Conference. In 1986, the CGIAR considered the withdrawal of the IBPGR from FAO.⁶⁹ Compromises on both sides, however, prevented a disruption of their working relationship, and eventually, in 1990, they agreed a memorandum of understanding which formalized future working relations, and envisioned the IBPGR's administrative separation from FAO. Both parties recognized "the necessity of achieving maximum complementarity between the FAO network of base collections and the IBPGR registry of base collections" and undertook

to cooperate with a view to merging these, to the extent possible, in accordance with the principle that IBPGR would provide scientific and technical advice on the establishment, maintenance and management of base collections and FAO, while keeping an overview of the

⁶⁸ Ibid., p. 446.

⁶⁹ Ibid., p. 447.

scientific and technical aspects, would be mainly concerned with providing a policy and legal framework through which countries would make the necessary efforts for safe conservation and unrestricted exchange and monitoring the implementation of the provisions of the International Undertaking.⁷⁰

Thus, the developing countries were unsuccessful in gaining more control over the IBPGR's activities. When they tried to use FAO to gain more control, the IBPGR simply withdrew from FAO. However, they were successful in establishing a formal role for FAO in coordinating an international network of gene banks, thus assuring that to a large extent their continuing access to many important germplasm collections would be safeguarded by FAO.

4. The Move Towards National Sovereignty

After the 1985 FAO Conference, it became increasingly clear that the notion of national sovereignty was displacing the concept of common heritage. Strong recommendations were therefore made that "considering germplasm national property rather than common heritage would provide a means of achieving an equitable and viable solution to the current controversy".⁷¹

Certain disadvantages with the system of national sovereignty, however, were apparent. These included the possibility highlighted by private breeders and scientists in the North, that if the developing countries asserted strong control over their resources and started charging for access, then the interest of breeders in these resources would wane, the more so because of the large, well-stocked collections most breeders in the North already had access to. In addition, many of the resources the

⁷⁰ FAO, Report of the Commission on Plant Genetic Resources - Fourth Session, Rome, 15-19 April, 1991, (Rome: FAO, 1991), CPGR/91/REP, para. 62.

⁷¹ Kloppenburg and Kleinman, 'Seeds of Controversy', p. 188.

South controlled were renewable and increasingly substitutable, and hence OPEC-style strategies of threatening to cut-off the North's access were impractical; instead, they could bring on costs such as retaliatory restrictions by the North on assistance to developing countries.⁷² Furthermore, national sovereignty could be seen as a double-edged sword - while it allowed developing countries to bargain on a bilateral basis with Northern countries seeking access to their resources, it could also bring the various pressures associated with bilateral relationships on developing countries. Finally, the sovereignty principle could prove subversive of Southern unity if developing countries started charging not just the Northern countries but each other as well for access to their genetic resources.

These disadvantages, however, were played down with the argument that there was no alternative which could, under the existing circumstances, provide benefits comparable to those possible under the system of national sovereignty. Moreover, the context in which national sovereignty came increasingly to be emphasised was a changing one from that in which the common heritage proposal was first pressed. At least one of the reasons for pressing the common heritage concept in the past, namely to ensure the South's unrestricted access to important germplasm collections in the North, was of declining significance given the South's growing belief that such access would anyway be preserved under FAO auspices.

The progressive dilution of the common heritage concept left a number of developing countries feeling that few benefits had been gained by them in their efforts to introduce changes in the international germplasm system. Consequently, in 1986

⁷² Carl Djerassi, 'Making Drugs (And Soaking the Poor?)', *Nature*, Vol. 310, 9 August, 1984, pp. 517-8.

and 1987, at a time when the principle of national sovereignty had not yet been firmly established but the opposition of Northern states and some developing countries had effectively throttled the common heritage concept, discussions took place over ways in which developing countries could secure more benefits under the existing circumstances. In 1987, at the second meeting of the CPGR, discussions took place over a new concept of 'farmers' rights'. These rights, the developing countries argued, followed from the careful selection and breeding activities of farmers over many centuries which were responsible for the conservation and improvement of useful plant genetic resources. These rights would thus parallel the plant breeders' rights recognised by developed states.

In principle, the concept of farmers' rights appeared unexceptionable. However, it was clear from the CPGR's deliberations that the developing countries did not have a robust definition of what was meant by 'farmers' rights', and that they had given insufficient thought to the precise mechanisms for implementing this concept.⁷³ When they sought an international fund to "compensate farmer communities through support to the countries concerned",⁷⁴ it smacked of an opportunistic attempt to capitalize on a vague but morally appealing concept. Several developed states therefore opposed the establishment of a fund until more thought had been given to the subject. Over their objections, however, the majority of the Commission's members requested the Director-General of FAO to "take immediate action for the establishment of a fund to support an action programme for plant genetic resources".⁷⁵

⁷³ Swaminathan, 'Seeds and Property Rights', pp. 246-7.

⁷⁴ Quoted in Kloppenburg and Kleinman, 'Seeds of Controversy', p. 197.

⁷⁵ Quoted *ibid.*

The establishment of the International Fund for Plant Genetic Resources in 1987 yielded few benefits for the developing countries. The voluntary contributions to the fund, particularly of the major aid donors, were minimal. The developed states continued to be very sceptical about the need for such a fund and the use which developing country governments might make of assistance provided by such a fund.⁷⁶

5. North-South Compromise

The uncertainties surrounding various features of the international plant germplasm system benefited none of the parties - neither were the developing countries able to secure substantial benefits from their attempts to change the system, nor were the developed countries happy with the challenge implicit in the Undertaking to plant breeders' rights and the possibility that the developing countries might start severely restricting access to their germplasm. Serious efforts therefore began to be made from 1988 to resolve the various controversies. These included the initiation, at the request of several corporations, personnel in the US Department of Agriculture, and the US National Academy of Sciences, of the Keystone International Dialogue Series on Plant Genetic Resources in 1988. This was chaired by the respected agricultural scientist and senior adviser to the Indian government, Dr M.S. Swaminathan, and brought together representatives of different governments, conservation groups, intergovernmental organisations, and corporations, all representing various viewpoints. As a result of such efforts, the CPGR was able in 1989 to recommend additions to the FAO Undertaking which increased its

⁷⁶ 'Bio-Battles at the UN: Plants and Politics at FAO', in Cary Fowler et al, 'The Laws of Life: Another Development and the New Biotechnologies', Development Dialogue, Issues 1-2, 1988, pp. 256-80, pp. 259-61.

acceptability to different governments.

The third session of the CPGR in 1989 produced an agreed interpretation of the FAO Undertaking involving the parallel and simultaneous recognition of Plant Breeders' and Farmers' Rights.⁷⁷ The two resolutions that incorporated this interpretation were subsequently endorsed by the FAO Conference, and became annexes to the Undertaking. Under Resolution 4/89, plant breeders' rights were declared not to be incompatible with the International Undertaking (4/89.1); the term 'free access' was deemed not to mean free of charge (4/89.a); and the concept of free exchange of genetic resources was deemed to allow a state to introduce restrictions that were necessary for it to conform to its national and international obligations (4/89.2). Resolution 5/89 recognized Farmers' Rights, defining them as

rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources, particularly those in the centres of origin/diversity. These rights are vested in the International Community, as trustee for present and future generations of farmers, and supporting the continuation of their contributions, as well as the attainment of overall purposes of the International Undertaking.

The agreed interpretation of the Undertaking was an effort to please all parties - those who felt the original Undertaking did not respect plant breeders' rights, those who felt it did not provide for restrictions on access that might be in the national interest, and those who felt they were receiving few rewards for their conservation of genetic diversity. The interpretation put the official seal of approval on the movement away from the common heritage principle - it allowed regulations on access to germplasm, charges for genetic material, and restrictions as and when national legislatures deemed necessary, all of which were hardly characteristics of a

⁷⁷ CPGR/91/REP, para. 4.

common heritage system. Furthermore, in trying to please all parties, the interpretation in fact provided the greatest benefits to the strongly placed parties, and few benefits to those in the weakest position.

The greatest benefits from the agreed interpretation of the Undertaking, at least in the short term, accrued to the Northern states. These countries were able to preserve the intellectual property rights of their breeders, and because of their relatively well-stocked germplasm collections, were unlikely in the short term to face significant costs as a result of dependence on developing countries for new supplies of genetic resources that might carry charges with them.

The developing countries that were rich in biodiversity, although unlikely in the short term to benefit much from levying charges on the transfer of germplasm, had relatively bright prospects for securing greater benefits in the future. Those with strong plant breeding programs and commercially valuable stocks of germplasm also benefited from the agreed interpretation, because they obtained recognition of the legitimacy of restrictions on access that they might impose.

The least benefits went to developing countries that were relatively poor in biodiversity and which had weak breeding programs. All that these countries gained, in common with other countries, was recognition of 'farmers' rights', a very nebulous concept, and one that did not appear to be strongly backed by aid donors. Meanwhile, aid donors appeared to be reallocating scarce aid resources to support biodiversity conservation to the developing countries richest in biodiversity.⁷⁸ The developing countries that were relatively poor in biodiversity also had to reckon with the probability that they would be net losers in the international exchange of

⁷⁸ ODA, Biological Diversity and Developing Countries, p. 45.

germplasm once the practice of charging for access became widespread.

Events after 1989 are described in the next chapter, which deals with the negotiation of a biodiversity convention. However, it would be appropriate to mention a few details here, relating to the fourth session of the CPGR in April 1991. The increased popularity of the International Undertaking following its 1989 interpretation was reflected in the increased membership of the CPGR, with several Northern countries which had earlier boycotted it, including the US, Japan, Canada, and Belgium, now joining it. The abandonment of the concept of common heritage was clarified by the Commission's agreement that "the principle of nations' sovereign rights over plant genetic resources in their territories was vital. This should be stated, in international agreements, when appropriate".⁷⁹ The Commission also discussed ways of strengthening farmers' rights. There was agreement that the International Fund was "the best way to implement Farmers' Rights", but there was no agreement on whether the Fund should be mandatory or voluntary, with important donor countries, in particular, resisting obligations to commit funds.⁸⁰

(b) The Distribution of Costs and Benefits of Biotechnology

North-South differences over the distribution of the costs and benefits of biotechnology were not discussed formally in the 1980s. This was mainly because of the novelty of biotechnology. However, a consensus emerged by the end of the 1980s that biotechnology was ushering in a revolution in many sectors of economic

⁷⁹ CPGR/91/REP, para. 30.

⁸⁰ Ibid., para. 16.

development. Since research and development activities were primarily concentrated in the North, concerns grew in the South that the North-South development gap could widen. It was only after this recognition spread widely in the South that differences with the North emerged at the political level.

The tremendous promise of new techniques in biotechnology generated considerable interest in the 1980s. A few developing countries, recognising the importance of biotechnology, were quick to get off the mark with their own programmes. For instance, India created a National Biotechnology Board in 1982, Thailand established the National Centre for Genetic Engineering and Biotechnology in 1983, and China listed biotechnology as a top priority area in its Seventh Five Year Plan (1986-90). A UNIDO survey showed that India, China, Brazil, Mexico, Argentina, Thailand, Cuba and Nigeria had managed by the end of the 1980s “to put in place a basic infrastructure for further work in biotechnology and to get started on the necessarily long-term capacity of building up their human resources and research facilities in biotechnology”.⁸¹ The efforts of these countries, however, constituted the exception rather than the rule, and the majority of the developing countries remained backward in their biotechnology capabilities through the 1980s.

Consequently, concerns grew in the 1980s of a widening of the North-South development gap, particularly as a result of difficulties faced by the developing countries in competing with the North and the adverse impacts of biotechnology on

⁸¹ David Dembo and Ward Morehouse, ‘Biotechnology in the Developing World: Learning from Experience’, Biotechnology and Development Review, No. 2, Nov. 1992, pp. 1-2, 5, p. 5.

their economies.⁸² Developing countries generally faced high entry barriers to the field of biotechnology. Their technological capabilities were generally inferior to the North's, and in most cases they were unable to afford the high costs of transfer of technology from the North.⁸³ Northern companies were also unwilling to allow many developing countries access to their technologies because of inadequate intellectual property protection in these countries.⁸⁴ Finally, developing countries were generally unable to raise the financial resources to fund highly sophisticated research in biotechnology. As one expert points out,

[T]he expense of transferring the correct piece of DNA from one cell to another and for evaluating the product is minimally US \$ 1,000,000. ... Given that scientific resources in developing countries are already vastly overstretched and severely restricted financially, it makes little or no economic sense for scientists in these countries to jump on the 'band wagon' of genetic engineering.⁸⁵

Thus, the capacity of most developing countries to compete with the North in the field of biotechnology was very limited.

Concerns also grew about the widening of North-South disparities as a result of the adverse impacts of biotechnology on Southern economies. In particular, the use of biotechnology to develop products and processes that improved on natural

⁸² Frederick H. Buttel and Martin Kenney, 'Prospects and Strategies for Overcoming Dependence', in V.R. Panchamukhi and Nagesh Kumar, eds., Biotechnology Revolution and the Third World, (New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988), pp. 315-48, especially pp. 318-32.

⁸³ Horst W. Doelle and E. Gumbira-Sa'id, 'Joint Microbial Biotechnological Ventures in Developing Countries: Social Promises and Economic Considerations', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 235-65, p. 237.

⁸⁴ OECD, Biotechnology, Agriculture and Food, (Paris: OECD, 1992), p. 188.

⁸⁵ Colin Ratledge, 'Biotechnology: the Socio-Economic Revolution? A Synoptic View of the World Status of Biotechnology', in Da Silva, Ratledge and Sasson, eds., Biotechnology - Economic and Social Aspects, pp. 1-22, p. 17.

biological processes and resources threatened the production of commodities in the South, and the export earnings of many developing countries.⁸⁶ For instance, Third World producers of cane and beet sugar were adversely affected when US imports declined following the development of a substitute, high fructose corn syrup, manufactured through the enzymatic transformation of starch. Similarly, developing country exports of cocoa and vanilla beans were threatened by substitutes for cocoa butter produced with enzyme technology and the laboratory production of vanilla flavour from plant cell cultures.⁸⁷ A 1988 study calculated that

[T]he current value of developing country exports of the commodities that can be substituted in the near future because of biotechnology developments in industrialised countries is nearly US \$ 17 billion. ... these developments may not completely substitute imports from developing countries because of several factors (e.g., consumer preference, local Northern commodity lobbies). However, even in the absence of actual substitution, the technological feasibility of substitution will keep the prices of these commodities depressed.⁸⁸

The study estimated the likely loss of export earnings of the South at about US \$ 10 billion per year.⁸⁹ A 1989 OECD report confirmed that

biotechnology is clearly a technology of the highly industrialized countries, both with regard to research and development requirements and market potential. Companies will exploit the advances in plant genetics to replace Third World crops, which might be increasingly grown in OECD countries, thus reinforcing the concentration of world

⁸⁶ Juma, The Gene Hunters, p. 174; Norman Clark and Calestous Juma, Biotechnology for Sustainable Development - Policy Options for Developing Countries, (Nairobi: Acts Press, 1991), p. 11; Gerd Junne, 'The Impact of Biotechnology on International Commodity Trade', in Da Silva, Ratledge and Sasson, eds., Biotechnology - Economic and Social Aspects, pp. 165-88.

⁸⁷ 'Cocoa Butter Substitute from Oilseeds' and 'Phytovanilla Threatens Substitution of Vanilla Exports', Biotechnology and Development Review, No. 2, November 1992, p. 7.

⁸⁸ V.R. Panchamukhi and Nagesh Kumar, 'Impact on Commodity Exports', in Panchamukhi and Kumar, eds., Biotechnology Revolution and the Third World, pp. 207-24, p. 217.

⁸⁹ *Ibid.*, p. 219.

trade within the OECD area.⁹⁰

Besides the threat to Southern exports, analysts also anticipated that Northern biotechnology companies offering unique products would easily penetrate and monopolise Southern markets.⁹¹ Consequently, concerns grew in the South about the adverse impacts of biotechnology on developing country economies.⁹²

Anxieties were also expressed in the South about the safety of biotechnology, and that developing countries might unwittingly become testing grounds for genetically modified organisms and other products developed by the North.⁹³ A US institute, for instance, engaged in unauthorised testing of a rabies vaccine on an Argentinean farm until this was terminated by the Argentinean government in 1986.⁹⁴ Southern observers therefore warned that as regulations governing the testing and release of genetically modified organisms became stricter in the North, these would increasingly be tested in the South where controls were generally weak or non-existent.⁹⁵

Thus, significant developments in biotechnology in the 1980s created considerable concerns in the South, particularly regarding widening North-South disparities. At the same time, appreciation of the many benefits biotechnology offered grew. The view therefore increasingly gained ground that little could be

⁹⁰ OECD, Biotechnology - Economic and Wider Impacts, (Paris: OECD, 1989), p. 111.

⁹¹ Clark and Juma, Biotechnology for Sustainable Development, p. 11.

⁹² Amir H. Jamal, 'The Socio-Economic Impact of New Biotechnologies in the Third World', in Fowler et al, 'The Laws of Life', pp. 5-8.

⁹³ 'Regulating the Super 'Natural': The Legal Challenge of Regulating Biotechnology', in Fowler et al, 'The Laws of Life', pp. 212-24.

⁹⁴ Robert Walgate, 'Making Biotechnology Appropriate - and Environmentally Sound', in Da Silva, Ratledge and Sasson, eds., Biotechnology - Economic and Social Aspects, pp. 284-308, p. 303.

⁹⁵ Clark and Juma, Biotechnology for Sustainable Development, pp. 12-3; Vandana Shiva, Biotechnology and the Environment, (Pulau Pinang: Third World Network, 1991), pp. 9-14.

achieved by criticising biotechnology; instead, the South needed to adopt it as quickly as possible and to try and compete with the North. Although biotechnology posed threats, it also provided opportunities to catch up and even overtake the North because advances in the field were at a relatively early stage and the North's technological edge was not yet overwhelming.⁹⁶

Developing countries interested in entering the field of biotechnology, however, were generally handicapped, as seen earlier, by weak technological capabilities and resource constraints. Efforts to generate successful biotechnology programs through cooperation with other developing countries were similarly handicapped. Indeed, even recent cooperative programs between the more successful developing countries do not appear to have produced substantial results, partly because the participants have been reluctant to share innovations with each other for fear of forfeiting some commercial advantage.⁹⁷ Another route explored by the developing countries was through the UN system, and this led to the establishment in the mid-1980s of UNIDO's International Centre on Genetic Engineering and Biotechnology (ICGEB), with one laboratory in Trieste and the other in New Delhi.⁹⁸ However, the moderate funding and resources committed to the ICGEB meant that this route too

⁹⁶ E.J. Da Silva, 'Biotechnology: Socio-economic Considerations, Intercultural Perspectives and International Viewpoints', in Da Silva, Ratledge and Sasson, eds., Biotechnology - Economic and Social Aspects, pp. 189-234, pp. 212-3.

⁹⁷ 'Developing Countries to Set Up Gene Banks', Biotechnology and Development Review, No. 1, November 1991, pp. 5, 7; 'Biotechnology Cooperation in the SAARC Region', Biotechnology and Development Review, No. 1, November 1991, p. 5; 'G-15 Gene Banks on Medicinal Plants Take Shape', Biotechnology and Development Review, No. 2, November 1992, p. 5.

⁹⁸ David Dembo, Clarence Dias, and Ward Morehouse, 'Trends and Prospects for Developing Countries', in Panchamukhi and Kumar, eds., Biotechnology Revolution and the Third World, pp. 153-92, p. 183.

offered few immediate gains.⁹⁹ Access to Northern biotechnology therefore offered the most attractive way for developing countries to speedily build up their capabilities. But such access was costly, and was becoming increasingly difficult because of intellectual property protection trends in the North.

A way out of this situation was found when the South hit upon a strategy of collective bargaining that offered scope for achievement of technology transfer from the North on easy rather than commercial terms. This strategy was inspired by the international focus on biodiversity conservation at the crucial juncture when the South was looking to make gains with biotechnology, and resulted in the South's linkage of the two issues. This strategy, as the next chapter shows, emphasised the need to equitably share the benefits of biotechnology between the holders of technology and the donors of germplasm.

(c) Intellectual Property Protection Trends in the North

Within the broad context of biodiversity conservation, the North-South debate over intellectual property protection focused in the early 1980s on protection given to plant breeders in the North in the form of plant breeders' rights (PBR). In the second half of the 1980s, the debate encompassed biotechnology and its related products, particularly the issues of patenting of 'life' and of biotechnology processes. North-South differences were also complicated by a new emphasis by the North, particularly the US, on intellectual property protection and its relationship with

⁹⁹ K.S. Jayaraman, 'Biotechnology - Indian Centre Receives Funds', Nature, Vol. 355, No. 6357, 16 January, 1992, p. 192.

international trade, such that allegedly inadequate intellectual property protection in the South came to be labelled in the North as an 'unfair trade practice'. Thus, four aspects of North-South differences over intellectual property protection trends in the North can be identified: differences over the strengthening of intellectual property protection by the North; growing inequities perceived by the South in the relative recognition of formal and informal innovation; differences over the extension of the coverage of intellectual property protection by the North; and differences over efforts by the North for worldwide harmonization of intellectual property protection.

1. Plant Breeders' Rights

Much of the debate over intellectual property protection focused in the early 1980s on protection given to Northern plant breeders in the form of plant breeders' rights (PBR). PBR were seen in the North as a necessary legal instrument to encourage plant breeders to innovate, produce, and distribute new plant varieties. They gave breeders exclusive rights for a fixed period over plant varieties they had developed. During this period, breeders were protected against competitive or unauthorized uses of their protected varieties. In particular, under the International Union for the Protection of New Varieties Convention (UPOV), which enshrined PBR granted by Northern states, breeders could prevent others from producing propagating material of their varieties, and could prevent others from marketing such material.¹⁰⁰

Two important provisions, though, limited breeders' rights under UPOV to

¹⁰⁰ The Keystone Center, Oslo Plenary Session, Appendix A, 'Plant Breeders' Rights and Patents: A Brief Description of the System', pp. 35-7, p. 35.

some extent. First, PBR did not extend to the re-use on a farm of seed from the harvest of a protected variety (although countries were free to extend PBR if they chose) - therefore, farmers could plant-back seed from the harvest of a protected variety. Second, under 'breeders' exemption', a protected variety could be used by any breeder as an initial source of variation for creating new varieties. But neither of these provisions affected a breeder's full rights over advanced breeding lines, including the right to restrict access to them as much as the breeder wished.

The developing countries, however, as we have seen, viewed as iniquitous a system which allowed unrestricted access to the South's germplasm but restricted access to the genetic resources of Northern plant breeders. This, as we have seen, provoked a distinct North-South split following the adoption of the FAO Undertaking in 1983. In addition, debate over PBR was also provoked by a trend towards concentration in the North's seed industry and perceived attempts by Northern multinational corporations to use protection afforded by PBR to control the international seed market and raise the price of seed in the South.¹⁰¹ Concerns were also raised in the South that efforts would be made by Northern governments to aid their multinational corporations by pressing the developing countries to recognise PBR in their national legislation.¹⁰² The North-South dimensions of this issue were underlined by the fact that UPOV did not have a single Southern member.¹⁰³

¹⁰¹ Walsh, 'Seeds of Dissension Sprout at FAO', p. 148; Juma, The Gene Hunters, pp. 81, 84.

¹⁰² 'Patenting the First Link in the Food Chain', in Mooney, 'The Law of the Seed', pp. 134-66, pp. 138-41.

¹⁰³ Argentina and Uruguay were the first developing countries to take steps, in 1991, towards joining UPOV.

Although some developing countries like Argentina and Chile had legislation analogous to PBR, most developing countries did not recognise PBR. They were not convinced that the benefits of membership of UPOV outweighed the costs of administration and the lost opportunity of free use of protected varieties.¹⁰⁴ In a number of developing countries too, the need for PBR was not significantly felt because of the overwhelming public sector bias in plant breeding activities.¹⁰⁵ Indeed, many developing countries feared that by recognising PBR they would encourage the entry of multinational companies into the agricultural sector of their economies, with adverse results. The multinationals would quickly dominate their agricultural sectors and marginalize less competitive indigenous firms, especially the public sector organizations which were often large employers and important components of their agricultural strategies.¹⁰⁶ Moreover, their food security would be threatened; foreign companies, after all, would concentrate on production of cash crops, generally with export potential, rather than food crops essential for domestic consumption. Finally, having achieved a monopoly, the multinationals were liable to hike up the price of seed and other agricultural inputs, especially hurting small farmers who generally constituted the majority of the farming community.¹⁰⁷

The South's attack on PBR, however, as we have seen, died down after 1985. Concerns nevertheless remained that the North might try and extend the purview of

¹⁰⁴ Brian Belcher and Geoffrey Hawtin, A Patent on Life: Ownership of Plant and Animal Research, (Ottawa: IDRC, 1991), p. 8.

¹⁰⁵ Clark and Juma, Biotechnology for Sustainable Development, pp. 44-5.

¹⁰⁶ K. Ravi Srinivas, 'Private Investment in Biotechnology Promoted in India', Biotechnology and Development Monitor, No. 11, June 1992, pp. 16-7, p. 17.

¹⁰⁷ Interview with Dr Suman Sahai, Convenor, 'Gene Campaign', New Delhi, 12/6/93; Srinivas, 'Private Investment in Biotechnology', p. 17; Vandana Shiva, Biotechnology and the Environment, p. 33.

PBR, both in terms of persuading developing countries to adopt PBR, and in terms of strengthening Northern PBR in ways that made Southern access to Northern genetic resources more difficult. These concerns were in fact, as seen below, borne out with the revision in 1991 of UPOV.

UPOV, as it operated in the 1980s, barred double protection.¹⁰⁸ This meant that countries were required not to grant patents for species for which PBR protection was available.¹⁰⁹ Indeed, patents for plant varieties were in any case excluded under the laws of most European countries: under Article 53(b) of the European Patent Convention, patents were excluded for “plant and animal varieties and essentially biological processes for the production of plants and animals”.¹¹⁰ At this stage, several reasons for the exclusion of patents on plant varieties tended to be emphasized: plants were products of nature, not inventions; they could not be adequately described to fulfil the requirement of patent disclosure; and the skilled public would find it difficult to repeatedly reproduce them.¹¹¹ Additional reasons included arguments that it was ethically wrong to provide monopoly rights over living organisms, and that patents would curb the use and exchange of plants for breeding purposes.

Growing challenges were posed to the above justifications through the 1980s. Developments in patent law, where the custom grew of allowing patent disclosures to be supplemented by deposits of living material, and in molecular biology, which

¹⁰⁸ The US, because it had a system in place that allowed plant patents prior to joining UPOV, was exempted from the double protection ban proviso. [Juma, The Gene Hunters, p. 158].

¹⁰⁹ The Keystone Center, Oslo Plenary Session, Appendix A, p. 35.

¹¹⁰ OECD, Biotechnology, Agriculture and Food, p. 158.

¹¹¹ The Keystone Center, Oslo Plenary Session, Appendix A, p. 36.

made it increasingly possible to modify living things, resulted in some of the criteria for awarding patents, like novelty, inventive step and disclosure, becoming easier to fulfil.¹¹² The European biotechnology industry now began to lobby strongly with European policy makers for greater intellectual property protection. Trends in the US, meanwhile, as is discussed a little later, were towards still greater intellectual property protection, particularly the patenting of 'life'. Consequently, the European biotechnology industry demanded similar protection to that enjoyed in the US, including patents for plants. Despite the opposition of many plant breeders, the lobbying power of the Northern biotechnology industry prevailed and in 1991 UPOV was revised.¹¹³

The revision of UPOV in March 1991 encompassed the removal of the ban on double protection, thus allowing patents on plant varieties; the removal of the plant-back privilege enjoyed by farmers (although countries could limit PBR if they wished to continue the privilege); the extension of the breeder's right to harvested material produced from propagating material, which meant that the breeder could theoretically collect royalties on each reproduction of a protected variety, and could restrict the sale of harvested material; and the weakening of the 'breeders' exemption', giving the PBR holder powers to prevent the unauthorised exploitation of any variety "essentially derived" from a protected variety.¹¹⁴

The UPOV revisions generated protests from various non-governmental organisations, farmers' representatives, and others from both North and South. The removal of the plant-back privilege, in particular, provoked strong objections.

¹¹² Ibid.

¹¹³ OECD, Biotechnology, Agriculture and Food, pp. 24, 155 and 160.

¹¹⁴ Belcher and Hawtin, A Patent on Life, p. 9.

Analysts from a Northern development organisation, for instance, argued that “[T]he idea of restricting farmers from replanting their own seed is very much contrary to the traditions of North American farmers (using nonhybrids) and farmers throughout much of the world”.¹¹⁵ Even the Keystone Dialogue Group, whose members included representatives of the multinational corporations, felt constrained to recommend

that developing countries that choose to implement a PBR system adopt provisions for Farmer Plantback. This consideration is especially important in developing countries where farmers either cannot afford to buy seed every year or are not consistently reached by a seed distribution system and must therefore rely on seed saved from the previous season.¹¹⁶

Despite the various criticisms, however, the Northern states allowed the UPOV revisions to stand.

Southern concerns about the extension of the purview of PBR were thus confirmed. Southern concerns were also confirmed, as is discussed in more detail a little later, by Northern attempts to harmonize worldwide intellectual property protection through the avenue of GATT. The developed countries pressed the developing countries in the Uruguay round of GATT negotiations to implement stronger intellectual property rights for plant genetic resources.¹¹⁷ The Dunkel Draft Text, proposed in December 1991 as the basis for the settlement of the Uruguay round, thus provided that “parties shall provide for the protection of plant varieties either by patents or any effective sui generis system or any combination thereof”. This was widely interpreted as meaning that developing countries would

¹¹⁵ Ibid., p. 12.

¹¹⁶ The Keystone Center, Oslo Plenary Session, p. 15.

¹¹⁷ Ibid., p. 11.

either have to offer patent protection or PBR for plant varieties in their national legislation.

2. Formal Versus Informal Innovation

North-South differences over the relative recognition given to formal and informal innovation emerged in the mid-1980s. We have already seen in a previous section how ‘farmers’ rights’ were devised by developing countries to parallel PBR. This was part of a broader trend towards growing international interest in informal innovation.¹¹⁸ This was stimulated in considerable measure by media publicity and the activities of a variety of conservation groups, human rights organisations and others, which helped to focus international attention on the use made by local communities of the genetic diversity surrounding them, and the valuable contributions made by their traditional knowledge systems. As the concept of farmers’ rights was assimilated into the broader notion of respect for informal innovation, farmers began to be described more generically as “informal innovators”. Thus, the Keystone Dialogue Group, calling for the strengthening of farmers’ rights, warned that “a continuous expansion of the scope of formal patent rights on the one hand, and nonrecognition of informal innovation on the other, will lead to a widening of the economic gap between industrialised and poor nations”.¹¹⁹ Similarly, an UNCED report commented that

[I]n recent years, the increasing tendency to privatize plant breeding linked to breeders’ and patent rights in industrialised countries has highlighted the need for equity in the relative recognition and reward

¹¹⁸ Genetic Resources Action International (GRAIN), Improving the International System to Promote Biodiversity Conservation at the Community-Level, 1991.

¹¹⁹ Keystone Center, Oslo Plenary Session, p. 3.

accorded to the formal and informal innovation systems.¹²⁰

Consequently, perceived inequities in the relative recognition of formal and informal innovation were to play a role in the South's strategy during the biodiversity convention negotiations.

3. Patenting of 'Life'

Concerns were raised in the South in the second half of the 1980s by the extension of the coverage of Northern intellectual property protection in the field of biotechnology. The main trend which caused anxiety in the South was the trend towards the patenting of life.

In 1980, the US Supreme Court awarded a patent on appeal, after it had been rejected by the US Patent and Trademark Office, for a genetically engineered bacterium that could break down crude oil and could be used to fight oil slicks. The Court ruled that the patentee's bacterium "is not nature's handiwork, but his own; accordingly it is patentable subject matter ...".¹²¹ With biotechnology opening up further avenues for the modification of life forms, the US Patent Office announced in 1987 that it would allow the industrial patenting of higher life forms, including pets and livestock.¹²² In 1988, the first patent was granted for a genetically engineered mouse that contained human genes and was useful in cancer research.

In Europe, however, as we have seen earlier, patents were excluded for plant and animal varieties and essentially biological processes for the production of plants and animals. Pressure therefore began to mount from Europe's biotechnology

¹²⁰ A/CONF.151/PC/66, para. 40.

¹²¹ Quoted in Juma, The Gene Hunters, p. 162.

¹²² Belcher and Hawtin, A Patent on Life, p. 3.

industry for greater protection, on par with the US. Indeed, notwithstanding the exclusions provided for in the European Patent Convention (EPC), the European Patent Office granted the first patent on a plant in 1989, and on genetically engineered mice in 1991. These patents, however, remained exceptions, and were awarded on the basis of uncertainties in the definition of the terms 'variety' and 'essentially biological' used in the EPC.¹²³ Countervailing pressures from animal rights groups and environmental organisations, some plant breeders, as well as religious and other groups which questioned the ethics of "patenting life", appeared to hold the European countries back from full adoption of US style intellectual property protection.¹²⁴

In contrast to the industrialised states, practically all the developing countries opposed the patenting of life. Thus, during negotiations in GATT, while the US pressed for the extension of patent protection to all non-human life, and the EC position left decisions on the exclusion of animals and biological processes to individual countries, prominent developing countries, including India, China, Argentina, Brazil, Nigeria, and Tanzania, proposed the exclusion of materials existing in nature, along with plant and animal varieties, from patent protection.¹²⁵

Fears were raised in the South that with the patenting of life, Southern access to Northern genetic resources and the products of biotechnology would become extremely difficult. Concerns were expressed that with the patenting of genes by the North, the developing countries would find it difficult to assert their sovereignty over genetic resources - "[I]t would be beyond the scope of most Third World countries

¹²³ OECD, Biotechnology, Agriculture and Food, p. 159.

¹²⁴ *Ibid.*, p. 162.

¹²⁵ Belcher and Hawtin, A Patent on Life, p. 15.

to establish the origin of particular genes that are expressed in an organism".¹²⁶

Calls for a moratorium on the patenting of life forms, so that greater consideration could be given to the issues involved,¹²⁷ however, had to reckon with strong trends towards the worldwide harmonization of intellectual property protection.

4. Worldwide Harmonization of Intellectual Property Protection

North-South differences over Northern-inspired trends towards the worldwide harmonization of intellectual property protection emerged in the mid-1980s. The intellectual property legislation of different states varied widely at this stage. In general, the developing countries had weaker legislation than the Northern countries. Significant differences in the intellectual property protection generally provided by them included: the duration of patent protection - 20 years in the North, often less in the South; the provision of protection to processes and products - both in the North, often only processes in the South; the nature of compulsory licensing - limited powers for Northern governments, more discretionary powers for Southern governments; and the burden of proof - on the alleged infringer in the North, often on the patent holder in the South.

A variety of reasons help explain the relatively weak intellectual property legislation of the developing countries, including the desire to keep prices of goods down, efforts to encourage indigenous innovation and discourage foreign companies from entering domestic markets, and the desire to provide protection to infant industries or strong national industries with vested interests. All of these reasons

¹²⁶ Juma, The Gene Hunters, p. 166.

¹²⁷ GRAIN, Improving the International System to Promote Biodiversity Conservation, para. 55.

were in fact used earlier this century by the industrialised countries to justify restrictions on intellectual property protection - unlike its present-day legislation, for instance, the UK did not allow patenting of new chemical compounds before 1949; Germany and Japan had the same prohibition till more recently. Thus, perceptions of national interest play an important role in the scope of intellectual property protection provided by any country, and differences in these perceptions between countries help explain differences in their intellectual property legislation.

In the mid-1980s, however, a trend towards the worldwide harmonization of intellectual property protection began in the North. The prime motivation for this came from the US. The worsening balance of trade being experienced by the US prompted the examination of structural changes in US competitiveness.¹²⁸ One of the conclusions was that the US was losing its technological edge over other countries partly because of liberal technology transfer and generally lax import policies. Unfair trade practices in other countries, including barriers to imports and foreign investment and weak intellectual property protection, were claimed to be restricting US trade. As this argument gained ground, the US began to press for stronger intellectual property protection in other countries, especially the developing countries.

US interest sparked wider Northern examination of the issue. Eventually, the North's specific interest in the subject led the GATT Uruguay round of multilateral trade negotiations to establish a negotiating group on Trade Related Aspects of Intellectual Property, including Trade in Counterfeit Goods (TRIPs). GATT provided the North with a useful multilateral forum for discussion of trade related issues, and

¹²⁸ Rohini Acharya, Intellectual Property, Biotechnology and Trade: The Impact of the Uruguay Round on Biodiversity, (Maastricht: Maastricht Economic Research Institute on Innovation and Technology, 1991), p. 11.

could be used to pressure developing countries to strengthen their intellectual property legislation.¹²⁹ Although no country could be forced to sign the GATT agreement, direct pressure as well as the offer of concessions in other areas could conceivably move the developing countries in the desired direction.¹³⁰

GATT, though, was not the only forum used by the industrialised countries. The US, in particular, strengthened its trade law in 1988 to establish Special Section 301 ('Super 301'), which authorized the US Trade Representative to identify foreign countries that denied adequate and effective protection for intellectual property rights. In 1989, a priority watch list of eight developing countries was drawn up, and by 1991, three of these, India, China, and Thailand, were placed on a list of priority foreign countries allegedly demonstrating the most threatening behaviour towards US trade. The main threat used by the US against these countries was the withdrawal of concessions under the Generalised System of Preferences (GSP). Thus, for instance, in 1992, following the failure of negotiations between the US Trade Representative and the Indian government, the US suspended duty-free treatment under the US GSP on \$ 80 million worth of exports from India to the US. Justifying strong US actions at the bilateral level to pressure developing countries, the US Trade Representative, Carla Hills, said in 1989, "[O]ur businesses are losing money, but more importantly, our economy is losing the competitive edge we gain from research and development, innovation and creativity. As a nation, we simply can not afford it".¹³¹

¹²⁹ B.S. Chimni, 'Political Economy of the Uruguay Round of Negotiations: A Perspective', International Studies, Vol. 29, No. 2, April-June 1992, pp. 135-58.

¹³⁰ Belcher and Hawtin, A Patent on Life, p. 14.

¹³¹ Carla A. Hills, 'Trade-Related Aspects of Intellectual Property Rights', Department of State Bulletin, Vol. 89, No. 2152, November, 1989, pp. 55-9, p. 55.

The developing countries, in general, took strong exception to the pressure being put on them. Most of them felt they had valid reasons of national interest for preserving their existing legislation. No doubt, they also benefited in some ways at the North's expense by having weak intellectual property protection. Most developing countries could also see that the biggest beneficiaries of strengthened intellectual property protection would be the developed countries - in 1986, the developing countries held only about 4 percent of patent applications worldwide.¹³² Finally, the developing countries were dissuaded by the high costs of administering a strengthened system of intellectual property protection. In sum, for many developing countries, a strengthened system of intellectual property protection was not particularly attractive.

Thus, before negotiations over the biodiversity convention could begin in 1990, a number of issues related to the conservation of biodiversity already divided the North and the South. These issues broadly concerned the question of access to and control of plant genetic resources, the distribution of the costs and benefits of biotechnology, and trends in intellectual property protection in the North. The influence of these issues over the biodiversity convention negotiations is discussed in the next chapter.

¹³² Belcher and Hawtin, A Patent on Life, p. 35.

8. THE EVOLUTION OF INDIA'S STRATEGY IN THE BIODIVERSITY NEGOTIATIONS

This chapter analyses the evolution of India's policy and negotiating strategy with regard to the issue of biodiversity conservation. It also sheds light on the major concerns of the South in the biodiversity negotiations, and the main reasons for the emergence of North-South differences. These will be seen to be strongly connected to the North-South differences identified in the previous chapter, concerning the question of access to and control of plant genetic resources; the distribution of the costs and benefits of biotechnology; and trends in intellectual property protection in the North. India, as will become clear in the course of this chapter, makes for a useful case study because its interests encompassed all three issues, and because it played an important role in articulating Southern concerns and was an influential member of the Southern coalition.

I. THE BACKGROUND TO THE BIODIVERSITY CONVENTION NEGOTIATIONS

The issue of biodiversity conservation was considered by the Governing Council of UNEP in 1987, after a number of states had expressed their concern about the disappearance of species and the need for adequate protection of biodiversity. The Governing Council requested the Executive Director of UNEP to establish an ad hoc working group of experts to investigate "the desirability and possible form of an umbrella convention to rationalize current activities in this field and to address

other closely related areas”.¹

In November 1988, the Executive Director of UNEP convened an Ad Hoc Working Group of Experts on Biological Diversity.² Its first consideration was how to rationalize existing international conventions on biological diversity. Its conclusion was that since each convention had its own purpose, and because parties to each differed, amendments to achieve rationalisation would be difficult and time consuming. Consequently, the Working Group agreed that an umbrella convention to rationalize existing international instruments was neither desirable nor possible because of political and logistical difficulties. Instead, it endorsed a new global convention for the conservation of biodiversity, whose primary emphasis would be on the protection of habitats within national frameworks for land-use planning and species protection.³

The recommendations of the Working Group were accepted by the Governing Council of UNEP in 1989. It requested the Executive Director to convene additional sessions of the Working Group to consider “the technical content of a suitable new international legal instrument within a broad socio-economic context, as well as other measures that might be adopted for the conservation of biological diversity”.⁴

The second and third sessions of the Working Group, in February 1990 and July 1990, highlighted key issues for a biodiversity convention. These included: the

¹ UNEP, Annual Report of the Executive Director - 1987, (Nairobi: UNEP, 1988), p. 109.

² UNEP, Annual Report of the Executive Director - 1988, (Nairobi: UNEP, 1989), p. 52.

³ UNEP, ‘Conserving Biodiversity’, UNEP News, No. 22, December 1988, pp. 8-9, p. 9.

⁴ UNEP, Annual Report of the Executive Director - 1989, (Nairobi: UNEP, 1990), p. 159.

need to provide adequate funding as an incentive for developing countries to conserve their biodiversity; the relevance of intellectual property protection trends with regard to access to genetic resources as well as biotechnology; and the relevance of biotechnology in the conservation of biodiversity. The Working Group particularly stressed the importance of adequate funding, and declared that a convention without commitments to funding would be meaningless.⁵ The issues identified by the Working Group were to quickly become major points of discussion once negotiations over a convention started.

At its Second Special Session in August 1990, the Governing Council of UNEP urged the Executive Director to accord high priority to the development of a convention for the conservation of biodiversity.⁶ Accordingly, the first meeting of the Ad Hoc Working Group of Legal and Technical Experts, with a mandate to negotiate a biodiversity convention, was held in Nairobi in November, 1990. This provided the first opportunity for states to negotiate over the global conservation of biodiversity.

II. INDIA'S INTERESTS AT THE PRELIMINARY STAGE OF NEGOTIATIONS

India lies at a trijunction of the Ethiopian, Palaeartic and Oriental biogeographic provinces, and is recognized as one of the world's top twelve

⁵ UN, General Assembly, Conservation of Biodiversity, A/CONF.151/PC/28, 5 February, 1991, para. 8.

⁶ UNEP, Proceedings of the Governing Council at its Second Special Session, UNEP/GCSS.II/3, 8 August, 1990, p. 42.

'megadiversity' nations.⁷ Therefore, according to a leading Indian ecologist, the conservation of its biodiversity "must be considered an important concern not only for India, but for the world at large".⁸

The conservation of biodiversity in India had a long history even before the biodiversity negotiations began. The legislative framework for biodiversity conservation had been gradually strengthened over the years, for example with the enactment of the Wildlife (Protection) Act in 1972 (amended in 1983 and 1986), the Forest (Conservation) Act of 1980 (amended in 1988), and the Environment (Protection) Act of 1986. A network of protected areas had been established that by 1990 comprised 399 sanctuaries and 69 National Parks, including 18 Tiger Reserves.⁹ The Tiger Reserves, in particular, covering over 28,600 square kilometres of forest area, symbolised a continuing political commitment to conservation, reflecting the keen interest shown by successive Indian Prime Ministers, especially Indira Gandhi, who gave her personal backing to Project Tiger (initiated in 1973).

Nevertheless, towards the end of the 1980s, a growing sense of the inadequacy of measures to protect biodiversity began to possess the Indian government. A variety of problems, broadly arising from the negative effects of the process of development and the consequences of poverty, hindered efforts to protect biodiversity.¹⁰ Thus, in the case of forests, for instance, as against a broad national

⁷ With the exception of Australia, the remaining eleven 'megadiversity' nations are developing countries - India, China, Indonesia, Malaysia, Brazil, Colombia, Ecuador, Peru, Mexico, Madagascar and Zaire.

⁸ Madhav Gadgil, 'Conserving India's Biodiversity: The Human Context', in T.N. Khoshoo and Manju Sharma, eds., Sustainable Management of Natural Resources, (New Delhi: Malhotra Publishing House, 1992), pp. 243-55, p. 245.

⁹ MOEF, Annual Report 1989-90, pp. 24-5.

¹⁰ MOEF, National Conservation Strategy, pp. 1-2.

goal of maintaining at least 33% of the land area under forests, deforestation had led to a recorded forest cover of only 19.5%, of which only 11% constituted forests with at least 40% crown cover.¹¹

In addition to the scale of the threat to biodiversity, the government was also facing increasing criticism of actions taken by it for the protection of biodiversity. In the case of forests, for instance, the government was charged with preserving authoritarian, colonial notions of forest management at the cost of the livelihoods and lifestyles of local communities. Thus, according to one analyst,

forest communities have experienced a progressive loss of control over their habitat. This deprivation has been manifested in a series of movements. While there were intermittent uprisings in the fifties and sixties, at the present time we find 'unrest' in most forest areas. ... The increasingly militant struggles have centred around the question of regaining community control over land and forest.¹²

A combination of such criticisms, the impacts of movements for greater autonomy and self-government at the community level, and the engagement of national political parties from the mid-1980s in a serious debate over decentralization, eventually led the government in the late 1980s to reassess many of its policies to take account of the true costs of conservation. This resulted, for instance, in the revision of the National Forest Policy of 1952 in 1988. The revised Forest Policy expressed the government's intention of "[C]reating a massive people's movement with the involvement of women".¹³ It also declared that "[T]he rights and concessions from forests should primarily be for the bonafide use of the communities living within and

¹¹ Government of India, India - Country Study on the Environment, pp. 27-8.

¹² Guha, 'Forestry in British and Post-British India', p. 1891.

¹³ MOEF, 'Resolution - National Forest Policy, 7 December, 1988', in Saksena, Environmental Planning, Annexure II, pp. 201-9, p. 202.

around forest areas, specially the tribals”.¹⁴

Still, the government faced difficult problems at the end of the 1980s. On the one hand, it was committed as part of its national policy to the conservation of biodiversity: thus, one of the objectives of the 1988 Forest Policy was “[C]onserving the natural heritage of the country by preserving the remaining natural forests with the vast variety of flora and fauna, which represent the remarkable biological diversity and genetic resources of the country”.¹⁵ On the other hand, it faced ever growing costs in the conservation of biodiversity. Increasingly, displaced communities were demanding adequate compensation and rehabilitation. Increasing pressures were also being imposed by population growth and development aspirations, both in physical terms on existing protected areas, as well as in budgetary terms on the already scarce resources of the government. It thus found itself in a bind as a result of making commitments it did not have the resources to fulfil. Solving this problem was therefore to be part of the mandate of a committee established in 1988 under the chairmanship of M.S. Swaminathan to recommend a National Conservation Strategy, necessitated by the “growing degradation of India’s natural resources and the demands of a growing economy”.¹⁶ It was at this stage, moreover, that growing international attention was being focused on biodiversity conservation. This therefore provided an opportunity to the Indian government to press for international assistance in its efforts to conserve biodiversity.

Two other aspects of the international discourse over biodiversity conservation also aroused India’s interest: biotechnology, and intellectual property protection

¹⁴ Ibid., p. 204.

¹⁵ Ibid., p. 201.

¹⁶ MOEF, Annual Report 1989-90, p. 32.

trends in the North. The value of genetic manipulation had impressed Indians since the mid-1960s, when high yielding varieties of wheat and rice were successfully introduced in Indian farms, producing the Green Revolution. Developments in biotechnology in the late 1970s and early 1980s were also closely watched by India. The Sixth Five Year Plan (1980-85) of the Indian government declared that genetics would be a new priority area.¹⁷ In 1982, the government set up a National Biotechnology Board (NBTB), and in 1983, it laid out a Long-Term Plan in Biotechnology, with a focus on the areas of agriculture, health and industry.¹⁸ Eventually, it created a Department of Biotechnology in 1987 under the Ministry of Science and Technology.¹⁹

At the international level as well, the government's keen interest in developing India's biotechnology capabilities was evidenced, for instance in its vigorous and successful lobbying to ensure that a branch of UNIDO's International Centre for Genetic Engineering and Biotechnology was established in New Delhi.²⁰ Similarly, at the first summit of Heads of State and Government of the Group of 15 developing countries in Kuala Lumpur in June 1990, India obtained support for the establishment of a gene bank for medicinal plants and herbs, with itself as the inter-regional coordinator of the project.²¹ A similar proposal was also successfully pressed by

¹⁷ Clark and Juma, Biotechnology for Sustainable Development, p. 74.

¹⁸ Ibid.

¹⁹ S. Ramachandran and D.K. Biswas, 'Infrastructure Development: The Indian Perspective', in Panchamukhi and Kumar, eds., Biotechnology Revolution and the Third World, pp. 443-51, p. 448.

²⁰ Clark and Juma, Biotechnology for Sustainable Development, p. 75.

²¹ 'Developing Countries to Set Up Gene Banks', Biotechnology and Development Review, No. 1, Nov. 1991, pp. 5, 7, p. 7.

India at the SAARC summit in Male in November 1990.²²

The Indian government was also eager to see the commercial benefits of biotechnology, including the generation of export revenues, fully exploited.²³ After considerable planning, it launched the Biotech Consortium India Limited (BCIL) in December 1990. BCIL was promoted by the Department of Biotechnology and public financial institutions like the Unit Trust of India and the Industrial Development Bank of India, and was conceptualised as a science-industry consortium for accelerating the process of commercialisation of biotechnology in India.²⁴ A similar policy thrust towards encouraging private sector involvement was also revealed in the liberalisation of the agricultural seed sector in 1988, with the adoption of a new seed policy - the government now desired to encourage the private sector to enter the seed development and multiplication sector, hitherto the province of public breeding programmes controlled by the government.²⁵

These efforts, then, represented the Indian government's desire to achieve a leading position in the area of biotechnology and to stimulate investment and growth in the indigenous biotechnology industry. The biodiversity convention negotiations, with biotechnology on the agenda, therefore came at an opportune time for it to make further progress in this area by seeking the transfer of biotechnology from the

²² 'Biotechnology Cooperation in the SAARC Region', Biotechnology and Development Review, No. 1, Nov. 1991, p. 5.

²³ Sunil Mani, 'Biotechnology Research in India: Implication for Indian Public Sector Enterprises', Economic and Political Weekly, Vol. XXV, No. 34, 25 August, 1990, pp. M-115-23; S. Ramachandran, 'Government Funding and Support - The Department of Biotechnology', Current Science, Vol. 60, Nos. 9-10, 25 May, 1991, pp. 518-23, 536.

²⁴ 'Biotech Consortium India Limited - A Profile', Biotechnology and Development Review, No. 2, November 1992, p. 6.

²⁵ Srinivas, 'Private Investment in Biotechnology', p. 17.

North to the South on easy terms.

Partly because of this interest in easy access to Northern biotechnology, India found itself sharing developing country concerns, outlined in the previous chapter, over the difficulties posed by increasing Northern strictness over the conditions of information and technology flow to the South.²⁶ In addition, because of the wide differences between the levels of intellectual property protection provided in India and those prevalent in the North, India felt particularly concerned about Northern pressure for worldwide harmonisation of intellectual property rights. The 1970 Indian Patents Act differed from the legislation of most Northern states in several respects: it recognised only process patents in the food, pharmaceutical and chemical sectors - by contrast, most Northern states provided for both product and process patents; it provided for automatic compulsory licensing in the food, pharmaceutical and chemical sectors - by contrast, most Northern governments had restricted licensing powers; it set the duration of patents in the food and pharmaceutical sectors at seven years, and fourteen years in all other sectors - by contrast, most Northern states provided uniform 20-year patents; it did not allow for the patenting of life forms - by contrast, Northern states displayed a trend towards the patenting of microorganisms as well as genetically engineered plants and animals; it did not recognise importation as constituting 'working' of a patent - by contrast, most Northern states did; and it placed the burden of proof in cases of alleged infringement of process patents on the plaintiff - by contrast, in Northern states the burden of proof in the case of process patents tended to be placed on the alleged infringer. In addition, India did not

²⁶ S. Varadarajan, 'Intellectual Property and Protection of Right in Biotechnology', Current Science, Vol. 60, Nos. 9-10, 25 May, 1991, pp. 606-9.

recognise plant breeders' rights and did not have in place plant varietal protection legislation, whereas most Northern states did.

A number of considerations were involved in the formulation of the Indian Patents Act, and in India's non-recognition of plant breeders' rights. The primary objective of the Patents Act was to provide a regulatory framework to encourage indigenous innovation and industrialisation within the parameters of broadly defined national interests.²⁷ Thus, for instance, importation was not considered 'working' of a patent since it might inhibit indigenous industrialisation by allowing companies to import products rather than manufacture them locally. Similarly, process rather than product patents were recognised in several crucial sectors to encourage local innovators to find alternative routes to develop products.

The government also saw a public interest role for itself in crucial sectors like pharmaceuticals and agriculture. Thus, in the case of pharmaceuticals, the need to make drugs cheaply and widely available to the predominantly poor population of India was the main logic behind the government's encouragement of local innovation and competition by allowing only process patents, as well as its retention of broad compulsory licensing powers in order to keep the prices of essential drugs under control. In the case of agriculture too, with India primarily an agrarian economy, and with the majority of farmers being subsistence or small producers, commercial farmers with exportable surpluses constituting a minuscule minority, the government saw a public interest role for itself, for instance in making seed cheaply and widely available and in encouraging national self-sufficiency and food security. It did not want

²⁷ National Institute of Science, Technology and Development Studies (NISTADS), The Convention on Biodiversity, Intellectual Property Rights and Policy Options, (New Delhi: NISTADS, 1991), pp. 8-9.

monopolies to develop in a crucial sector like agriculture, and consequently recognised neither patents nor plant breeders' rights. Moreover, with an overwhelming public sector presence in the area of plant breeding,²⁸ and a well developed public agricultural science base, the government could afford to maintain such a policy and not provide incentives for private plant breeding.

There is no doubt that over time, domestic lobbies also gained considerably from relatively weak Indian intellectual property protection legislation, and became a powerful influence on the government, preventing it from strengthening legislation. In the pharmaceutical sector, for instance, the Indian Drug Manufacturers Association (IDMA), representing public sector and indigenous entrepreneurial interests, became a powerful proponent of the existing legislation, in contrast to the Organisation of Pharmaceutical Producers of India (OPPI), representing the multinational companies and large Indian pharmaceutical houses, which desired stronger protection. Indeed, because of weak protection, Indian drugs came to rank among the cheapest in the world, and pharmaceutical exports prospered, favouring particularly the indigenous drug industry.²⁹ The multinational companies and the large Indian pharmaceutical houses found their profit margins steadily squeezed by competition from numerous

²⁸ According to State Bank of India figures, despite the liberalisation of the seed sector in 1988, the public sector still accounted for 70 percent of the total turnover of seed multiplication and distribution in India. [Srinivas, 'Private Investment in Biotechnology', p. 17].

²⁹ A recent example suggests the sort of benefits the national pharmaceutical industry was able to gain from weak protection. The Indian Institute of Chemical Technology (IICT) has recently developed an alternative process for AZT, the AIDS drug whose patent is held by Burroughs Wellcome. This process has been licensed to three Indian pharmaceutical companies, Lupin, Cadila, and Ranbaxy Laboratories, which plan to sell the drug on the domestic market as well as export it to countries where the Burroughs Wellcome patent is not recognised. ['Alternative Process for AIDS Drug', *Biotechnology and Development Review*, No. 2, November 1992, p. 4].

local entrepreneurs. One multinational, Merck, even closed its operations in India, contending that there was inadequate intellectual property protection in the country and therefore the environment was not conducive to business. The OPPI also periodically expressed the dissatisfaction of its members with “the inadequacy of the process patent term as their processes are being copied by the smaller Indian companies”, and its president claimed that “the declining return on investments and the lack of IPR are the two most important reasons as to why multinationals are taking a re-look at their strategies”.³⁰

India’s position on intellectual property rights eventually brought it into confrontation with Northern states which were pressing for stronger intellectual property protection in developing countries. The inclusion of intellectual property rights on the agenda of the Uruguay round of multilateral trade negotiations sent the first warning signals to India. The strengthening by the US, India’s largest single trading partner, of its trade legislation to include the ‘Super 301’ provision caused further apprehension in India, apparently justifiably so when India was included in 1989 in a priority watch list of eight countries to be investigated for unfair trade practices. In an effort to create public opinion against Northern pressures on India, representatives of the IDMA, consumer organisations, lawyers, and others, established in 1988 the National Working Group on Patent Laws (NWGPL). This group asserted that the Patents Act protected Indian interests and required no amendment, and began to lobby with the government to resist bilateral pressures and pressures in GATT to change Indian intellectual property legislation.

³⁰ Quoted in V. Shankar Aiyar and Raghu Nandan Dhar, ‘Multinational Pharma Industry: Drugged Out of Shape?’, Indian Express, 22 February, 1993.

Thus, as a result of domestic pressure and its own preferences, the Indian government came to be very concerned about intellectual property protection trends in the North. The biodiversity convention negotiations consequently provided it the opportunity to argue for each state's right to determine for itself what constituted appropriate intellectual property legislation, and to argue against the erection of new barriers to the transfer of technology from the North to the South.

In sum, at the preliminary stage of negotiations on a biodiversity convention, India's interests encompassed international assistance and incentives for the conservation of biodiversity; easy access to biotechnology; and the prevention of Northern intellectual property legislation from hindering the flow of technology and information to the South.

III. THE CONFERENCE OF SELECT DEVELOPING COUNTRIES

Before the negotiations over a biodiversity convention began, India discussed its views with other developing countries at the New Delhi Conference of Select Developing Countries in April 1990. These discussions produced a list of principles that the conference stressed should be included in any convention on biodiversity. These were to serve as the basis for India's demands at the first round of biodiversity negotiations in November 1990.

The conference argued that

[T]he developing nations have bulk of the biodiversity and bear the costs of maintaining this diversity while the economic benefits from this diversity are enjoyed by the developed countries through their technological capabilities. While the formal innovations in the developed world are adequately rewarded, the informal innovations by the people of the developing countries in fostering the bio-diversity are

not recognised.³¹

It called for the inclusion of the following elements in any global convention:

a. Recognise, reward and sustain informal innovation by the local people and recognise that the protection of bio-diversity by any country is a part of the socio-economic framework of that country. The bio-diversity of a country is its national resource.

b. The burdens on a country due to protection of bio-diversity should be recognised and compensated.

c. The obligations assumed by a country to protect its bio-diversity should not result in conditionalities by the international funding agencies for developmental loans.

d. The fruits of bio-technology should be equitably made available to the developing countries which are the source of the gene pools.

e. There must be clear provisions for the transfer of the requisite technologies and resources to the developing countries.

f. There must be as much clarity in the rights of the developing countries as in their obligations.³²

Thus, the conference asserted the sovereignty of developing countries over their genetic resources. It portrayed the conservation of biodiversity as a “burden” borne by them. Through their efforts, genetic resources of considerable utility to the industrialised countries were being conserved. Consequently, the conference sought incentives for the continuation of these efforts, including the recognition and reward of informal innovation, the transfer of required technologies and resources, and the sharing of biotechnology and its products.

These demands, then, closely corresponded with India’s interests. The opportunity to press them arose when the biodiversity negotiations began in November 1990.

³¹ MOEF, Chairman’s Summary, pp. 4-5.

³² *Ibid.*, p. 5.

IV. NEGOTIATIONS OVER A CONVENTION ON BIODIVERSITY

The Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity met at its first session in Nairobi from 19 to 23 November, 1990. Representatives from 70 countries, including 52 developing countries, attended the session. They decided that the session would be used to suggest elements for inclusion in a convention, and that substantial negotiations, including election of the bureau, would commence at the next session, scheduled for February 1991.³³

The Indian delegation, following the pattern established by the ozone and climate negotiations, comprised a representative each from the MOEF and the MEA, backed up by local staff from the Indian High Commission in Nairobi. Responsibilities were divided between the MEA and the MOEF throughout the biodiversity negotiations. However, the MOEF, as the nodal agency of the Indian government for matters concerning UNEP, acted as the lead agency.

The delegations at the first session firmly established the principle of national sovereignty over natural resources as the basis for negotiations over the conservation of biodiversity. This principle, as seen in the previous chapter, had been gradually replacing the notion of common heritage. Now, at the first session of the biodiversity negotiations, the participating states agreed that “the heritage of mankind should not be reflected in the convention”,³⁴ and instead mutual agreement between countries should form the basis of access to natural resources.

³³ UNEP, Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its First Session, UNEP/Bio.Div/WG.2/1/4, Nairobi, 28 November, 1990, p. 22.

³⁴ *Ibid.*, p. 9.

India, as one of the developing countries that had expressed reservations about the FAO Undertaking at the 1985 FAO Conference, thus beginning the move towards national sovereignty, approved of the emphasis on sovereignty. It expressed its understanding that any regulatory provisions in a convention would be “for application at the national level within the context of national policies, plans and priorities”.³⁵ It also strongly opposed proposals for a ‘global list’ of conservation sites and endangered species of international importance.³⁶ The concept of a global list was mooted by conservation organisations like WWF, and was intended to focus conservation funds on biodiversity rich areas, as well as establish some notion of measurability to assess the effectiveness of conservation efforts.³⁷ India, however, saw it as undermining national sovereignty by legitimising international intervention in the management of national conservation sites, and consequently opposed it.

In accordance with its interests and the demands raised at the Conference of Select Developing Countries, India also sought international incentives for biodiversity conservation in developing countries. It called for technology transfer to developing countries on a “preferential and non-commercial basis”,³⁸ stressing particularly biotechnology transfer. It also called for the “[R]ecognition and reward of informal innovation by local people (farmers’ rights)”.³⁹ Other developing countries also made broadly similar demands. Thus, Brazil, for instance, stressed an “[O]bligation

³⁵ UNEP, Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its First Session, Addendum, UNEP/Bio.Div/WG.2/1/4/Add.1, Nairobi, 5 February, 1991, p. 36.

³⁶ Ibid.

³⁷ Fred Pearce, ‘Last-minute ‘Compromise’ Saves Biodiversity Treaty’, New Scientist, Vol. 134, No. 1823, 30 May, 1992, p. 6.

³⁸ UNEP/Bio.Div/WG.2/1/4/Add.1, p. 7.

³⁹ Ibid., p. 6.

for developed countries to transfer technologies that support biological diversity conservation and rational use to the developing countries on a non-commercial and preferential basis”.⁴⁰ And on the issue of informal innovation, Kenya argued that “[A]s a fundamental principle, the recognition and compensation of indigenous knowledge and technologies by local people need to be included”.⁴¹

Among the developed countries, the Nordic states were most sympathetic to the developing countries’ position. One of the objectives of the convention, they agreed, should be the

[R]ecognition of the special situation of developing countries, and contribution to a fair and equitable distribution of the benefits generated by utilization of biological resources between the owners and managers of these resources and those with the technological and other capacities to utilize them.⁴²

Other developed countries, however, were clearly uncomfortable with the demands of the developing countries. Japan, for instance, supported by France and Germany, argued on the question of technology transfer that

[G]overnments cannot force the private sector to transfer technology, but access to technologies should take place through joint research and development and co-operation. ... the word “preferential” should be replaced by “fair and most favourable”.⁴³

It also showed reluctance to commit itself to the notion of equitable sharing of the costs and benefits of biodiversity conservation by all states - “the idea of equitable sharing of benefits and conservation costs is complex and involves political considerations related to a financial mechanism, therefore, it requires more detailed

⁴⁰ Ibid., p. 41.

⁴¹ Ibid., p. 7.

⁴² Ibid., p. 46.

⁴³ Ibid., p. 42.

consideration in forthcoming negotiations”.⁴⁴ On the issue of intellectual property rights, countries like the US and Germany, supported by other Northern states, strongly argued that these be dealt with in other fora.⁴⁵

The Indian delegation’s assessment of the state of play at the end of the first session stressed the North-South differences:

The battle-lines for the biodiversity negotiations are quite clearly drawn. The developed countries are going to push very hard for easy access to germplasm (both domestic and wild) and regulatory regimes for the protection of forests and other habitats, but are going to drag their feet about (i) transfer of technology, specially biotechnology and (ii) sharing of profits. The developing countries will push equally hard in the other direction seeking adequate guarantees for technology transfer, financial assistance and profit sharing.⁴⁶

Significantly, the delegation felt that additional financial resources for conservation would eventually be provided by the North, revealing a belief that the issue of biodiversity conservation was a compelling one on the North’s political agenda. It therefore felt that “the ultimate stumbling blocks will be not the money but the issues of technology, IPR and profit-sharing”.⁴⁷

Based on the various proposals made by states during the first session of the Ad Hoc Working Group of Legal and Technical Experts, the Executive Director of UNEP made arrangements for a regionally balanced group of lawyers to draw up a draft convention for consideration at the next session.⁴⁸ The consequence of this initiative was that the biodiversity negotiations rapidly became structured, particularly from the third session, around the elements of successive draft conventions - unlike

⁴⁴ Ibid., p. 7.

⁴⁵ Ibid., pp. 40-1.

⁴⁶ Confidential sources.

⁴⁷ Ibid.

⁴⁸ UNEP/Bio.Div/WG.2/1/4, p. 22.

the climate change negotiations where a convention was expected to emerge from relatively unstructured and conflictual discussions between states.

(a) The Second Round of Negotiations

Procedural issues, including the election of a chairman and bureau for the biodiversity negotiations, took up considerable time during the second session, held in Nairobi from 25 February to 7 March, 1991. The general understanding was that the chairman of the bureau would be from the G-77, since the chairman for the climate negotiations was from a developed country. However, the G-77 proved unable to nominate a consensus candidate. Chile had announced the candidature of Ambassador Sánchez, its permanent representative in Nairobi, in November 1990. At the very last minute, apparently on the instigation of the Egyptian Executive Director of UNEP, believed to have personal differences with Sanchez, the African group nominated the Kenyan Environment Minister for the chairmanship. In the ensuing elections, Sanchez was able to secure relatively broad based support from both the G-77 and the developed countries, and was successful.

The divisions in the G-77 during the elections worried the Indian delegation, particularly because it felt that many developing countries did not appear to be fully aware of the bargaining leverage a united South might exercise. The delegation reported to the Indian government that

[T]he most crucial card which developing countries hold is that of access to genetic material and this would be the main lever with which they can manipulate favourable clauses with regard to technology transfer, etc. This appears quite obvious, yet is a little unclear to most of the G-77 countries. Their perspective is limited to sovereignty over natural resources and mutual agreement between countries for making

genetic material available. Our argument is that the convention should have a basic framework in which such agreements should fit.⁴⁹

In other words, it seemed to India that many developing countries were content to anticipate the recognition of national sovereignty over genetic resources and their consequent freedom to link Northern access to these resources to concessions by Northern states in the context of bilateral agreements. But what India wanted was a clear establishment within a multilateral convention of the terms of interaction between states; it was apprehensive that the bargaining leverage of developing countries in bilateral negotiations with Northern states would be undermined unless the parameters of what the developing countries could justifiably demand and what the Northern states ought to concede had already been clearly established in a multilateral convention. The Indian delegation therefore determined to impress upon the other developing countries the merits of the notion of linkage, i.e. linking Northern access to the genetic resources of the South to concessions by the North.

The Indian delegation's efforts, though, were constrained by its small size. In its report to the Indian government, the two-man delegation stressed that

[W]e were able to play a fairly crucial role, despite the tiny size of our delegation, in determining the progress of the meeting. Had the G-77 not been divided, we could even at this stage have pushed through most of our concerns. ... Given a larger delegation, we can quite easily play this role effectively.⁵⁰

The delegation's plea for larger Indian representation in the future in fact echoed similar complaints from Indian delegations to other environmental meetings, such as

⁴⁹ Confidential sources.

⁵⁰ Confidential sources.

UNEP's Governing Council meetings. The scarcity of resources,⁵¹ benign neglect, bureaucratic inertia in upgrading the traditional Indian representation at environmental meetings to reflect the enhanced foreign policy significance of the environment, and a false sense of economy in limiting the number of representatives sent out from India and instead relying on representation by embassy staff, all help explain the small sizes of Indian delegations. Nevertheless, in the course of the biodiversity negotiations, particularly as the culmination of the negotiations and UNCED drew closer, delegation sizes grew.

Negotiations during the second session did not progress much beyond preliminary statements of individual country positions which, as illustrated at the first session, reflected substantial differences of opinion between states. A general agreement did develop, however, that "a convention without firm commitments to funding to meet incremental costs likely to arise from conservation of biodiversity by developing countries would be meaningless".⁵²

(b) The Third Round of Negotiations

The Governing Council of UNEP decided in May 1991 to rename the Ad Hoc Working Group of Legal and Technical Experts as the 'Intergovernmental Negotiating Committee for a Convention on Biological Diversity', in order to better represent its

⁵¹ Environment Secretary Rajamani thus complained of losing several battles with the Finance Ministry to release foreign exchange to send more delegates to international meetings. [Rajamani interview].

⁵² UNEP, Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its Second Session, UNEP/Bio.Div/WG.2/2/5, Nairobi, 7 March, 1991, p. 15.

purpose.⁵³ This did not, however, mean a new negotiating body, nor did it have any effect on the continuity of its work.

The third session of the Intergovernmental Negotiating Committee considered a revised draft convention prepared by a regionally balanced group of senior legal advisers present at the second session.⁵⁴ The delegations at the third session directed their efforts towards amending this draft through additions of language and bracketing of controversial text to reflect their interests. They made relatively little attempt at this stage to reach compromises over the language in the draft. Their attention focused primarily on Articles 14 to 19 of the draft, encompassing access to genetic resources, access to technology, transfer of technology, financial needs and means, and financial mechanisms. These constituted the crux of the convention because much of the language in the remainder of the convention, concerning, for instance, general obligations to protect biodiversity, depended on the outcome of negotiations over these articles.

India sought explicit provisions in the draft convention for the concept of linkage. It expressed its dissatisfaction with what it termed the “weak and inadequate” provisions of Article 14, which provided that

[T]he Contracting Parties shall take appropriate measures to provide for [equitable] [preferential] access by the countries of origin of genetic material to the benefits and profits arising from commercial exploitation of the relevant genetic material. Access shall be [subject to mutual agreement between Parties concerned] [without prejudice to the negotiations on intellectual property rights within the framework of WIPO and GATT].⁵⁵

⁵³ UNEP, Annual Report of the Executive Director -1991, (Nairobi: UNEP, 1992), p. 126.

⁵⁴ UNEP, Revised Draft Convention on Biological Diversity, UNEP/Bio.Div/WG.2/3/3, Nairobi, 30 April, 1991.

⁵⁵ *Ibid.*, Article 14.5, p. 19.

The Indian delegation demanded explicit recognition of the linkage of access to genetic resources with access to biotechnology, research and development, and associated products. It also argued that the convention could not be made subordinate to decisions in other fora such as WIPO and GATT, and was able to have the offending reference dropped from the main text.⁵⁶

India sought to amend the provisions of Article 15, regarding access to technology, in favour of the developing countries. It argued that intellectual property rights ought not to hinder access to technology, and bracketed the reference to patents and property rights in Article 15.1,⁵⁷ which provided that the contracting parties would provide access to technology and information “with due regard to patents and property rights”.⁵⁸ India also introduced in Article 15.3 the concept that access to technology should be linked to a funding mechanism under the convention.⁵⁹ It also sought controls on the private sector, which generally held the technology that developing countries sought access to, to oblige it to transfer technology to the developing countries. However, it was only able at this stage to obtain the relatively mild provision that “[T]he Contracting Parties ... shall endeavour to ... stimulate the private sector ... to facilitate ... access to and joint development of environmentally sound technologies”.⁶⁰

Very similar amendments to those above were introduced by India in Article 16, relating to the transfer of technology to countries providing genetic resources.

⁵⁶ UNEP, Report of WG II on the Progress of Its Work at the Third Session of the Intergovernmental Negotiating Committee, UNEP/Bio.Div/INC.3/L.3, Nairobi, 3 July, 1991, Annex I, Article 14.5, p. 6.

⁵⁷ *Ibid.*, Annex I, Article 15.1, p. 6.

⁵⁸ UNEP/Bio.Div/WG.2/3/3, Nairobi, Article 15.1, p. 19.

⁵⁹ UNEP/Bio.Div/INC.3/L.3, Annex I, Article 15.3, p. 6.

⁶⁰ *Ibid.*, Annex I, Article 15.4, p. 7.

Indeed, during the sixth round of negotiations, Articles 15 and 16 were merged because of their similarity.

Article 18, concerning financial needs and means, reflected the developing country demand that the Northern states provide new and additional financial resources to support the conservation of biodiversity. Article 18.1 provided that

[T]he Contracting Parties, in particular the industrialised countries, have an obligation to provide genuine additional resources to cover the financial needs to implement the present Convention, and for the conservation and sustainable utilization of biological diversity at national and international levels,⁶¹

and Article 18.3 provided that the industrialised countries “have an obligation to provide the necessary funding and other financial mechanisms for ensuring technology transfer in accordance with provisions of Article 16 of the present Convention”.⁶²

Article 18.4 included the concept of agreed incremental costs, to be covered by the financial resources provided under the article.⁶³

India rejected the provision of Article 19, regarding financial mechanisms, that contracting parties “shall consider the case for co-operative arrangements with existing bilateral and multilateral sources of funding and shall examine the need for a special fund”.⁶⁴ It called for the establishment of an independent funding mechanism under the convention. It rejected the GEF as a possible mechanism, for the same reasons expressed in the climate negotiations.

Besides the above articles, India also displayed a keen interest in Article 3.3, concerning the relative importance to be accorded to in-situ and ex-situ conservation.

⁶¹ UNEP/Bio.Div/WG.2/3/3, Article 18.1, p. 22.

⁶² Ibid., Article 18.3, p. 22.

⁶³ UNEP/Bio.Div/INC.3/L.3, Annex I, Article 18.4, p. 10.

⁶⁴ UNEP/Bio.Div/WG.2/3/3, Article 19.1, p. 22.

It called for equal importance to be given to both types of conservation, reflecting its desire to develop its technological capabilities in both areas. Ex-situ conservation, in particular, involved the use of expensive and highly sophisticated technology which India was keen to access. The Indian National Bureau for Plant Genetic Resources, for instance, had instituted a search for technology for cryogenic preservation of seeds and tissues.⁶⁵ (It eventually obtained assistance in this regard from the US Agency for International Development). A document prepared by the MOEF in July 1991 for the Committee of Secretaries explained India's reasons for pressing for equal importance to be given to ex-situ and in-situ conservation: "Otherwise, it is likely that tropical developing countries will be obliged to undertake all in-situ conservation measures, while the developed world undertakes the ex-situ measures (including gene banks) and thus retains scientific and commercial advantages".⁶⁶

India, however, was isolated in its stance on ex-situ and in-situ conservation. The majority of states preferred primacy to be accorded to in-situ conservation, with only a minor, supporting role for ex-situ conservation. The other developing countries generally held the view that emphasizing only in-situ conservation would allow aid to be directed essentially to developing countries, whereas placing equal emphasis on ex-situ conservation would dilute the North's commitment to support in-situ conservation in developing countries. Although India maintained its ground, it could only obtain a relatively weak compromise that described ex-situ measures, preferably in the

⁶⁵ 'Major Expansion of NBPGR Gene Bank', Biotechnology and Development Review, No. 2, November 1992, p. 4.

⁶⁶ Confidential sources.

country of origin of genetic resources, as “also having an important role to play”.⁶⁷

Overall, at the end of the third round of negotiations, the Indian delegation had reason to feel satisfied that India’s primary interests had been included in the draft convention, although the amendments pressed by it were by no means secure. The delegation also felt that it had played a leadership role in raising the awareness of other developing countries regarding the issues involved in the negotiations, and in effectively articulating Southern concerns. It claimed that most of the developing countries “are fairly ignorant of the issues involved, but this round was very useful in alerting a number of them”.⁶⁸

The Chairman of the Intergovernmental Negotiating Committee and the Executive Director of UNEP sought to push the pace of the negotiations after the third session, and planned four more negotiating sessions in order to have a convention ready for UNCED in June 1992. The first of these sessions was held in Nairobi from 23 September to 2 October, 1991.

(c) The Fourth Round of Negotiations

Prior to the fourth round of negotiations, the Indian delegation received approval for its negotiating strategy from the Committee of Secretaries, which met on 6 August, 1991. However, the Committee, as already seen in the climate issue, cautioned that “care should be taken to ensure that we do not get isolated in the

⁶⁷ UNEP, Report of Working Group I on the Progress of Its Work at the Third Session of the Intergovernmental Negotiating Committee, UNEP/Bio.Div/INC.3/L.2, Nairobi, 3 July, 1991, Annex I, Article 3.3, p. 6.

⁶⁸ Confidential sources.

international fora”, and requested the MOEF to keep the Cabinet informed about the Indian position.⁶⁹ This caution reflected a sense of weakness and vulnerability arising from the economic crisis of 1991.

The fourth round of negotiations saw relatively detailed negotiations take place. However, protracted discussions allowed time only for extensive discussion of Articles 15, 16 and 17 in Working Group II, and Articles 5, 6 and 7 in Working Group I. The main divisions continued to be along North-South lines.

North-South differences now appeared critical to the Chairman of the Intergovernmental Negotiating Committee, Vicente Sanchez. In his opening speech at the fourth session, he expressed the view that while there had been a slackening of East-West tension, the problems caused by inequality between the North and the South remained, “threatening the stability and progress of the world as a whole”.⁷⁰ He articulated several fears of the developing countries, particularly with regard to intellectual property rights.⁷¹ Thus, in connection with the Consultative Group on International Agricultural Research (CGIAR), he expressed concern that a capacity to patent research results could mean that it would collaborate only with countries having appropriate intellectual property protection systems. He also expressed concern about consideration being given to the notion that the International Agricultural Research Centres should be free to sell their genetic material to the private sector without sharing the profits with the providers of the material. Finally, he warned that some private sector industries were proposing that developing

⁶⁹ Confidential sources.

⁷⁰ UNEP, Draft Report, UNEP/Bio.Div/N4-INC.2/L.1, Nairobi, 27 September, 1991, p. 3.

⁷¹ Ibid.

countries to which biotechnologies were transferred should be allowed to market their production only locally; this, he argued, would be “a disincentive to developing countries to acquire biotechnology”.⁷²

Indeed, the issue of intellectual property rights was the major source of North-South controversy at the fourth session. In essence, while the developing countries sought assurances that intellectual property rights would not impede the transfer of technology from the North to the South, the developed countries wanted to ensure that technology transfer took place in accordance with, and giving full respect to, intellectual property rights. Northern interests were reflected, for instance, in the brackets placed by countries like the US and Japan on controversial references to intellectual property rights in Article 15.1: thus, “[T]he Contracting Parties shall refrain ... from imposing restrictions [such as patents and other intellectual property rights] ...”.⁷³ Similarly, provisions for obligations on the private sector, sought by India at the previous session, remained in brackets. The developed countries emphasized that such obligations could not be contemplated in free market economies, whereas the developing countries joined India in arguing that where the private sector had benefited from the use of genetic resources, it should be required to share the relevant technology with the country providing the resources.⁷⁴

Concerned by the controversy over intellectual property rights, the EC made an intervention before discussions began on Article 16, dealing with the transfer of technology. It argued that

⁷² Ibid.

⁷³ UNEP, Draft Report of Working Group II - Addendum - Draft Articles on Which There is a General Understanding in Working Group II, UNEP/Bio.Div/N4-INC.2/WG.II/L/1/Add.1, Nairobi, 1 October, 1991, Article 15.1, p. 2.

⁷⁴ Ibid., Article 15.3, p. 2.

[O]nly on the basis of an intensive assessment made in close co-operation between the partners of the future programmes, a systematic approach of technology co-operation will be developed that responds to the need of the developing country and makes full use of the capabilities of the developed partner or partners.

Secondly, we would like to state that difficulties on intellectual property, may be overstated, particularly in regard to the requirements of this convention. Even so ... the EC is prepared to take its share with regard to transfer of technology, for instance by - if necessary - purchasing patents and making them part of aid packages.⁷⁵

The South's response was quick and heated. It declared that

[T]he Group of 77 and China have noted with grave concern the statement by the EC on 'Access to and Transfer of Technology'. This appears to run counter to the spirit of partnership which we had hoped would enable us to reach a satisfactory agreement on this very important Convention. The statement does not have an impact only on Article 16 but is a political statement which applies to the Convention as a whole, and therefore, militates against the entire negotiating process.

We are particularly perturbed by the attempt to delay indefinitely the transfer of technology contained in the following sentence: "Only on the basis of an intensive assessment ... a systematic approach of technology co-operation will be developed".

We are also concerned about the emphasis being placed on the assumed difficulties on intellectual property rights. ...

At this stage the G-77 and China re-iterate the following:

1. Technology transfer is a crucial element in this Convention and cannot be diluted. This requires firm commitments by the Parties, particularly by the developed countries.

2. In this Convention there should be no concept of aid to developing countries. Technology transfer must be a legal commitment if the Convention is to be a reality.⁷⁶

The discussions over Article 16 revealed the deep differences between the North and the South. The developed countries objected to the emphasis in Article 16.1 on technology transfer solely by the developed countries to the developing countries that provided genetic resources. They did not wish to see the developing

⁷⁵ 'Intervention of the Netherlands Delegation on Behalf of the European Community and Its Member States', Nairobi, 26 September, 1991.

⁷⁶ 'Statement of G-77 and China', Nairobi, 27 September, 1991.

countries, particularly the large, resourceful ones like India, Brazil and China, excused from similar obligations. And Article 16.2, perhaps the most crucial article as far as the transfer of technology was concerned, reflected the same North-South differences over the obligations of the private sector and the relevance of intellectual property rights that had plagued Article 15. The heavily bracketed text that emerged read as follows:

The Contracting Parties ... shall [endeavour to encourage] [ensure that] ... the private sector [to transfer] [transfers] ... technologies [in particular to developing countries Parties to this Convention] [notwithstanding patents and other intellectual property rights] [having due regard for patents and other intellectual property rights].⁷⁷

The third article over which extensive discussions took place in Working Group II was Article 17, dealing with technical and scientific cooperation. The discussions over this article saw an interesting division take place within the South over the relative rights of countries of origin of genetic resources and other countries providing genetic material. A few Latin American states, led by Colombia and Peru, took the position that special rights ought to be accorded to countries of origin of genetic material. Thus, under Article 17.5, for instance, they demanded that research on any genetic resource be carried out in accordance with the national legislation of the country of origin of that resource.⁷⁸ The other delegations, however, protested that such a concept was impractical and legally unacceptable. It was doubtful whether the countries of origin of each genetic resource could be identified; in many cases, it was likely that there would be more than one country of origin for the same resource. Furthermore, what Colombia and Peru were suggesting was legally unacceptable,

⁷⁷ UNEP/Bio.Div/N4-INC.2/WG.II/L.1/Add.1, Article 16.2, p. 4.

⁷⁸ Ibid., Article 17.5, p. 5.

because it undermined the sovereignty of nations by requiring, for instance, that a country with the relevant technology to carry out research in another country with the required genetic resources follow the legislation of a third country which happened to be the country of origin. Nevertheless, Colombia and Peru maintained their positions, and in fact, were only persuaded to drop their demands in the final round of negotiations, when it became quite clear that they enjoyed very little support.

Referring to the stance of Colombia and Peru on the concept of 'countries of origin', the Indian delegation complained after the session in its report to the government that the Latin American group "appears to be directionless, unpredictable and capable of irrational stands which can break the G-77 consensus".⁷⁹ Stressing the need for discipline in the ranks of the South, the delegation expressed the view that "[T]he next round being in Geneva, perhaps the G-77 mechanism can be used more effectively to achieve consensus among developing countries".⁸⁰

Discussions in Working Group I focused on Articles 5, 6 and 7, dealing with implementation measures and in-situ and ex-situ conservation. These articles were being discussed for the first time, and India's major interest was to ensure that the flexibility and independence of action of the developing countries was retained in each article, an interest shared by the other developing countries. Thus, references to national "action" plans to be developed in fulfilment of "obligations" under the convention were dropped from Article 5.1 as a result of developing country

⁷⁹ Confidential sources.

⁸⁰ Ibid.

pressure.⁸¹ Similarly, with regard to Article 6(i), which originally referred to the provision of legal and economic conditions favouring land use and management compatible with the conservation of biodiversity, the Indian delegation reported to the government that

[W]e sought to water down its contents and were largely successful in doing so since the option which received major support now refers to “[E]ndeavour to provide in so far as possible” in an unbracketed form and within brackets to “... on the basis of national legislation and in accordance with national plans, programmes and priorities ...”.⁸²

A similar dilution of obligations was sought by the developing countries in Article 6(j), which provided for the recording and use of indigenous knowledge and the encouragement of indigenous people to conserve biodiversity; the article consequently required each party to merely “[E]ndeavour to establish, maintain and strengthen”, and in brackets, “according to its national legislation, policies and capabilities”, activities directed towards the fulfilment of the purposes of the article.⁸³ Similarly, Article 7, dealing with ex-situ conservation, required obligations to be fulfilled by each contracting party only “as far as possible and as appropriate” and “in accordance with its national obligation”.⁸⁴

India also proposed a new article in Working Group I, which would tie the fulfilment by the South of its obligations to the provision by the North of effective financial and technical assistance - a proposal that clearly drew upon a similar provision in the amended Montreal Protocol. Thus, Article 7 bis, co-sponsored by 25

⁸¹ UNEP, Draft Report of Working Group I, UNEP/Bio.Div/N4-INC.2/WG.I/L.1/Add.2, Nairobi, 1 October, 1991, Annex I, Article 5.1, p. 1.

⁸² Confidential sources.

⁸³ UNEP, Draft Report of Working Group I, UNEP/Bio.Div/N4-INC.2/WG.I/CRP.14, Nairobi, 1 October, 1991, Annex I continued, Article 6(j), p. 1.

⁸⁴ UNEP, Draft Report of Working Group I, UNEP/Bio.Div/N4-INC.2/WG.I/CRP.15, Nairobi, 1 October, 1991, Annex I continued, Article 7, p. 1.

other developing countries including China, Brazil, Indonesia, Malaysia and Nigeria, stated that the fulfilment by the developing countries of their obligations under Articles 5-7 would be subject to the provision of technical resources, as appropriate, and adequate, new and additional financial resources covering on a grant basis the entire cost to them of fulfilling these obligations.⁸⁵

Finally, India reasserted its interests with regard to the importance of ex-situ conservation by strongly objecting to the reference in Article 7(a) to ex-situ measures being taken merely “to complement” in-situ measures. It bracketed the offending phrase, though it continued to receive little support for its deletion.

(d) The Fifth Round of Negotiations

The Indian delegation’s negotiating strategy received the approval of the Indian Cabinet at a meeting on 3 December, 1991, whilst the fifth session was taking place. In particular, the Cabinet approved the Indian delegation’s efforts during the fourth round of negotiations to avoid obligations and to emphasize national sovereignty. It stressed that “[I]n the negotiations we would not accept any limitation of sovereignty over natural resources or international review of national policies; and, commitments would essentially be of a contractual, rather than obligatory, nature”.⁸⁶ It also approved the demand, reiterated by the Indian delegation during the fifth session, for a separate fund for the biodiversity convention.

The fifth round of negotiations, held in Geneva from 25 November to 4

⁸⁵ UNEP, Draft Report of Working Group I, UNEP/Bio.Div/N4-INC.2/WG.I/L.1/Add.3, Nairobi, 1 October, 1991, Annex II, Article 7 bis, p. 3.

⁸⁶ Confidential sources.

December, 1991, saw discussions in Working Group II focus mainly on Articles 18 and 19, concerning financial resources and financial mechanisms, and Article 17 bis, concerning the handling of biotechnology. These broadly divided the negotiating parties on North-South lines, though the North itself appeared to be divided. By contrast, discussions in Working Group I over articles such as Article 13, regarding global lists, and Article 24, regarding the establishment of a Science and Technology Committee, tended to divide opinion on non-partisan lines.

The South, as hoped for by the Indian delegation at the previous session, was united over North-South issues during the fifth session. The Indian delegation reported to the government that “[T]he G-77 ... met only once during this round but there were no major differences among the G-77 members (and China) to necessitate much consultation”.⁸⁷

Protracted discussions took place during the fifth session over Articles 18 and 19 concerning financial resources and mechanisms. These were seen by some delegations from the South as being the most crucial articles in the biodiversity convention. Significantly, the Indian delegation did not. It regretted in its report to the government that “[T]he core issues of access to genetic material, technology transfer and IPRs were hardly touched in WG II during this round”.⁸⁸ This statement, the position taken by the delegation at earlier sessions with regard to technology transfer, and its insistence on ex-situ conservation being accorded equal importance to in-situ conservation, all reflect the importance attached by India to making gains in the area of technological capability. Financial resources were

⁸⁷ Confidential sources.

⁸⁸ Ibid.

important, but primarily as a means to the end of achieving access to Northern technology.

The Northern delegations also participated keenly in the discussions over Articles 18 and 19, apparently with the intention that once the issues were clarified, they could come back with a clear brief for the next session. Indeed, OECD Ministers for the Environment were to meet in Paris during the fifth session, and announced important policy decisions with regard to the financing of global environmental issues.⁸⁹

The main North-South differences over Articles 18 and 19 related to the relative obligations of the developed and the developing countries to provide financial resources, and whether a new, dedicated funding mechanism ought to be created for the convention or whether an existing mechanism like the GEF could be used. The developing countries, adopting the same position that they had in the climate negotiations, argued that the GEF was an inappropriate mechanism for the biodiversity convention. They called for a separate fund, contributed to on a mandatory basis by the developed countries, but controlled and operated by the parties to the convention in a democratic fashion.

Northern states like the US, UK and Japan, however, opposed the imposition of mandatory obligations on Northern states to provide financial resources for conservation activities in developing countries. They wanted to retain flexibility and independence of action in the resources that they might allocate towards biodiversity conservation and the criteria governing such allocations. Moreover, they resisted what they perceived as the idea implicit in the imposition of mandatory obligations

⁸⁹ See Chapter 6, pp. 175-7.

specifically on developed countries, that the latter were somehow duty-bound, for reasons stretching beyond notions of mutual interest to include a degree of moral responsibility for the depletion of biodiversity in developing countries, to aid the South. With regard to a financial mechanism, they supported the GEF, albeit the modified GEF promised by the OECD Environment Ministers, as the appropriate mechanism for the convention. Their reasons for supporting the GEF were identical to those that operated in the climate change issue, discussed earlier in this thesis.

Despite the opposition of key Northern states, however, several Northern countries including the Nordic states, the Netherlands, Canada and Australia, appeared to assume conciliatory positions with regard to the South's demands. The Indian delegation therefore reported to the Indian government that "a number of developed countries are willing to provide a new, dedicated funding mechanism under this Convention".⁹⁰ It expressed its belief that forces favourable to the South were at work in the North:

The general feeling is that we may be able to obtain commitments for new and additional funding for the Biodiversity Convention, since conservation is a subject which generates pressures of public opinion on the Governments of the Western countries. Also, the biotechnology industry specially in Europe is likely to exert domestic pressures to promote conservation efforts in the South.⁹¹

A negotiating group chaired by Canada and including some developed countries that appeared favourably inclined towards the South and some developing countries, produced a compromise text for Articles 18 and 19. Article 18.2 provided two alternatives for future discussion - one which committed the developed countries to provide adequate, new and additional financial resources to enable the developing

⁹⁰ Confidential sources.

⁹¹ Ibid.

countries to achieve the objectives of the convention, and the other which provided that all parties, “and in particular developed countries”, would undertake to provide the resources to meet the agreed incremental costs to the developing countries of fulfilling their obligations under the convention.⁹² Article 18.3 linked the extent to which the developing countries would meet their obligations under the convention to the availability of resources to meet their agreed incremental costs.⁹³ Article 19.1 provided for a conservation fund, contributions to which “shall be mandatory for Contracting Parties which are developed countries”,⁹⁴ while Article 19.2 provided that the fund would be administered through an agency to be decided by the Conference of the Parties.⁹⁵

The provisions of Articles 19.1 and 19.2, however, were immediately challenged by Northern states like the US, UK, Japan and Germany, for the reasons mentioned earlier. They bracketed the two articles, and provided alternatives (which themselves became heavily bracketed as a result of the reciprocal opposition of the developing countries). Their alternative to Article 19.1 imposed an obligation on all contracting parties, not just the developed countries, to provide the resources which the developing countries required to meet their agreed incremental costs of complying with the provisions of the convention, as well as the resources needed for the transfer of technology and the provision of access to the benefits arising from the commercial exploitation of genetic resources.⁹⁶ Their alternative to Article 19.2 provided that the

⁹² UNEP, Fourth Revised Draft Convention on Biological Diversity With Comments and Proposals by the Executive Director, Article 18.2, p. 28.

⁹³ Ibid., Article 18.3, p. 28.

⁹⁴ Ibid., Article 19.1, p. 28.

⁹⁵ Ibid., Article 19.2, p. 29.

⁹⁶ Ibid., p. 28.

financial mechanism would be administered “through the evolving Global Environmental Facility”.⁹⁷

Article 17 bis concerning the handling of biotechnology and the distribution of its benefits also generated North-South differences. The developing countries sought to ensure in Article 17 bis.3 that they received priority access to the use and benefits of biotechnology products that utilized their genetic resources. But the Northern states argued that they also ought to be covered by such a proviso - if they were able to provide genetic resources from in-situ or ex-situ sources, then they ought to enjoy the same privileges available to the developing countries that performed this service. Developing countries like India, however, rejected this argument. In their view the purpose of the article was to ensure that the developing countries gained access to the benefits of biotechnology that the North was already enjoying, and if the North was to be included in the article on the same footing as the South, then it might imply a reverse flow of benefits to the developed countries. The issue was not resolved at the fifth session.⁹⁸

Articles 17 bis.4 and 17 bis.5 were introduced by Malaysia as a means of obtaining assurances from the Northern states that any release of genetically modified organisms by them in the developing countries would be governed by the same safety regulations observed by them at home. This was to assuage developing country fears regarding biosafety, identified in the previous chapter. The industrialised countries were generally sympathetic to the Malaysian proposal. The US, though, took exception to any mention of genetically modified organisms in the convention,

⁹⁷ Ibid., p. 29.

⁹⁸ Ibid., Article 17 bis.3, p. 27.

claiming that this was not within the purview of a convention on biological diversity. However, it found itself isolated in this stance, and consequently, in an effort to render the articles practically unworkable, sought to expand their scope to include the release of all “living organisms resulting from biotechnology”.⁹⁹

Article 17 bis.4 also included the notion of ‘prior informed consent’, i.e. the notion that any introduction of genetically modified organisms into a country would follow only after the receiving country, fully equipped with all the available information about the use and safety regulations required in handling the organisms, had given its consent. The US again, but this time with a little more support, particularly from Britain, opposed the notion of ‘prior informed consent’, arguing that this had complex technical and legal connotations and would require a great deal of often unnecessary formalized paper work.

A further clause sponsored by India, Malaysia and China was introduced in Article 17 bis, and bracketed without discussion. This clause required each party to “ensure that the private sector within its jurisdiction also undertakes obligations contained in paragraphs 1-5 of this Article”.¹⁰⁰ As with Articles 18 and 19, no compromise was reached between the North and the South over Article 17 bis, and their differences remained unresolved at the end of the fifth session.

Working Group I, in contrast to Working Group II, saw less North-South friction. The main issues it discussed, including global lists, the establishment of a scientific and technological committee, and reporting requirements for states, tended to divide opinion on non-partisan lines.

⁹⁹ Ibid., Article 17 bis.4, p. 27.

¹⁰⁰ Ibid., Article 17 bis.6, p. 27.

On the issue of global lists, India, which had already at the first session expressed its strong opposition to the concept because it saw it as undermining national sovereignty by legitimising international intervention in the management of national conservation sites, continued to express the same reservations at the fifth session as well. It also joined a number of other delegations, from both the North and the South, such as the US, UK, Sweden, Malaysia, Indonesia, and Brazil, in voicing the view that the preparation of global lists was not the best way of using the limited financial and human resources that were available for the conservation of biodiversity.¹⁰¹ However, a number of other delegations, again from both the North and the South, such as Australia, France, Switzerland, Chile and Ecuador, saw merit in the concept of global lists. They argued that these lists would focus conservation funds where they were most urgently needed or where they would yield maximum global benefits, and would thus establish some notion of measurability to assess the effectiveness of the biodiversity convention. The negotiating parties eventually agreed to postpone a decision on the subject.

With regard to Article 24, concerning a subsidiary body for scientific and technological cooperation, India, worried about the constraints such a body might place on the freedom of action of the developing countries, sought to question the need for the establishment of an institutionalised, standing body at this stage. Its concern was that a subsidiary body, by probably being less than universal in its membership, and particularly if it were to comprise of independent experts rather than government representatives, would take away many of the advantages of

¹⁰¹ UNEP, Report of Working Group I, UNEP/Bio.Div/N5-INC.3/WG.I/L.1/Add.1, Geneva, 29 November, 1991, p. 2.

multilateralism that the developing countries would enjoy in the conference of the parties. A subsidiary body might, for instance, establish international standards for biodiversity conservation and provide the basis for future sanctions against countries that failed to meet these standards, most likely the developing countries. Northern states like the US, UK and Germany, while not sharing Indian concerns, were nevertheless amenable to the postponement of a decision on the need for a scientific and technological committee until the first meeting of the conference of the parties. Other countries, however, from both the North and the South, such as Australia, Sweden, the Netherlands, France, Argentina, Chile, Ecuador and Tanzania, supported the establishment of a committee that would provide technical and scientific guidance on a continuing basis to the conference of the parties. A final decision on the issue was eventually postponed to the second reading of Article 24.

Finally, Article 25, concerning national reports, required each contracting party to place before the conference of the parties reports on the actions it had taken to implement the convention. It is noteworthy that the developing countries did not oppose this requirement, in marked contrast to their strenuous objections over national reports during the climate negotiations. The developed countries did not press for the attachment of a strict review element to the reporting provision under Article 25, and consequently, the developing countries did not feel that inadequacies in their conservation efforts might be challenged or punished by sanctions by the North. Moreover, the developing countries were in any case linking their fulfilment of obligations under the convention to the provision of technological and financial resources by the North, as for instance in Article 18.3 mentioned earlier. Indeed, India sought to strengthen the position of the developing countries by pressing for

inclusion in the national reports of actions taken by each party with regard to its obligations under Articles 5 and 15-18, the latter, particularly, concerning technology transfer and the provision of financial resources.¹⁰²

(e) The Sixth Round of Negotiations

The critical articles in the biodiversity convention were all discussed during the sixth round of negotiations, held in Nairobi from 6 to 15 February, 1992. Considerable progress was made in narrowing North-South differences. This was important, with only one session remaining after this to produce a convention.

The sixth round saw a significant narrowing of North-South differences in Working Group II over Articles 14 and 15, dealing with access to genetic resources and access to and transfer of technology. The Indian delegation reported to the Indian government that the new text of Article 14 “takes care of almost all our major concerns”.¹⁰³ This claim, though, appeared to be optimistic. Most of the clauses of Article 14 represented little more than acknowledgements of the principle of national sovereignty. Moreover, Article 14.6, perhaps the most crucial clause in the article, had changed little from the formulation that India had described during the third session as “weak and inadequate”.

Article 14.1 stressed the sovereignty of states over their natural resources, thus reflecting the official abandonment of the common heritage principle: “Recognizing the sovereign rights of States over their natural resources, the authority to determine

¹⁰² UNEP, Fourth Revised Draft Convention, Article 25, p. 33.

¹⁰³ Confidential sources.

access to genetic resources rests with the national governments and is subject to national legislation".¹⁰⁴ Under Article 14.2, each party would "endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties".¹⁰⁵ Article 14.3 declared that "[A]ccess, where granted, shall be on mutually agreed terms and subject to the provisions of this Article".¹⁰⁶ The terms provided were that: access would be "subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party";¹⁰⁷ each party would endeavour to develop and carry out scientific research based on genetic resources provided by other parties "with the full participation of, and where possible in such Contracting Parties";¹⁰⁸ and under Article 14.6, each party would take appropriate measures "to [promote and advance] [ensure] fair and equitable sharing" of the benefits arising from the utilization of genetic resources with the parties providing such resources.¹⁰⁹ The bracketed phrase "ensure" in Article 14.6 was pressed by the developing countries, while the milder phrase "promote and advance" was favoured by the developed countries. If the latter phrase were to be selected, the clause would in effect be little different from the clause India had found objectionable during the third session.

Articles 15 and 16 of earlier drafts of the convention were basically similar, and were now merged into a single article. The main interests of the South as far as the old articles were concerned had been to ensure the following: intellectual property

¹⁰⁴ UNEP, Draft Report of Working Group II, UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, 14 February, 1992, Article 14.1, p. 7.

¹⁰⁵ Ibid., Article 14.2, p. 7.

¹⁰⁶ Ibid., Article 14.3, p. 7.

¹⁰⁷ Ibid., Article 14.4, p. 7.

¹⁰⁸ Ibid., Article 14.5, p. 7.

¹⁰⁹ Ibid., Article 14.6, p. 7.

rights that were supportive of the transfer of technology to the South, rather than a hindrance; obligations on the private sector to facilitate the transfer of technology; access for developing countries providing genetic resources to the technologies that used these resources; and linkage of technology transfer to a financial mechanism under the convention. All these interests were pressed in the new Article 15.

Article 15.1 represented a general commitment by parties to transfer environmentally sound technology, including biotechnology. Article 15.2 sought to provide favourable terms for technology transfer to developing countries: access to and transfer of technology would be provided “under [fair and reasonable] [fair and most favourable] [preferential and concessional] conditions and, where necessary, in accordance with the financial mechanism established by Articles 18 and 19”.¹¹⁰ The mild reference to “fair and reasonable” access to technology was supported by the developed countries, while the developing countries preferred stronger references, using the “fair and most favourable” or “preferential and concessional” terminologies. Clearly, if the mild reference went through, it would dilute the South’s gains. Moreover, the linkage of technology transfer to the financial mechanism only “where necessary” constituted a source of future disagreement over what conditions created such necessity.

The remaining three clauses of Article 15 appeared on the surface to be quite favourable to the South. Yet, even in these, the developed countries preserved their flexibility in fulfilling obligations. Article 15.3, for instance, provided that each party would take

legislative, administrative or policy measures, as appropriate, with the

¹¹⁰ UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Article 15.2, p. 8.

aim that Contracting Parties [in particular those] that are developing countries which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms [notwithstanding patents and other intellectual property rights].¹¹¹

The Indian delegation reported to the Indian government that this paragraph “is the one India has been seeking” and “is now virtually to our satisfaction”.¹¹² Yet, this paragraph did not actually constitute the guarantee the developing countries would have preferred to have, given its caveats that measures would be “as appropriate” and “on mutually agreed terms”.

Similarly, Article 15.4, appeared to oblige the private sector to provide access to its technology to the developing countries, but did not actually guarantee that it would do so. It provided that each party would take “legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology”.¹¹³ The Indian delegation again preferred to stress the positive elements in the article, reporting to the Indian government that

[A]s far as we know, this is the first time ever that such a clause has been agreed to and a successful implementation of this will virtually ensure the attainment of our objectives with regard to technology transfer as far as this convention is concerned.¹¹⁴

Yet, the crucial question surely was to what extent the “successful implementation” hoped for by the Indian delegation would take place. Nothing in the article itself indicated any compulsion on the private sector to promote access to its technology.

Finally, Article 15.5, which the South hoped would ensure that intellectual

¹¹¹ Ibid., Article 15.3, p. 8.

¹¹² Confidential sources.

¹¹³ UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Article 15.4, p. 8.

¹¹⁴ Confidential sources.

property rights did not obstruct the transfer of technology, in fact saw this aim qualified such that intellectual property rights retained primacy. Thus,

[T]he Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of the present Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to the objectives of this Convention.¹¹⁵

Thus, the South appeared to make certain gains with regard to Article 15 inasmuch as certain principles it strongly advocated, for instance that developing countries providing genetic resources ought to have easy access to the technologies that used those resources, or that obligations to facilitate technology transfer ought to be imposed on the private sector, were accepted. However, these gains were qualified by the fact that there was little in Article 15 that obliged any party to implement these principles with sincerity. The North, moreover, had successfully evaded Southern attempts to fix responsibility for technology transfer specifically on its shoulders,¹¹⁶ even though many of the obligations under Article 15 would still affect primarily the developed countries. Consequently, the ability of the developing countries to make concrete gains under Article 15 would mainly depend upon their ability to secure favourable “mutually agreed terms” in their individual dealings with the developed countries - a situation that developing countries like India had all along sought to avoid because of the generally limited leverage they perceived developing countries to have in bilateral negotiations with developed countries.

Article 17 bis, dealing with the handling of biotechnology and the distribution of its benefits, used similar language to that used in Articles 14 and 15 in its first two

¹¹⁵ UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Article 15.5, p. 8.

¹¹⁶ See pp. 283-4.

clauses. Article 17 bis.1 required each party to take “appropriate measures to [promote and advance] [ensure] the participation in biotechnological research activities” by parties, “especially developing countries”, which provided the genetic resources for such research.¹¹⁷ Article 17 bis.2 provided that each party would

[ensure priority access] [promote and advance fair and equitable access] [take appropriate measures to promote and advance priority access] by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources [originating in and/or] provided by those Contracting Parties. Such access shall be on mutually agreed terms.¹¹⁸

The final outcome of these two clauses therefore depended on the resolution of similar bracketed language in Articles 14 and 15. References in these clauses to “especially developing countries” were attempts to address differences which had arisen at the fifth session over the applicability of these clauses to the developed countries; the benefits of these clauses would thus devolve upon all parties, but “especially developing countries”. This semantic compromise, though, clearly did little to address the real concerns of the developing countries, and represented one more instance of the South settling for a compromise considerably short of its expressed goals.

Articles 17 bis.3 and 17 bis.4 were slightly modified versions of the clauses concerning genetically modified organisms that Malaysia had introduced during the previous session. The new clauses incorporated the demand made during the fifth session by India, China and Malaysia that the private sector should also undertake the obligations represented in these clauses. Thus, whereas the earlier clauses imposed broad obligations on the contracting parties, the new clauses required each party to

¹¹⁷ UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Article 17 bis.1, p. 10.

¹¹⁸ *Ibid.*, Article 17 bis.2, p. 10.

impose obligations in turn on “any natural or legal person under its jurisdiction”.¹¹⁹ Although the majority of developed and developing countries went along with the new clauses, the US maintained its opposition to the inclusion of genetically modified organisms in the convention and the provision for prior informed consent.¹²⁰ On its insistence, bracketed references to “biotechnology products” (replacing “living organisms resulting from biotechnology”) remained in Articles 17 bis.3 and 17 bis.4.

Compromises over Articles 18 and 19 were not possible at the sixth session, and the negotiating parties agreed to postpone their discussions to the final session. At the fifth session, as already seen, a compromise suggested by a negotiating group chaired by Canada had been challenged by key developed countries like the US, UK, Japan and Germany. At the sixth session, these countries continued to express their reservations. The US delegation, in particular, made it clear that it could neither agree to a new financial mechanism under the convention, nor to the concept of new and additional financial resources. The G-77 therefore decided that negotiations over Articles 18 and 19 were best postponed, since otherwise, as the Indian delegation reported, “we could damage the acceptable text which had emerged as one option from the Geneva Round. In other words, with the US position clearly known, further negotiation could only confuse issues”.¹²¹

The G-77 issued a statement giving the US and other delegations more time to consider the issues involved, and called for discussions over Articles 18 and 19 to be concluded at the final session. The G-77 appeared to believe that the US would

¹¹⁹ UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Article 17 bis.3, p. 10; Article 17 bis.4, pp. 10-11.

¹²⁰ Abby Munson, ‘Genetically Manipulated Organisms: International Policy-Making and Implications’, *International Affairs*, Vol. 69, No. 3, July 1993, pp. 497-517.

¹²¹ Confidential sources.

find itself isolated and come under pressure from the other developed countries to relent during the final round of negotiations. The Indian delegation, for instance, reported to the Indian government that “the US is largely isolated on this issue and there is a possibility that even if the US does not agree, the concept of a new financial mechanism will be carried through by a majority during the final round”.¹²² The G-77 was also cognisant that, as the Indian delegation reported, “[A] lot could depend on the outcome of the climate change negotiations”.¹²³ Discussions over financial resources and mechanisms for the climate convention could be expected to throw up solutions that would be applied to the same issues in the biodiversity convention.

Working Group I made limited progress in removing brackets from the text considered by it. However, its deliberations created greater understanding between the delegations and it appeared very likely that it would achieve a consensual text at the final round. The issue of global lists, though, still produced a stalemate. A number of countries including India, Pakistan, Brazil, Sweden, Canada and the US favoured deletion of the article altogether. Others like Australia, Switzerland, Chile and Ecuador favoured retention of the article. The issue was eventually postponed for a decision to the final round of negotiations.¹²⁴

An unresolved issue from the previous session concerned a science and technology committee. Such a body now appeared to enjoy majority backing. Sceptical countries like India were sought to be reassured by providing for the body

¹²² Ibid.

¹²³ Ibid.

¹²⁴ UNEP, Articles Prepared by Working Group I, UNEP/Bio.Div/N6-INC.4/WG.I/L.2/Add.3, Nairobi, 10 February, 1992, Article 13, p. 10.

to comprise government representatives and to be open to participation by all parties. Moreover, it was to operate under the authority of, and in accordance with guidelines laid down by, the Conference of the Parties. Its primary function would be to respond to requests for information and advice from the Conference of the Parties. It would not take independent actions, nor review the actions of states. Another unresolved issue from the fourth session concerned Article 7, dealing with ex-situ conservation. India, as already seen, wanted to accord equal importance to ex-situ and in-situ conservation. At the sixth session, when the issue came up again, the UK, with relatively wide support, stressed that ex-situ conservation would be “for the purpose of complementing in-situ measures”. India resisted this, but continued to remain relatively isolated. Its delegation therefore felt obliged to suggest to the Indian government that “[I]t may be advisable to take a fresh view on this bracketed text prior to the next session”.¹²⁵

Finally, Working Group I saw a clarification issued by the G-77 and China regarding the elements they wished to include in the preamble and the articles dealing with fundamental principles and general obligations under the convention. They reiterated well-established positions on sovereignty, access to technology and genetic resources, technology transfer, and funding. They also declared that “[T]he fulfilment of the obligations under this Convention by developing countries would be subject to the effective provision to them of adequate, new and additional resources and of technology transfer to them on preferential and non-commercial terms”.¹²⁶

¹²⁵ Confidential sources.

¹²⁶ UNEP/Bio.Div/N6-INC.4/WG.I/L.2/Add.3, Appendix, ‘Elements for Inclusion in the Preamble/Fundamental Principles/General Obligations as Proposed by the Group of 77 and China’, pp. 12-3, p. 13.

(f) Solidarity Amongst the Developing Countries

With the conclusion of negotiations approaching, the developing countries sought at various meetings to demonstrate their unity and to reiterate joint Southern positions in the hope of securing a favourable resolution of the controversial, bracketed texts in the convention. One of the first such meetings, in fact held while the sixth session was taking place, was the regional conference of the Amazonian states.¹²⁷ Attached to the Manaus Declaration on UNCED adopted by this conference was the Joint Position Document of the Amazonian Countries for UNCED, which reiterated the South's interests in the biodiversity convention. This document emphasized "the necessary relationship between access to the resources of biological diversity and particularly access to the biotechnology originating from it, as well as to the technology necessary for its conservation". It stressed that the "[T]ransfer of new environmentally sound technologies to developing countries is a condition for the fulfilment of ... commitments to be made". The conference declared that "new and additional financial flows must be assured to developing countries under adequate conditions". Finally, it took the same position on the financial mechanism that it took with regard to the climate convention, laying stress on the need for equity between the developed and the developing countries in the management of the mechanism and rejecting the GEF as a "clearly limited and insufficient instrument".

Soon after the meeting of the Amazonian countries, the ASEAN states held their regional conference in Singapore. This conference stressed that "[T]he burden

¹²⁷ See Chapter 6, pp. 183-4.

of conservation should be shared equitably by the developed and developing countries”, and called for funding mechanisms “to compensate developing countries for their sacrifices and opportunity costs foregone for conserving biological diversity”.¹²⁸ The ASEAN states emphasized that

[A]ccess to biological diversity should be based on mutually agreed terms and the principle of prior-informed-consent so that the countries providing the genetic resources have preferential access to the results of research, products developed, and benefits and profits from genetic resources.¹²⁹

On the issue of technology transfer, they stressed that “[T]ransfer of technologies relevant to the conservation and sustainable use of biological diversity, as well as transfer of technologies that make use of genetic resources, should be on concessional and preferential terms”.¹³⁰

The meeting of SAARC Environment Ministers in New Delhi in April 1992 reiterated the demands made by the Amazonian countries and the ASEAN states. The Ministers stated that “[T]he SAARC region is rich in biodiversity and has borne considerable cost in the conservation of these resources over the ages”, and stressed that “[T]hese efforts must be recognized and supported by the international community”.¹³¹ They demanded that the biodiversity convention

clearly establish the linkage between access to genetic resources and the transfer of biotechnology which uses such resources, research and development efforts in the country of origin and sharing of the results of scientific research and of commercial profits.¹³²

¹²⁸ Singapore Resolution on Environment and Development, Singapore, 18 February, 1992, Annex, ‘ASEAN Common Stand on the UNCED and Related Issues’.

¹²⁹ *Ibid.*, Annex, ‘ASEAN Common Stand on the UNCED and Related Issues’.

¹³⁰ *Ibid.*, Annex, ‘ASEAN Common Stand on the UNCED and Related Issues’.

¹³¹ Joint Communique of the SAARC Ministers of Environment, New Delhi, 8-9 April, 1992, para. 10.

¹³² *Ibid.*, para. 10.

They called for the satisfactory resolution of intellectual property rights issues “so that they do not obstruct the transfer of technology, including biotechnology”.¹³³ Technology transfer, they argued, should be on “preferential, non-commercial and concessional terms”.¹³⁴ Finally, they called for “the provision of adequate, new and additional funds to the developing countries”, and demanded a distinct funding mechanism for the convention.¹³⁵

A final effort at consolidating the South’s position was made at the Second Ministerial Conference of Developing Countries on Environment and Development, held in Kuala Lumpur from 26 to 29 April, 1992. The Kuala Lumpur Declaration underlined the need for the biodiversity convention

to establish mechanisms to give effect to the rights of countries which possess biological and genetic resources in in-situ conditions. In this context, we reiterate that the Convention on Biological Diversity must include legally binding commitments to ensure the link between the access to the genetic material of developing countries and the transfer of biotechnology and research capabilities from developed countries, as well as sharing of commercial profits and products derived from the genetic material.¹³⁶

The Declaration called upon the developed countries to provide new and additional financial resources,¹³⁷ and stressed that “a fund should be established under this Convention to make it possible for developing countries to fulfil their obligations under the Convention”.¹³⁸ Finally, on the controversial issue of global lists, as a result of the vehement opposition of countries like India to the concept, the meeting reached a consensus that “[W]e are of the view that providing for a ‘Global List of

¹³³ Ibid., para. 10.

¹³⁴ Ibid., para. 9.

¹³⁵ Ibid., para. 8.

¹³⁶ Kuala Lumpur Declaration on Environment and Development, para. 26.

¹³⁷ Ibid., para. 12.

¹³⁸ Ibid., para. 29.

Biogeographic Areas of Global Importance' under the Convention on Biological Diversity is not necessary".¹³⁹

V. THE CONVENTION ON BIOLOGICAL DIVERSITY

The seventh and final round of negotiations, held in Nairobi in May, 1992, produced an unbracketed text of the convention on biological diversity. The controversial issues from previous sessions were all resolved, though not to the complete satisfaction of either the North or the South.

The objectives of the convention reflected the South's insistence that these should take account not only of the need for biodiversity conservation but also the need to share the costs and benefits of conservation. The objectives were therefore declared to be

the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.¹⁴⁰

Article 8, reflecting the developing countries' desire to retain independence of action and flexibility in taking conservation measures,¹⁴¹ required states to undertake actions for in-situ conservation only "as far as possible and as appropriate".¹⁴² Similarly, in one of the very few references to indigenous people in the convention, each state was required to

¹³⁹ Ibid., para. 28.

¹⁴⁰ UNEP, Convention on Biological Diversity, (Nairobi: UNEP, 1992), Article 1.

¹⁴¹ See pp. 285-7.

¹⁴² Convention on Biological Diversity, Article 8.

[S]ubject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.¹⁴³

Taking the chapeau of the article into account, the rights of indigenous people were thus to be protected only “as far as possible and as appropriate” and “subject to national legislation”, in effect allowing states to preserve the status quo if they so desired.

Article 9, dealing with ex-situ conservation, saw the debate over the importance to be accorded to ex-situ measures resolved in favour of the majority view, overriding the isolated view of India and a few other countries. Thus, ex-situ conservation measures were to be taken “predominantly for the purpose of complementing in-situ measures”.¹⁴⁴

Article 15, regarding access to genetic resources, reiterated the sovereignty principle and all the other clauses agreed at the previous session. Differences over whether the sharing of the results of research and development and other benefits ought to be “promoted and advanced” or “ensured” were resolved by resorting to the semantic device of declaring such sharing to be the “aim” of the contracting parties. Thus,

[E]ach Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from

¹⁴³ Ibid., Article 8(j).

¹⁴⁴ Ibid., Article 9.

the commercial and other utilization of genetic resources with the Contracting Party providing such resources. Such sharing shall be upon mutually agreed terms.¹⁴⁵

In effect, the firm guarantee the developing countries wanted, that the benefits from the utilization of genetic resources would be shared with the countries providing those resources, was not forthcoming. Furthermore, since such sharing was to be on “mutually agreed terms”, the results were likely to be determined by the relative bargaining power of each state. These features constituted a setback for Southern goals.

Article 16, dealing with access to and transfer of technology, also saw the emergence of compromises that yielded little to the South. Article 16.2 provided that access to and transfer of technology to the developing countries “shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21”.¹⁴⁶ It then qualified this apparent gain for the South by adding, on Northern insistence, that “[I]n the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights”.¹⁴⁷ Similarly, the opening of bracketed text in Article 16.3 yielded few benefits to the South. The developed countries were not excluded from access to and transfer of technology so long as they were able to provide genetic resources, despite developing country opposition to this. In addition, Article 16.3 provided that technology protected by

¹⁴⁵ Convention on Biological Diversity, Article 15.7.

¹⁴⁶ *Ibid.*, Article 16.2.

¹⁴⁷ *Ibid.*, Article 16.2.

intellectual property rights would be transferred “where necessary” and “on mutually agreed terms”, and “in accordance with international law and consistent with paragraphs 4 and 5 below”.¹⁴⁸ Paragraph 5 stressed that cooperation over the issue of intellectual property rights would be “subject to national legislation and international law”.¹⁴⁹ In effect, there was no change in the status quo, and the South’s desire for guarantees that intellectual property rights would not hinder technology transfer was not met.

Article 19, concerning the handling of biotechnology and the distribution of its benefits, also saw compromises that limited Southern gains. Article 19.1 sidestepped the controversy over whether participation in biotechnological research activities by countries providing genetic resources would be “promoted and advanced” (favoured by the North), or, more strongly, “ensured” (favoured by the South). Instead, it “provided for” such participation. Thus,

[E]ach Contracting Party shall take legislative, administrative or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties.¹⁵⁰

Similarly, Article 19.2 represented a typical compromise between three alternatives, over whether access to the results and benefits of biotechnology by countries providing genetic resources was to be “ensured” on a “priority” basis, or “promoted and advanced” on a “fair and equitable” basis, or “promoted and advanced” on a “priority” basis.¹⁵¹ The compromise was relatively weak from the South’s point of

¹⁴⁸ Ibid., Article 16.3.

¹⁴⁹ Ibid., Article 16.5.

¹⁵⁰ Ibid., Article 19.1.

¹⁵¹ See p. 301.

view, providing that

[E]ach Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting parties. Such access shall be on mutually agreed terms.¹⁵²

Article 19.3 took account of strong US opposition to the concept of prior informed consent. In order to bring the US on board the convention, the other states agreed to effectively postpone consideration of the issue: thus,

[T]he Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.¹⁵³

Article 19.4, though, saw little change from the text agreed at the sixth session, and took account of biosafety concerns, expressed particularly by the developing countries:

Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.¹⁵⁴

Consideration of Articles 20 and 21, regarding financial resources and a financial mechanism for the convention, had been postponed at the sixth session to the final round following US refusal to commit itself to the provision of new and additional financial resources and the creation of a new financial mechanism. As expected, the resolution of similar issues in the climate negotiations in the interim had

¹⁵² Convention on Biological Diversity, Article 19.2.

¹⁵³ *Ibid.*, Article 19.3.

¹⁵⁴ *Ibid.*, Article 19.4.

a strong impact on the outcome of negotiations over Articles 20 and 21. Consequently, the South got its way over the provision of new and additional financial resources by the North to meet its agreed full incremental costs, but had to settle for a compromise over the financial mechanism. Article 20.2 provided that

[T]he developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article 21, in accordance with policy, strategy, programme priorities and eligibility criteria and an indicative list of incremental costs established by the Conference of the Parties. ... The implementation of these commitments shall take into account the need for adequacy, predictability and timely flow of funds¹⁵⁵

Article 20.4 provided that

[T]he extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.¹⁵⁶

Article 21, dealing with the financial mechanism, also drew upon similar provisions in the climate convention. In accordance with the South's demands, it declared that the mechanism would function "under the authority and guidance of, and be accountable to, the Conference of the Parties", and that it would operate "within a democratic and transparent system of governance".¹⁵⁷ However, bowing to the wishes of key Northern states like the US and Japan, it refrained from creating a new financial mechanism, postponing such a decision to the first meeting of the

¹⁵⁵ Ibid., Article 20.2.

¹⁵⁶ Ibid., Article 20.4.

¹⁵⁷ Ibid., Article 21.1.

Conference of the Parties. In the interim, the GEF was to operate as the financial mechanism, provided it had been “fully restructured in accordance with the requirements of Article 21”.¹⁵⁸

The convention established a Subsidiary Body on Scientific, Technical and Technological Advice under Article 25, to provide the Conference of the Parties “with timely advice relating to the implementation of this Convention”.¹⁵⁹ It provided that this body “shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives competent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work”.¹⁶⁰

Article 26 provided that each contracting party would present to the Conference of the Parties, “reports on measures which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention”.¹⁶¹ This encompassed India’s demand at the fifth session that reports by the developed countries ought to reflect the extent to which they had fulfilled their commitment to aid conservation efforts in the South.

Finally, in accordance with the stand taken by the developing countries at the Kuala Lumpur Conference, and in view of the support for this stance from a number of developed countries, the article concerning global lists was deleted from the convention.

Thus, the biodiversity convention did not meet in full all the demands made

¹⁵⁸ Ibid., Article 39.

¹⁵⁹ Ibid., Article 25.1.

¹⁶⁰ Ibid., Article 25.1.

¹⁶¹ Ibid., Article 26.

by India and the other developing countries. On the positive side for these countries, it recognised the national sovereignty of developing countries over their genetic resources. It did not impose strong commitments on the developing countries to preserve their biodiversity. Moreover, the fulfilment of the commitments that it did impose was made conditional on the North's provision of effective financial and technical assistance. It recognised the broad principle that the donors of genetic resources should share in the benefits from the application of technologies to these resources. It provided for concrete commitments from the North for the provision of new and additional financial resources to enable developing countries to meet the agreed full incremental costs to them of implementing measures for the conservation of biodiversity. Finally, while it did not create the new financial mechanism desired by the developing countries, postponing a decision on the subject to the first meeting of the conference of the parties, it did provide that the mechanism would function under the authority and guidance of, and be accountable to, the conference of the parties, and that it would operate within a democratic and transparent system of governance.

On the negative side, the convention did not provide the concrete guarantees that the South sought from the North for the transfer of technology, especially biotechnology. Furthermore, on the question of intellectual property rights, it disappointed the developing countries in their efforts to influence the North's application of these rights.

The Convention on Biological Diversity was adopted on 22 May, 1992. It was opened for signing at the Earth Summit in June, 1992. By the end of the summit, 156 countries, including India, had signed it, indicating broad political acceptance of the

compromise document. The US, however, controversially rejected the convention. The US rejection was widely reproached, particularly for its focus on the concessions made to the South in the convention. No radical concessions had in fact been made to the South, and hence US criticisms in this regard were received with cynicism by many; indeed, a widespread view held that the US position had more to do with President Bush's re-election prospects than with irreconcilable differences during the negotiations.¹⁶²

Announcing the US rejection of the convention, President Bush emphasised that it “threatens to retard biotechnology and undermine the protection of ideas”.¹⁶³ His objections in this regard were particularly directed towards Articles 16 and 19, which provided for sharing of technology between the holders of technology and the donors of genetic resources, and the imposition of obligations for this purpose on the private sector. Emphasising the US interest in promoting growth and innovation in the biotechnology sector, he declared that he would not sign “a treaty that, in my view, throws many Americans out of work”.¹⁶⁴ This attitude towards the convention apparently drew sustenance from the views of the US biotechnology industry lobby,¹⁶⁵ including the Industrial Biotechnology Association (IBTA), which took the position that “[I]t seems to us highway robbery that a Third World country should have the right to a protected invention simply because it

¹⁶² See, for example, ‘Bushwhacking the Environment’, New Scientist, Vol. 133, No. 1811, 7 March, 1992, p. 7.

¹⁶³ ‘I Didn’t Come to Apologise’, Terraviva, No. 10, 13 June, 1992, p. 2.

¹⁶⁴ Jim Lobe and Marco A. Sibaja, ‘UNCED Eyes Turn to Reilly’, Terraviva, No. 4, 6 June, 1992, p. 2.

¹⁶⁵ ‘Biodivisive’, The Economist, 13 June, 1992, pp. 111, 114; Richard Stone, ‘The Biodiversity Treaty: Pandora’s Box or Fair Deal?’, Science, Vol. 256, 19 June, 1992, p. 1624; Christopher Anderson, ‘Industry Surprised by Firm US Stance on Biodiversity Treaty’, Nature, Vol. 357, No. 6378, 11 June, 1992, p. 428.

supplied a bug, or a plant or an animal in the first place”.¹⁶⁶

US objections were also directed towards the funding provisions of the convention. President Bush declared that “[T]he financing scheme will not work”.¹⁶⁷ This concern was in fact shared by other developed countries. Thus, Britain, for instance, which was the last EC state to sign the convention at Rio, expressed the fear that Article 21 could turn into an “imposition” on donor countries. Nevertheless, with the glare of international media attention upon them, these countries preferred to sign the convention, hoping, like Britain, that the parties would later find “the means of assuring that no country is forced to contribute a blank cheque”.¹⁶⁸ This left the US isolated.¹⁶⁹

VI. INDIA’S ASSESSMENT OF THE BIODIVERSITY CONVENTION

India’s interests at the preliminary stage of the biodiversity negotiations, as we have seen, encompassed international incentives for the conservation of biodiversity, easy access to biotechnology, and the prevention of Northern intellectual property legislation from hindering the flow of information and technology to the South. In addition, India displayed a strong interest during the negotiations in retaining its

¹⁶⁶ Quoted in Andy Coghlan, ‘Biodiversity Convention a ‘Lousy Deal’, Says US’, New Scientist, Vol. 135, No. 1828, 4 July, 1992, p. 9.

¹⁶⁷ ‘I Didn’t Come to Apologise’, Terraviva, No. 10, 13 June, 1992, p. 2.

¹⁶⁸ ‘Biodiversity: US Isolated After British Decision to Sign the Convention’, Terraviva, No. 7, 10 June, 1992, p. 4.

¹⁶⁹ On 21 April, 1993, a new US administration under President Clinton announced that it would sign the biodiversity convention. However, it simultaneously issued an interpretative statement which largely reiterated its opposition to any attempt to reduce the rights already enjoyed by its private sector. [‘Clinton to Sign Treaty on Biodiversity’, The Times of India, 22 April, 1993; ‘Biodiversity: US Trying to ‘Hijack’ Treaty’, Financial Express, 26 April, 1993].

flexibility and independence of action, and avoiding international obligations. Consequently, its assessment of the outcome of the biodiversity negotiations dwelt on whether these goals had been achieved.

India's assessment of the outcome of the biodiversity negotiations was in fact positive. The MOEF took the following position:

This Convention can ... be viewed as a gain for us since it not only supports the actions we are already taking for the conservation of our biodiversity, but also creates a firm link between the transfer of genetic resources and the return transfer of biotechnology which uses those resources. In addition, the Convention calls for a sharing of the profits derived from biotechnology which uses the genetic resources of developing countries. ... obligations on us ... are essentially of a contractual nature and dependant on provision of finance and technology.¹⁷⁰

The MOEF thus stressed as positive achievements the provisions in the biodiversity convention for international incentives for biodiversity conservation, transfer of biotechnology, and the linkage of obligations of the developing countries to the provision of effective assistance to them. However, it neglected to mention the complete failure of the developing countries in influencing the application of intellectual property rights by the North.

The issue of intellectual property protection, particularly the success of the developed countries in the Uruguay Round of multilateral trade negotiations in pressing the developing countries to provide an effective sui generis system of property rights for plant genetic resources, was in fact to become an extremely controversial political issue in India. Whereas the biodiversity convention provided that states had sovereign rights over plant genetic resources, that access to these resources would be facilitated by states, and that the benefits arising from the

¹⁷⁰ Confidential sources.

utilisation of these resources were to be shared with the states providing these resources, as were the technologies that utilised these resources, the new GATT agreement provided that the holder of property rights over plant genetic resources could be a private party, who would be under no obligation to provide access to these resources, or to share the benefits arising from the utilisation of these resources, or to give access to the technologies that used these resources. Consequently, when pressed at a conference in New Delhi in April 1993, the Indian Environment Minister, Kamal Nath, was forced to admit that the provision in the new GATT agreement for property rights over plant genetic resources militated against key principles of the biodiversity convention.¹⁷¹

¹⁷¹ Personal notes, statement of Minister Kamal Nath at the inauguration of the South Asian NGOs Conference, New Delhi, 21 April, 1993.

9. CONCLUSIONS

This chapter discusses the main findings of this thesis with regard to Indian policy on global environmental issues. It addresses four broad questions about Indian policy: the process of policy making in India; the character of Indian interests and preferences; the nature of India's bargaining strategy; and the outcome of international negotiations for India.

I. THE POLICY MAKING PROCESS IN INDIA

The most significant feature about the policy making process in India which emerges from this thesis is the extremely limited impact of pluralist inputs. Domestic non-state actors such as the media, NGOs and business interests generally had very little influence over policy formulation. Policy was also not a subject of domestic political debate. This therefore left the government with a considerable degree of autonomy in policy making.

The media's influence over government policy, as a leading environmental journalist admits, was minimal.¹ Ozone depletion was the only issue to receive a certain amount of critical media coverage, particularly in the early stages when the government's lack of a policy was evident. Subsequently, the government's success in highlighting the North-South dimensions of the ozone issue drew nationalistic support from domestic observers, including the media. As far as the climate change and biodiversity issues were concerned, there was hardly any sustained, critical

¹ Interview with Praful Bidwai, The Times of India, New Delhi, 3/7/93.

commentary in the media. The coverage of these issues was patchy, in marked contrast to the ozone issue. There were several reasons for this.

The ozone issue was newsworthy because of its North-South dimensions and the nationalistic concerns it raised. The government also desired publicity for its stance, and was relatively generous with information. Efforts to amend the Montreal Protocol were therefore keenly watched. By contrast, the climate change and biodiversity issues witnessed efforts to create new regimes, and the complicated, drawn-out negotiations were apparently not deemed likely by the media to attract and sustain public interest until the respective conventions were close to being finalised. In addition, the government tended to maintain secrecy with regard to its policy, reflecting a desire to retain flexibility in negotiations and, particularly in the case of climate change, a desire to avoid public debate, a point discussed shortly.

NGOs also generally had very limited influence over government policy.² As pointed out in Chapter 2, there are, to begin with, very few NGOs which possess at least some of the resources and the interest to try and influence foreign environmental policy. Furthermore, the lack of solidarity within the NGO community reduces its ability to make an impact on government policy. The same situation operated with global environmental issues. Only a handful of NGOs made significant contributions to Indian policy. In the ozone issue, apart from the CSE, whose Director, Anil Agarwal, was apparently consulted by Environment Minister Maneka Gandhi prior to the London Conference,³ and TERI, whose Director, Rajendra Pachauri, was invited to serve on the MOEF's Expert Advisory Committee on Global

² Interview with Thomas Mathew, former Secretary-General, WWF-India, New Delhi, 19/7/93.

³ Interview with Anil Agarwal, Director, CSE, Rio de Janeiro, 9/6/92.

Environmental Issues, no other NGO appears to have had an impact.⁴ In the climate change issue, too, the CSE and TERI appeared to make the main NGO contributions. The CSE's robust criticism of the WRI's 1990 report encouraged the government to reject the WRI's statistics and demand the application of the principle of per capita equity in greenhouse gas allocations.⁵ TERI's main contribution was technical evaluations of the costs of responding to climate change; its confirmation that these costs were high reinforced the government's determination to avoid them and to obtain assistance from the North.⁶ In the biodiversity issue, no NGO appeared to make a significant contribution to government policy.⁷ The only detailed policy prescription for the biodiversity negotiations submitted from the non-governmental sector was noteworthy for its anachronistic and politically unfeasible recommendations, and was summarily rejected by the government.⁸

In general, because of the scale of domestic environmental problems, most NGOs preferred to concentrate their energies on the domestic situation and ignored the government's foreign environmental policy. This was particularly true in the cases of ozone depletion and climate change, because there were far more visible and dire domestic problems to be dealt with, such as the lack of clean drinking water and soil

⁴ Interview with Dr D.K. Biswas, Adviser, MOEF, Rio de Janeiro, 14/6/92.

⁵ Chapter 6, pp. 161-3.

⁶ Ibid., pp. 142-3.

⁷ Ashish Kothari, 'Politics of Biodiversity Convention', Economic and Political Weekly, Vol. XXVII, Nos. 15-16, April 11-18, 1992, pp. 749-55.

⁸ National Institute for Science, Technology and Development Studies (NISTADS), The Convention on Biodiversity, Intellectual Property Rights and Policy Options, (New Delhi: NISTADS, 1991). The NISTADS report in essence recommended an emphasis on the common heritage principle in the biodiversity negotiations, overlooking the fact that India was one of the architects of the move towards national sovereignty. It also unrealistically called for pressure to be put on the North to modify its PBR legislation to permit free access to the holdings of private breeders.

erosion, than these global environmental issues.⁹ Further disincentives to NGO participation in the policy making process were the complexity of global environmental issues and the unfamiliar terrain that international policy represented.¹⁰ Most NGOs lacked the resources to comprehend and keep abreast of the international discussions over these issues.¹¹ Indeed, merely in terms of participation in international meetings, even prominent NGOs like the CSE and TERI often lacked the funds to sponsor the participation of their representatives.¹²

The lack of access to information, a traditional problem as pointed out in Chapter 2, also constrained the ability of NGOs to influence government policy on global environmental issues. Lacking resources to keep informed about international developments, and ill-served by the lack of sustained, critical media coverage, the only source of information for NGOs was the government. But the government consistently maintained that it could not be expected to go out of its way to provide information to NGOs.¹³ Furthermore, its rigid secrecy rules meant that sometimes access to even the most basic information, likely to be widely available in the North, was denied to NGOs. On one occasion, overlooking the government's inertia in relaxing a very restrictive information regime, Environment Minister Maneka Gandhi glibly asserted after the 1990 London Conference that there was very little domestic public debate on the ozone issue because "there are very few people interested in this

⁹ Agarwal and Narain, *Towards a Green World*, p. v.

¹⁰ Interview with Dr Ashok Khosla, Chairman, International Facilitating Committee, Earth Summit, Rio de Janeiro, 13/6/92.

¹¹ Interview with Renu Jain, P.R.O., Society for Development Alternatives, New Delhi, 5/5/93; Agarwal interview; Biswas interview.

¹² CSE, 'Statement of the South Asian NGO Summit, New Delhi, February 17-19, 1992', reprinted in *RIS Digest*, Vol. 9, Nos. 1 & 2, June 1992, pp. 32-42, p. 42.

¹³ Desiraju interview.

field. Very few people attempted to even acquaint themselves with it. It has always been open for national debate. It is just that nobody has bothered to debate it".¹⁴ However, the following criticism of the CSE's Anil Agarwal is revealing: complaining to the Environment Secretary about the government's unnecessary and illogical secrecy with regard to its ozone policy, Agarwal pointed out that NGOs were not being given access, for instance, to an ODA-supported study on the costs to India of implementing the Montreal Protocol, despite its findings being published in the British press.¹⁵ It is also clear, particularly with the climate change issue, that the government did not wish to encourage public debate lest this divert attention from other pressing problems.¹⁶ It had no resources to allocate to the climate issue, its entire environmental budget already proving insufficient to cope with existing environmental problems. The most it was prepared to advocate was a 'no-regrets' domestic policy, taking actions to deal with climate change only if they could be justified on other grounds too.¹⁷

Partly because very few NGOs were knowledgeable about the issues being discussed in global environmental negotiations, there was very little public criticism of government policy by NGOs. This is also partly explained by the combination of the government's success in drawing out the North-South dimensions of global environmental issues and the strong sense of nationalism of NGOs. Thus, in the climate change issue, for instance, NGOs that might have been expected to have a

¹⁴ 'Greens Don't Cost the Nation Money', The Times of India, 22 July, 1990.

¹⁵ Letter from Anil Agarwal to R. Rajamani, 14/1/91.

¹⁶ Sarma interview.

¹⁷ MOEF, 'Inter-Ministerial Meeting Regarding Matters Related to Beijing Ministerial Conference on Environment and Development', New Delhi, 10 May, 1991, p. 2.

vested interest in calling for reduced fossil fuel consumption, such as those working in the area of non-conventional and renewable energy sources, in fact supported the government's stance that in an extremely poor country like India, with very low per capita energy consumption, energy use and greenhouse gas emissions were bound to increase for many years to come.¹⁸

The limited resources of most NGOs and their consequent inability to keep abreast of international developments, and their deep sense of nationalism and general scepticism of Western concepts of environmental protection, also help explain the weakness of transnational linkages with Northern pressure groups, and the absence of any evidence that such links influenced Indian policy on global environmental issues. Nevertheless, such links may well prove important in the future. Indeed, there is already some evidence to show that their influence is growing in some areas of the environment. To cite one example, collaboration between some NGOs and Northern pressure groups was instrumental in gaining international publicity for the Narmada dam controversy and led the World Bank, the main funding agency backing the dam, to put pressure on the Indian government to ensure adequate resettlement and rehabilitation of displaced communities.¹⁹ Similar forms of collaboration may become important tools in the hands of NGOs to influence Indian foreign environmental policy in the future. Many NGOs also appear to have become very aware of the possibilities of cooperation with their counterparts in other countries as a result of the enormous non-governmental activity generated in the

¹⁸ Mathew interview.

¹⁹ The continuing controversy over the dam eventually led the World Bank to withdraw from the project. See, e.g., 'First Step, Says Narmada Andolan', The Hindu, 31 March, 1993; 'Gujarat CM Sees Plot to Throttle Narmada Project', The Hindu, 1 April, 1993; 'A Godsend for Narmada Activists', The Hindu, 12 April, 1992.

build-up to UNCED and at the Earth Summit,²⁰ and this too may encourage them to enter into transnational linkages.

Explanations for the limited influence of NGOs on Indian policy must also take account of the government's secretiveness with regard to its policy. The government did not keep NGOs informed on a regular basis about the progress of negotiations, nor did it generally consult them on policy. This behaviour was primarily the result of the bureaucracy's traditional inclination, discussed in Chapter 2, to restrict policy making access to as few outsiders as possible. Successive environment ministers, moreover, reposed total trust in the bureaucracy, and did little to relax the latter's grip on policy making.

Ministerial reluctance to intercede on behalf of NGOs no doubt also owed something to the inconsequential political influence of NGOs on the national scene.²¹ A purely environmental cause is of limited political significance in a poor country where development is a national priority. This is even more likely to be the case with environmental issues that are of limited domestic relevance, at least in the short term. This helps explain the lack of political pressure on successive Environment Ministers to make policy making in the context of global environmental issues more transparent. It also helps explain why no domestic debate was generated over the issue of access to and ownership of genetic resources when it was discussed during the biodiversity negotiations, but a heated nationwide debate over the same issue was generated when it came up for discussion in the Uruguay Round of trade

²⁰ Mathew interview.

²¹ Hardgrave and Kochanek, India - Government and Politics, pp. 203-5.

negotiations.²²

The general unhappiness of NGOs with regard to the lack of public debate and consultation by the government over global environmental issues was highlighted during a post-Rio 'NGO Consultation on UNCED Follow-Up in India', sponsored by the Environment Ministry and three NGOs. NGOs at this meeting generally demanded greater involvement in policy formulation and better access to information; they also singled out for criticism the secrecy with which the biodiversity convention had been negotiated, terming it "undemocratic".²³

Besides NGOs and the media, business interests were another group who had very limited impact on government policy. In the ozone issue, domestic business interests were limited to a very small number of CFC producers, and a small group of users. Only one Indian company, SRF Limited, attended any of the international ozone meetings as an observer. The CFC producers and users as a group made clear to the MOEF their opposition to a drastic transition away from CFCs, and then left it to the government to secure their interests. On the climate change question as well, business interests had little influence over policy formulation. All the indications were that the impact of policies under the climate convention on the business community in India would be negligible. Greenhouse emission curbs were simply not on the agenda for developing countries, and the conventional wisdom was that they would not be for several decades. Therefore, while the business community supported the government's policy of rejecting curbs on greenhouse gas production,

²² See, for example, 'Government Urged Not to Accept Dunkel Draft on IPR', Indian Express, 21 February, 1993; 'Opposition Parties Close Ranks', The Hindu, 3 March, 1993; 'Ryots Serve Notice to Government', The Hindu, 4 March, 1993.

²³ Renu Jain, 'The Road from Rio', Development Alternatives, Vol. 3, No. 1, 1993, pp. 1, 3, p. 3.

and joined calls for the transfer of environmentally friendly and energy-efficient technology from the North, it had little influence as such on the formulation of Indian policy. Finally, with regard to the biodiversity issue, business interests again had very limited impact on government policy. The private sector's participation in the biotechnology sector was in its infancy, and was insufficiently developed for it to be overly concerned about issues like access to and control of plant genetic resources, and intellectual property legislation. Similarly, the private sector's entry into the seed market was very recent. Only in the pharmaceutical industry were well established indigenous and multinational companies concerned about aspects of the biodiversity negotiations, in particular intellectual property rights. But even their concerns were far more centrally related to the Uruguay Round of GATT negotiations, and to the US stance on intellectual property rights. The lobbying efforts of the private sector were therefore focused primarily on the trade negotiations, rather than the biodiversity negotiations.

Business groups thus generally had very little influence over the formulation of government policy with regard to global environmental issues. This, however, hides a larger truth, namely that economic considerations were very important in Indian policy, reflecting the traditional prioritisation of development over the environment, and consequently business groups could generally feel confident that the government would fight for their interests in international environmental negotiations. Moreover, the nature of each global environmental issue pressed the government, even on non-economic grounds, to adopt a policy that suited these groups. Consequently, these groups generally had little need to influence policy.

Thus, for a variety of reasons, non-state actors such as the media,

environmental pressure groups and business interests generally had very little influence over the formulation of Indian policy. Indian policy, moreover, was not a subject of domestic political debate, either inside or outside Parliament. The pattern with each agreement signed by India was for the Environment Minister to make a statement in Parliament broadly outlining the implications of the agreement for India. In none of the cases was this followed by a debate. This lack of debate partly followed from the traditionally low priority environmental issues have tended to receive in political debates.²⁴ In addition, the prominent North-South dimension of each global environmental issue, and the construction of Indian policy around traditional, consensual foreign environmental policy concepts, helped to ensure cross-party support - a point illustrated by the continuity in the policies of four successive governments from 1989 to 1992, namely the Rajiv Gandhi, V.P. Singh, Chandra Shekhar, and Narasimha Rao governments. Finally, unsettled socio-economic conditions between 1990 and 1992, reflected in the rapid turnover of governments, meant that political interest in this period was largely diverted from relatively low priority environmental issues.

Social and political tensions were generated by the V.P. Singh government's announcement in mid-1990 of affirmative action in favour of socially and economically backward classes. Communal tensions were also heightened soon after this announcement by the powerful Bhartiya Janata Party's agitation for the building of a Hindu shrine on the site of a Muslim mosque in Ayodhya. Pressures stemming from this social turmoil led to the collapse of the V.P. Singh government. It was

²⁴ Interview with Prof. Madhav Gadgil, Indian Institute of Science, Bangalore, 18/3/93.

replaced by the short-lived administration of Chandra Shekhar, which collapsed in March 1991.²⁵ The following months witnessed intense electioneering by the different political parties in the build-up to national elections. Further uncertainties and a leadership crisis within the Congress Party were created in this period by the assassination of the Congress leader, Rajiv Gandhi. The Congress was eventually elected to government in June 1991, with a precarious majority in parliament. It was greeted by a severe economic crisis, and within a month was forced to adopt a highly controversial and unprecedented structural adjustment programme. It took several months before the stability of the new government could be assumed with some confidence.²⁶ Against this background, environmental issues were obviously not high on the political agenda.²⁷

The limited domestic political interest in global environmental issues and the limited impact of non-state actors left the government with a considerable degree of autonomy in policy formulation. Within the government, although successive Environment Ministers, especially Z.R. Ansari, Maneka Gandhi, and Kamal Nath, vigorously promoted Indian policy abroad, practically all the evidence collected for this thesis points to the very strong influence of the bureaucracy over the shape of that policy. Within the bureaucracy, the predominant influence over policy was that of generalist bureaucrats from the MOEF and the MEA.

Bureaucrats from the MOEF and the MEA decided the briefs that India's

²⁵ Dipankar Sinha, 'V.P. Singh, Chandra Shekhar, and "Nowhere Politics" in India', *Asian Survey*, Vol. XXXI, No. 7, July 1991, pp. 598-612.

²⁶ Walter K. Andersen, 'India's 1991 Elections: The Uncertain Verdict', *Asian Survey*, Vol. XXXI, No. 10, October 1991, pp. 976-89.

²⁷ Muchkund Dubey, 'India's Foreign Policy in the Evolving Global Order', *International Studies*, Vol. 30, No. 2, April-June, 1993, pp. 117-29, p. 129.

negotiators carried in the initial stages of global environmental discussions. When these discussions grew complicated, notes prepared by these bureaucrats strongly influenced the briefs developed by the Committee of Secretaries, itself a body entirely composed of bureaucrats. The negotiating briefs clearly reflected traditional concepts in Indian foreign environmental policy. This owed much to the bureaucracy's long institutional memory and inertial tendency to operate on precedent, as well as its desire to avoid controversy by sticking to traditions around which there was an existing political consensus. This belief that policy based on tradition was unlikely to be politically controversial helps explain why policy approval from the Cabinet was seldom sought. The validity of this belief is confirmed by the fact that discussions within the Cabinet were never intensive or controversial, and invariably resulted in the approval of proposals placed before it. The only significant instructions the Cabinet appears to have issued to Indian negotiators related to the need to guard against isolation in international fora, a warning given after the economic crisis of 1991, when India came perilously close to defaulting on its debt repayment obligations.

Government scientists, who might normally be expected to have played important roles, for instance in interpreting the scientific uncertainties involved in issues like ozone depletion and climate change, assessing the true extent and consequences of biodiversity loss, and outlining different technical options for responding to these issues, in fact were marginal to the policy making process.²⁸ They lacked basic data such as the extent of ozone depletion in the atmosphere above India and the area of coastal regions under threat from sea level rise, and hence

²⁸ Biswas interview.

showed a tendency to be cautious and to recommend further studies. They displayed traditional characteristics of limited autonomy and a tendency to give cautious advice under a governmental setting marked by tight budgetary constraints and numerous competing demands for resources. Consequently, they were marginalised in the policy making process.²⁹

The generalist bureaucrats were almost certainly aware of the caution and timidity of government scientists; nevertheless, resource constraints and a traditional reluctance to encourage outside inputs to policy meant that they commissioned very few independent studies to confirm the findings of government scientists. Under the circumstances, the generalists, as a senior scientist involved in the implementation of the Montreal Protocol complained, generally tended to take the scientific opinion of the North at "face value",³⁰ and to instead concentrate during negotiations on the economic and political differences between the North and the South. This highlights the receptivity of generalist bureaucrats to Northern scientific findings, although this was also facilitated by the North's move to allow the research findings of its scientists to be presented under the United Nations label, as with the WMO/UNEP scientific assessments in the ozone issue, and the IPCC reports in the climate change issue, thus increasing their acceptability amongst developing country governments, including the

²⁹ By contrast with the negotiating phase of the different global environmental issues, government scientists appear to be coordinating India's response in the implementation stage of the different conventions. [Personal communication from Keshav Desiraju, Director, MOEF, 10/7/94]. Despite this, it appears fair to suggest that as long as they depend on the patronage of powerful generalists and enjoy limited autonomy, government scientists are unlikely to play important roles in policy formulation even in the future. [See, for example, Pallava Bagla, 'Science Sidelined', *Frontline*, 12 March, 1993, pp. 85-8].

³⁰ Chandrasekharan interview.

Indian government.³¹ This receptivity to Northern scientific findings on the part of policy makers even in a major developing country like India is significant because it adds to the nervousness of those who fear that such openness may be exploited by the North to shape the global environmental agenda to suit its own interests. Indeed, this was precisely the point that the CSE made in its condemnation of the WRI's alleged manipulation of greenhouse emission statistics. So far, however, the receptivity to Northern scientific findings has not appeared to give any cause for regret to Indian policy makers.

The control exercised over Indian policy by a small group of bureaucrats in the MOEF and the MEA helped to ensure a considerable degree of homogeneity within the government. The MEA and the MOEF collaborated well. In addition, the Committee of Secretaries and the Cabinet, as well as ad hoc bodies like the Inter-Ministerial Group (IMG) and the Foreign Secretary's Group of Secretaries, helped to coordinate the policies of different ministries and to ensure that Indian policy emerged relatively smoothly. Nevertheless, there were at least two occasions when different arms of the government appeared to be pursuing separate agendas. The first occasion was during the ozone negotiations, when it transpired that Indian negotiators were unaware of significant decisions taken by their colleagues in the commerce and industry ministries to promote the export of CFC technology to other developing countries. This caused some embarrassment to them when the issue was raised during a meeting with EC delegates. This lack of inter-ministerial coordination persisted for some time.³²

³¹ Chaterjee interview.

³² Chapter 4, pp. 109-10.

On the second occasion, the Environment and Foreign Ministries argued strongly in the biodiversity negotiations for recognition of the principle of national sovereignty over genetic resources and for the dilution of intellectual property rights to allow the sharing of technologies utilising genetic resources, but the Commerce Ministry was inclined in the Uruguay Round of GATT negotiations to accept the need for strengthened intellectual property protection, including a sui generis system of property rights for plant genetic resources. The Commerce Ministry's apparent capitulation to Northern pressure over intellectual property rights led to the launch of a 'Gene Campaign' in January 1992, to organise public protests against the perceived loss of sovereignty over genetic resources implied in the willingness to allow property rights over plant genetic resources. This campaign soon gained the backing of the entire opposition in the Indian Parliament, and even forced an acknowledgement from Environment Minister Nath of an impending clash between the principles agreed in the biodiversity convention and those in the GATT trade agreement.

Neither of the above examples, however, constituted a case of bureaucratic politics with different ministries trying to stamp their influence on Indian policy. Rather, in both examples different ministries were fulfilling their mandated tasks in the way they deemed most appropriate, without deliberately seeking to encroach on each others territory. Thus, in the ozone issue, the commerce and industry ministries concentrated on their mandated task of promoting Indian exports, including of CFC technology, and had little interest as such in influencing India's ozone policy. Similarly, in the second example, the Commerce Ministry was responding to changes in Indian economic policy and to international pressures in GATT in taking the stance

that it did, and does not appear to have had any interest in influencing Indian policy in the biodiversity negotiations. Therefore, while both examples reveal a significant lack of coordination in the agendas favoured by different arms of the government, they should not be taken as examples of bureaucratic politics. They do highlight, however, the possibility that more such examples of lack of coordination may be seen in the future as a result of the complex dynamics of change in long established government policies, especially in the economic field - some parts of the government may cling to tradition while others accept change, thus producing contradictory policies like those witnessed in the biodiversity and GATT negotiations.

In sum, there is very little evidence of pluralist input to Indian policy on global environmental issues. For a variety of reasons, domestic non-state actors such as the media, NGOs and business interests generally had very little influence over the formulation of Indian policy. Indian policy, moreover, was not a subject of domestic political debate. This therefore left the government with a considerable degree of autonomy in policy formulation. Within the government, the predominant influence over policy was that of the bureaucracy, especially generalist bureaucrats from the MOEF and the MEA. The bureaucracy's long institutional memory and inertial tendency to operate on precedent, as well as its desire to avoid political controversy by sticking to traditions around which there was an existing political consensus, meant that policy was constructed around traditional foreign environmental policy concepts.

The picture of the policy making process in India thus looks very similar to the traditional picture painted in Chapter 2. However, as highlighted at several points in the preceding discussion, the picture is also quite nuanced, and could thus change considerably in the future. NGOs could come to influence government policy more

substantially in the future, for instance as transnational linkages grow stronger. Business groups could play a more active role as the protection they have so far received from the government diminishes with the liberalisation of economic policies. Political parties could come to take more interest in global environmental issues as these increasingly threaten or affect developmental interests, or as the threat perception of these issues rises to match that of pressing domestic environmental issues. Policies could reflect increasing lack of homogeneity within the government as the complex dynamics of change work their way through the system. Hence, the similarity of the policy making process in India to the traditional picture should not be taken to mean that it is necessarily static.

II. THE CHARACTER OF INDIAN INTERESTS AND PREFERENCES

Underlying India's participation in the different global environmental negotiations was a basic understanding that all states had a common interest in seeing global environmental problems resolved. This was reflected, for instance, in Environment Minister Ansari's comment in 1989 that "[W]e continue to be an environmentally conscious country - for when Doomsday comes, we are not going to be spared".³³ However, participation in international agreements was not to be at any cost, a point underlined by India's opposition to the 1987 Montreal Protocol, and its brief contemplation of a boycott of the climate convention, on the grounds that these instruments did not safeguard important Indian interests.

The different global environmental negotiations revealed impressive

³³ Chapter 4, pp. 92-3.

consistency in the character of Indian interests and preferences, attributable to the construction of Indian policy around traditional foreign environmental policy concepts such as sovereignty, equity, the “poverty is the greatest polluter” orthodoxy and Third World solidarity. Going by key criteria the Indian government employed to assess the outcome of each global environmental negotiation, namely the extent to which India had evaded international commitments and the degree to which the flow of financial and technological resources to India was going to be enhanced, Indian interests and preferences can be seen as encompassing at least two important categories of goals - defensive goals, to do with preserving sovereignty, ensuring equity, and reducing vulnerability, and more assertive goals, to do with securing economic benefits and exercising more power in the international system.

India’s defensive sovereignty concerns were of essentially three sorts: that there should be no firm obligations on it; that there should be no international institutional controls on it; and that there should be no market interference in the principles governing the operation of international environmental agreements. India’s rejection of firm obligations was reflected in its insistence on its sovereign right to establish its own environmental priorities and its rejection of outside interference in its policies. Indian policy makers repeatedly made the point that poverty was the biggest polluter in India, and that poverty alleviation through rapid economic development was a more pressing priority in the short term than global environmental protection. On the question of ozone depletion, for instance, Environment Minister Ansari argued that

[T]he developing countries muster the resources necessary to meet the minimum needs of their citizens at great sacrifice. Those countries will be unable to spare further resources for the substitutes to CFCs. The poor of the developing countries will look askance at a government that

spends resources on substitutes to CFCs to prevent depletion of the ozone layer ... while they continue to wallow in poverty, hunger, disease and ignorance.³⁴

The same attitude was encapsulated by the Indian Finance Minister, Manmohan Singh:

let us not forget that behind these global issues is an entire world of creeping tragedy - the tragedy of increasing degradation of our land and water resources, the growing scarcity of drinking water and lack of firewood which affect the well-being of a large mass of our common people. The greenhouse effect may be a few decades away, but there is not enough firewood even now³⁵

India's rejection of international institutional controls owed to a fear that the institutions would come to be dominated by the North because of its greater financial and technical capabilities as compared to the South, leading in turn to the establishment of international standards of environmental achievement that India and other developing countries would find hard to meet, and the imposition of sanctions on countries that failed to meet these standards. This was reflected, for instance, in its strong objections to 'pledge and review' proposals during the climate change negotiations, and its rejection of the concept of 'global lists' and opposition to the establishment of a scientific and technological committee under the biodiversity convention during the biodiversity negotiations.

India's rejection of market interference in the principles governing the operation of international environmental agreements was influenced by a domestic tradition, now gradually changing, of strong state control in national affairs. This rejection of market interference was reflected, for instance, in India's demands that resource transfers under the various conventions be guaranteed by states, and not be

³⁴ Quoted in Rosencranz and Milligan, 'CFC Abatement', p. 313.

³⁵ Singh, Environment and the New Economic Policies, p. 1.

left to the vagaries of the market. Thus, India demanded that technology transfer under the different conventions be guaranteed by states, and not be left to the whims of the private sector. It also demanded commitments by states of predictable and adequate financial resource transfers to developing countries under the different conventions, rather than entrusting such transfers to the multilateral development banks and private commercial institutions. Similarly, India's rejection of market interference was reflected in its demands that the financial mechanisms under the different conventions operate under the authority of the parties to the respective conventions, and in its efforts to reduce the World Bank's role in their administration.

India's equity concerns reflected a desire for fairness in the distribution of responsibility for repairing global environmental damage. The basic principles of responsibility it espoused were those outlined in General Assembly Resolution 44/228,³⁶ namely that responsibility be borne by the countries causing damage, be in relation to the damage caused by them, and be in accordance with their capabilities. On this basis, it demanded, for instance, acknowledgement by the North of "main responsibility" for climate change. On the same basis, it insisted that resource transfers by the North to help developing countries cope with environmental damage caused by the North should not have any conditionalities attached to them, and should be based on the principle of additionality so that they did not crowd out valuable aid; furthermore, the governance of the funding mechanisms overseeing these resource transfers should be transparent and democratic, with an equitable balance between developed and developing countries.

India's desire to reduce vulnerability stemmed mainly from a sense of

³⁶ Chapter 5, p. 136.

economic weakness in relation to the North. This was reflected in the ozone issue, for instance, in Indian concerns that pressure from the North would grow until India acceded to the Montreal Protocol, with the North exercising leverage in the form of its capacity to restrict trade with non-parties under Article 4 of the protocol.³⁷ The sense of vulnerability, though, was not very pronounced during the ozone negotiations, allowing India to pursue a relatively aggressive strategy in bargaining with the North. It became much more pronounced during the climate change and biodiversity negotiations, and this was directly a consequence of the severe economic difficulties that faced India in 1991. Indian policy makers were generally concerned that these difficulties would be exploited by the North to force India to moderate its demands.

It is possible to argue that Indian concerns were exaggerated; in fact, there is no evidence that economic clout was used by the North to force India to modify her position.³⁸ The climate and biodiversity negotiations had not progressed very far when India's economic plight was revealed, and it does not appear to have occurred to Northern governments to use their economic leverage to force changes in Indian policy at this stage. By the time negotiations reached a critical stage, India had largely extracted herself from the pit.

It can also be argued that India was not entirely at the mercy of aid donors. The majority of India's debt was owed to governments and multilateral financial institutions, not private banks. In the case of the World Bank, particularly, India was the single largest borrower of funds, and consequently the Bank had almost as much interest in India's economic recovery as the Indian government. The Bank and the

³⁷ Chapter 4, p. 93.

³⁸ Interview with Samar Singh, Additional Secretary, MOEF, New Delhi, 19/7/93.

IMF were both keen to see structural adjustment succeed in India after a series of failures in other countries in the 1980s, and consequently refrained from excessively pressuring the Indian government.³⁹

There was also satisfaction in the North with the changes taking place in India.

Bhagwati emphasises the liberalising philosophy of the new Indian leadership:

the psychology of the leadership that took power in June 1991 must provide the ultimate compulsion for the reforms unleashed by it. The internationally informed Indian elite had surely come to appreciate the extent to which India's voice had been marginalized in world economic affairs reforms were increasingly seen to be the only answer.⁴⁰

Therefore, given this liberalising philosophy, there was little desire on the North's part to create a backlash by trying to exploit India's difficulties.

Concerns about exploitation of national economic vulnerability by the North were thus probably exaggerated. Nevertheless, the Committee of Secretaries and the Indian Cabinet issued periodic instructions to India's negotiators not to get isolated from other developing countries in opposing the North. Consequently, Indian tactics were relatively less confrontational and aggressive in bargaining with the North in the climate change and biodiversity negotiations as compared to the ozone negotiations.

Besides the defensive goals discussed above of preserving sovereignty, ensuring equity and reducing vulnerability, Indian policy also encompassed more assertive goals to do with securing economic benefits and exercising more power in the international system. Economic considerations, as noted earlier in this chapter, played a very important role in Indian policy, reflecting the traditional prioritisation of development

³⁹ Interview with Dr Sanjay Kathuria, Economist, World Bank, New Delhi, 20/7/93.

⁴⁰ Bhagwati, India in Transition, p. 83.

over the environment. Thus, in the ozone issue, India's opposition to the Montreal Protocol was prompted partly by its dislike of controls on CFC production, an area in which Indian industry was beginning to expand, and which had considerable export potential. India was also resentful about being asked to abandon its technological self-sufficiency in CFC production, and to replace it with new technologies it would find difficult to develop, and would probably have to import from the North. These factors were perhaps most obviously revealed in India's demand during negotiations that no controls be imposed on CFC production in developing countries for at least ten years,⁴¹ a period in which Indian industry would be able to substantially exploit the commercial potential of such production. When this demand was rejected, India concentrated on securing commitments from the North regarding the transfer of substitute technologies and the assumption of its incremental transitional costs by the North.

In the climate change issue, India opposed any suggestion that it restrain the growth of its greenhouse emissions. A sustained increase in energy production and use was to play a central role in fuelling its economic development. Although non-conventional and renewable sources of energy and nuclear power were to play important parts in this regard, the predominant role was to be that of fossil fuel-based sources of energy, particularly petroleum and coal. In addition, with a very low per capita consumption of greenhouse gases as compared to the world average, and an already substantial commercial energy deficit,⁴² India could well expect to see its emissions increase substantially in the future. Consequently, Indian policy makers

⁴¹ Chapter 4, p. 101.

⁴² Thomas B. Smith, 'India's Electric Power Crisis: Why do the Lights Go Out?', *Asian Survey*, Vol. XXXIII, No. 4, April 1993, pp. 376-92.

were not prepared to countenance any controls on India's greenhouse gas production.

In the biodiversity issue, India's promotion of its indigenous biotechnology industry meant that it was very keen to achieve access to the new products and technologies being developed by the North's biotechnology industry. This was one of the primary reasons for linking access to genetic resources with access to technology. Indeed, India sought to impose obligations to share technology on the private sector for "the first time ever", according to Indian negotiators.⁴³

In all three issues, India sought new and additional financial resources from the North to meet its incremental costs of coping with environmental change, besides seeking easy access to Northern technology including CFC substitute technology, energy-saving technology and biotechnology. Although it had various arguments to support these demands, there is no question that economic benefit was an important consideration and indeed, was one of the criteria used by it to judge the outcome of each negotiation. Recognising this interest of developing countries in making economic gains at its expense, the North explicitly cautioned during the ozone and climate negotiations that it would not finance the incremental costs of rendering environmentally safe projects planned as a matter of course by the developing countries as part of their development strategies; it would expect the developing countries to show concern for the environment by planning such projects wisely, and to bear the full costs themselves. The North would only fund projects that specially merited assistance.

Indian policy also displayed a small but significant desire to exercise more power in the international system. This was reflected in Indian efforts to reduce the

⁴³ Chapter 8, p. 299.

control of donor countries over the financial mechanisms established under the different environmental conventions. These efforts, as seen earlier, were partly motivated by equity concerns. But in addition, they also owed to resentment of the control exercised by the North over the destinies of developing countries by virtue of its influence over the lending policies of international financial institutions, notably the World Bank and the IMF. This resentment increased in Indian policy making circles when India was itself forced to obtain World Bank and IMF endorsement of its structural adjustment programme in 1991. India's ability to translate such resentment into successful efforts to gain more control for developing countries over the different financial mechanisms, however, was obviously limited by economic weakness. Nevertheless, it pressed demands during the different negotiations that each mechanism operate under the authority of the parties to its parent convention, and that the governance of each be equitably balanced between developed and developing countries. It opposed the GEF because of its lack of these features and intimate link with the World Bank.

So far, then, it is clear that Indian policy in global environmental negotiations encompassed at least two categories of goals, defensive and assertive. These led India to make efforts to defend its sovereignty; press for equity in international agreements; reduce its vulnerability; seek economic gains; and enhance its power in the international system. Looking solely at these efforts might suggest to some that the character of Indian interests and preferences can be explained very well by the neorealist depiction of the state as a "defensive positionalist" actor. However, a close examination of Indian policy shows that a number of factors, as discussed below, detract from a purely neorealist explanation of Indian interests.

Indian interests, contrary to neorealist expectations, were not given in every case by the structure of the international system. The ozone and biodiversity issues, in particular, revealed distinct signs of learning in the evolution of Indian policy. In the ozone issue, Indian policy makers were clearly uncertain for a long time about where India's interests really lay. Indian policy thus evolved through a process of learning from initial indifference in the Vienna Convention phase, to uncertainty and a cautious stance in the initial post-Montreal phase, to growing concern about the implications of the Montreal Protocol accompanied by growing acknowledgement of the threat posed by ozone depletion in early 1989, and finally to a deliberate challenge to the perceived iniquities and unfairness of the protocol. Similarly, in the biodiversity issue, Indian policy evolved from support for the common heritage principle in the early 1980s to insistence on the principle of national sovereignty in the biodiversity convention negotiations.

Indian interests, again contrary to neorealist expectations, were not purely power-maximising in nature. This is reflected in the moderation in India's bargaining strategy, a point reiterated later in this chapter. This moderation owed partly, of course, to constraints placed on India's bargaining position by economic weakness and the nature of the bargaining leverage commanded by it. In addition, it owed partly to a recognition of the interdependence fostered by global environmental issues, and an interest in achieving environmental agreements provided the costs to India were not high and important Indian interests were safeguarded. This is illustrated, for instance, by Environment Minister Ansari's statement quoted at the beginning of this section. Similarly, it is illustrated by Environment Minister Maneka Gandhi's explanation soon after the 1990 London Conference of India's acceptance of a lower

per capita CFC consumption ceiling as compared to levels prevalent in the North, wherein she underlined the adverse effects of ozone depletion and asked, “how can we say we will carry on using CFCs just because we want to be one-up over them?”⁴⁴ Maneka Gandhi’s statement also reflects a perception of constraints placed by international norms, particularly the norm enshrined in Principle 21 of the 1972 Stockholm Declaration that responsible states do not threaten to deliberately damage the environment.⁴⁵ This perception of constraints was reinforced by the traditional concern of Indian policy makers with preserving India’s image as a responsible member of the international community. This helps explain why, for instance, India hesitated in challenging the Montreal Protocol, and indeed, never completely rejected the Montreal Protocol.

The moderation in India’s bargaining strategy is underlined by the absence of any evidence that Indian policy makers ever formally envisioned the use of the environment as a bargaining chip to make gains in other issue areas, such as international economic matters. The nearest Indian Ministers came to linking other issue areas with the environment was in speeches that underlined the fundamental need to address North-South disparities and the issue of poverty in order to protect the global environment. To cite one example, the Indian Minister of State for Science and Technology, Professor M.G.K. Menon, argued at a conference in 1990 that the concern over the global environment offered a major opportunity for a

⁴⁴ ‘Greens Don’t Cost the Nation Money’, The Times of India, 22 July, 1990.

⁴⁵ Principle 21 declared that “[S]tates 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”. [UN, Report of the United Nations Conference on the Human Environment, A/CONF.48/14/Rev.1, p. 5].

creative dialogue between the North and the South over the use and management of the finite resources of the earth, an issue obviously connected with the broader question of international economic management;⁴⁶ the environment, he said, could not be treated as a distinct issue in its own right, as the North appeared to be doing. Clearly, this sort of rhetoric is far removed from the ambitious bargaining chip arguments, even 'grand design', enunciated by the South Centre.⁴⁷ Critically, India never linked movement on global environmental issues to concessions in other issue areas.

The moderation in India's bargaining strategy is also highlighted by the criticism of some domestic observers of the government's failure to use the environment as a bargaining chip. Thus, very senior former civil servants, such as the former Cabinet Secretary, T.N. Seshan, have criticised what they see as the government's failure to understand the importance of global environmental issues as a way for the South to enhance its power. According to Seshan, "[T]he South has not understood that it is fighting at the edge. It is a zero-sum game - when you are powerful, you work the terms of trade to your advantage".⁴⁸ Similarly, others such as the prominent environmentalist, Anil Agarwal, and the former Finance Secretary, S.P. Shukla, have criticised what they perceive as the government's preference for being part of less than satisfactory multilateral solutions to global problems, rather than fighting for more unilateral gains.⁴⁹

⁴⁶ 'Environmental Role in Development Stressed', Financial Express, 14 June, 1990.

⁴⁷ Chapter 1, p. 8.

⁴⁸ Interview with T.N. Seshan, former Cabinet Secretary, New Delhi, 19/5/93.

⁴⁹ See Anil Agarwal, 'Montreal Protocol is a Noose on the Future', The Economic Times, 29 March, 1992; S.P. Shukla, 'Balancing Interests', Indian Express, 21 February, 1993.

Finally, it is possible to argue that Indian policy was not entirely egoistic. A traditional, liberal concern for the welfare of other developing countries could also be argued to have played a part in Indian policy. This proposition is perhaps best supported by India's leadership role in the ozone issue, where it articulated and fought for developing country interests despite the general apathy of many developing countries.

In sum, while the neorealist depiction of the state as a "defensive positionalist" actor goes a long way in explaining the character of Indian interests and preferences, particularly the defensive and assertive goals pursued by Indian policy makers, it does not adequately convey the complexity of Indian policy. It overlooks evidence of uncertainty and a learning process in the formulation of Indian interests. It wrongly suggests purely power-maximising goals, whereas Indian policy also reflected perceptions of mutual interest with the North in global environmental protection, as well as perceptions of constraints placed by international norms. Finally, it rejects, arguably wrongly, the possibility that Indian policy was in some measure altruistic. Consequently, a complete picture of Indian interests and preferences must go beyond the neorealist model and incorporate neoliberal concepts about the importance of learning and the influence on state policies of interdependence, international norms, and traditional values.

III. INDIA'S BARGAINING STRATEGY

India's bargaining strategy in global environmental negotiations precluded non-participation as an option. There were generally five main reasons for this. Two of

these, to do with India's recognition of global environmental interdependence and the consequent mutual interest of all states in cooperating to solve global environmental problems, and India's perception of constraints placed by international norms, have been discussed in the previous section. The other three concerned the fear of Northern sanctions in the event of non-participation, the anticipation of support from favourably disposed elements in the North in the event of participation, and the hope of influencing emergent agendas through participation in international negotiations.

India's fear of Northern sanctions followed from economic weakness and vulnerability in relation to the North. Even during the ozone negotiations, when India's economic situation was relatively stable, policy makers were apprehensive about possible trade restrictions that might be imposed by the North if India stayed out of the Montreal Protocol. Following the economic crisis of 1991, such apprehensions increased. Therefore, given the North's strong backing for the different global environmental negotiations, India was not inclined to look upon non-participation as a viable option. At the same time, an incentive to participation was provided by the existence of favourably disposed elements in the North. These elements constituted a significant source of bargaining power for India and the other developing countries, and their influence is discussed later in this section. Finally, the possibility of influencing emergent environmental agendas was a strong incentive for participation. Indeed, the value of being present, so to speak, at the creation, was an important lesson that the ozone issue taught Indian policy makers. Thus, whereas in the ozone issue India allowed the North to set the agenda and then fought a rearguard action to secure its interests, in the climate change and biodiversity issues it did not make the same mistake and participated in negotiations from the start.

The decision to participate in global environmental negotiations needed to be followed by a viable bargaining strategy that would allow India the maximum leverage to secure its interests. Of three possible options, namely defection to the North, alliance with key developing states, and alliance with the coalition of developing countries, India did not appear to consider the first, did not vigorously pursue the second, and readily plumped for the third. The first option could theoretically have seen India using its not inconsiderable inherent bargaining power to secure special concessions for itself from the North: it was capable of expanding its CFC production to become a major agent of ozone depletion; it was one of the biggest greenhouse gas producers in the world; and it was one of only twelve 'megadiversity' nations in the world. Yet there is no evidence that it ever considered striking a special deal for itself with the North. The main explanation for this appears to be the inertia of the foreign policy establishment, which was locked into a tradition of Third World solidarity.

The second option, of alliance with key developing states, was not vigorously pursued. India appeared reluctant to establish a bargaining clique within the Third World lest this alienate the excluded developing states. This explains, for instance, its inclusion of all the major developing countries in the list of invitees to the so-called Conference of Select Developing Countries in April 1990. Despite this caution about taking all the developing countries with it, however, India did show special interest in establishing a cooperative relationship with the other developing world giant, China, a country with whom India's bilateral relations have hardly been normal and friendly. It learnt the value of cooperating with China in the ozone issue, where the two countries successfully bargained for a substantial amount of financial assistance,

to the tune of \$ 80 million in the first three years following their accession to the Montreal protocol, to be followed by larger sums in the future. It then proceeded to do the same in the climate change and biodiversity issues, indeed coming to place such great store by collaboration with the Chinese that it was willing to boycott the climate convention if China agreed to join it. Nevertheless, an open alliance with China was not considered a viable strategy, partly because this could have interfered with India's efforts, discussed below, to strengthen the larger Southern coalition,⁵⁰ and partly because of a residual suspicion in the foreign policy establishment of the constancy of Chinese commitment to a special relationship.⁵¹

The third option, then, of coordination of policy with the coalition of developing countries, was the basic strategy that India adopted in global environmental negotiations to secure its interests. This strategy, unlike the other options, was readily embraced, mainly it appears because of the heavy weight of the tradition of Third World solidarity in Indian foreign policy, and because the inertia of the foreign policy establishment made it reluctant to examine alternatives. No doubt, as is discussed shortly, substantial common interests and perceptions of bargaining leverage that a united South might exert played important roles in India's solidarity with other developing countries. However, the point that is stressed here is that the decision to go with other developing countries was taken almost automatically; considerations of common interest and bargaining leverage helped to reinforce this decision, but were of secondary import when it was first taken.

⁵⁰ Sarma interview.

⁵¹ Interview with K. Subrahmanyam, former Director, Institute for Defense Studies and Analysis, New Delhi, 21/7/93; Hardgrave and Kochanek, India - Government and Politics, p. 413.

In accordance with the importance of Third World solidarity in its policy, India played a leadership role in articulating Third World concerns and uniting developing countries around a common agenda. It used to good effect fora such as the Non-Aligned Movement, the Commonwealth, the first and second Ministerial conferences of developing countries on environment and development at Beijing and Kuala Lumpur respectively, meetings of the Environment Ministers of SAARC, G-15 meetings, and a large number of G-77 meetings during the various negotiations on global environmental issues as well as during meetings of the preparatory committee for UNCED. It also organised the first significant political conference of developing countries on global environmental issues, the April 1990 Conference of Select Developing Countries on Global Environmental Issues.

Southern solidarity was, for the most part, relatively easy to generate. The other developing countries generally supported most of India's defensive and assertive goals: defending sovereignty; ensuring equity; reducing vulnerability; securing economic benefits; and exercising more power in the international system. Only on some aspects of the sovereignty-related issues of developing country obligations and international institutional controls and the issue of equity did significant differences emerge amongst the developing countries. Nevertheless, as discussed below, even on these questions, there were some areas of agreement, and importantly, divisions were not allowed to detract from Southern unity on other issues.

On the question of developing country obligations, the developing countries were generally united over their sovereign right to establish their own environmental priorities. This was reflected in their insistence on the inclusion of clauses in the climate change and biodiversity conventions providing that "economic and social

development and poverty eradication are the first and overriding priorities of the developing countries". They were generally united over the nature of the obligations they were prepared to accept in the ozone and biodiversity issues. Thus, in the ozone issue, they sought the delayed application of controls on CFC production to developing countries as compared to developed countries. In the biodiversity issue, they endeavoured to ensure that commitments imposed on them recognised the primacy of their national policies and priorities, allowing them maximum flexibility and independence of action.

In the climate change issue, however, there were important divisions within the South over the question of developing country obligations. The small island states, worried by the threat posed by sea level rise to their very existence, were anxious to see both North and South adopt strong controls on greenhouse gas production. The Latin American states tended to favour some obligations, but on a differentiated basis from the North. Most of the African and Asian countries rejected obligations. These divisions could not be resolved, but were not allowed to disrupt Southern unity over other issues; G-77 statements meanwhile tended to carefully avoid elaborating on the question of developing country obligations.

On the question of international institutional controls, the developing countries were generally united in the view that standards for environmental protection set by the North were likely to be inappropriate for them. However, not all shared India's fears that institutional controls would soon turn into instruments of Northern domination over the South, and consequently some took positions that conflicted with India's. Thus, in the climate change issue, some Latin American states like Mexico were willing to accept multilateral reviews of their national plans to curb greenhouse

emissions, as were the small island states. In the biodiversity issue, developing countries like Chile and Ecuador saw merit in the concept of 'global lists', on the grounds that it would focus conservation funds where they were most urgently needed. Similarly, these countries saw merit in the establishment of a scientific and technological committee under the biodiversity convention. These divisions within the South, though, were not of much consequence as far as key North-South issues were concerned, and consequently did not hinder Southern unity on those issues.

On the question of equity, the developing countries were generally united over the need for fairness in the allocation of responsibility for global environmental protection. Thus, in the ozone issue, they sought the amendment of clauses in the Montreal Protocol that they felt unfairly discriminated against developing countries. In the biodiversity issue, they agreed over the importance of the principle of national sovereignty over genetic resources, and the need for equity in the distribution of the benefits obtained from the application of technology to genetic resources between the holders of technology and the holders of the resources. In all three global environmental issues, they insisted that resource transfers by the North not have any conditionalities attached to them, and be based on the principle of additionality. They also demanded transparency and democracy in the governance of the funding mechanisms under each convention, with an equitable balance between developed and developing countries.

Nevertheless, in the climate change issue, there were important divisions amongst the developing countries over the question of equity. The majority of developing countries emphasised the North's main responsibility for climate change and were keen to see the North adopt targets to control its greenhouse emissions.

However, the oil producing countries, primarily from OPEC, did not want such controls to apply to fossil fuels, especially petroleum, lest their exports suffer. They therefore kept stressing the scientific uncertainties involved in understanding climate change, and cautioned against precipitate action. Indeed, when the EC approved in May 1992 a draft directive to tax energy in order to combat global warming, the OPEC states came out vehemently against the tax. They claimed that “[A] policy of this kind on the part of the industrialised nations could hardly be seen as a sign of goodwill by OPEC”.⁵² They feared the tax would reduce the demand for oil and cause investment in the oil sector to decline. Under the circumstances, they “would have no option but to defend ourselves, our industries and our nations with all the means at our disposal”.⁵³ The differences between the oil producing countries and the other developing countries over the question of Northern targets could not be resolved and therefore undermined to some extent the South’s position in the climate change issue.

The developing countries were also divided in the climate change issue over an appropriate concept to guide the allocation of greenhouse emission rights amongst states. Developing countries like India and China favoured the concept of per capita equity. Other developing countries, particularly the rapidly industrialising economies, with smaller populations and rapidly growing energy requirements, were ambivalent about the concept’s utility. Oil producing countries like Saudi Arabia were strongly opposed to the concept, and emphasised that any method of allocation of emission rights should take into account the size and natural endowments of a country.

⁵² Luis Cordova, ‘OPEC: ‘We Will Defend Ourselves Against Punitive EC Oil Tax’, *Terraviva*, 11 June, 1992, p. 4.

⁵³ *Ibid.*

Consequently, no agreement could be reached on the subject. Debate over the issue then ceased towards the end of the climate negotiations, partly because it was proving divisive. It was also premature, given that the Northern states had not been able to sort out their differences over the need for stabilisation of already excessive emission levels, much less begun to discuss the allocation of emission rights for substantially reduced emission levels in the future. In fact, according to some observers like the former Indian Foreign Secretary, Muchkund Dubey, the Northern states, by not sorting out their differences over targets and by not initiating discussions over the distribution of a greenhouse gas budget, lost the opportunity to exploit Southern divisions, and thus “let the South off the hook”.⁵⁴

Significant divisions thus emerged within the South over some aspects of the sovereignty-related issues of developing country obligations and international institutional controls and the issue of equity. These, however, were not allowed to detract from Southern unity over other goals. Thus, the developing countries firmly supported the various demands made by India in rejecting market interference in the principles governing the operation of the different environmental agreements. They shared India’s desire to reduce vulnerability - many were struggling with dire economic situations, several dozen were undergoing structural adjustment programmes, and economic vulnerability and dependence on Northern aid made many particularly insecure. Consequently, they collaborated in joint efforts to reduce their common sense of vulnerability including, among others, efforts to link their fulfilment of obligations under each convention to the fulfilment by the North of its obligations, a device designed to ensure the provision of effective financial and

⁵⁴ Dubey interview.

technological assistance by the North, failing which they would be released from their commitments. They shared India's keenness to secure economic benefits, and strongly supported demands for enhanced financial and technological resource flows from the North to the South. They also shared India's resentment of Northern domination of the international system, and strongly supported Indian demands for greater developing country control over funding mechanisms to finance resource transfers from the North to the South.

Thus, despite significant differences over a few of India's goals, the developing countries were generally united in their approval for the others. Hence, India found it relatively easy to generate Third World solidarity in support of most of its interests and preferences. It was also probably helped by the relatively wide distribution of influence amongst developing countries, which helped strengthen Third World solidarity. Unlike the 1970s, when the South's bargaining leverage was to a considerable extent concentrated in the hands of a small number of states, most of them members of OPEC, many more countries enjoyed some measure of influence under conditions of global environmental interdependence. For instance, countries with influence in the climate change issue included both large and small developing states, such as the major oil producers like the OPEC states and large energy users like India, China, Brazil and Mexico. Similarly, countries with influence in the biodiversity issue comprised a variety of biodiversity-rich developing countries, including such 'megadiversity' nations as Colombia, Ecuador, Peru, Madagascar, Zaire, Indonesia, Malaysia, Brazil, Mexico, India and China. This relatively wide distribution of influence meant that the stakes for a number of developing countries in the success of joint bargaining by the developing countries with the North

increased. Furthermore, the coincidence of the emergence of global environmental issues at roughly the same time and the leadership of countries like India in drawing parallels between these issues helped to persuade the developing countries to accept a common strategy on each issue.

It is so far clear, then, that the option of non-participation in global environmental negotiations was rejected by India; that the bargaining strategy adopted by it to secure its interests during negotiations was one of coordination of policy with the coalition of developing countries, a strategy selected primarily for reasons of tradition; and that Southern solidarity was relatively easy to generate - although there were significant divisions over a few of India's goals, there was broad approval for the others. In addition, perceptions of bargaining leverage must also have helped to sustain Southern solidarity, and indeed, as the discussion below will show, there were a number of distinct sources of Southern bargaining power. Yet, for reasons that will be discussed, these could not all be fully exploited by India and the other developing countries. The limitations on the ability of these countries to fully exploit their bargaining leverage go a long way in explaining the outcomes of the different global environmental negotiations.

There were four main sources of Southern bargaining power in global environmental negotiations: the threat of Southern non-participation; the relative differences in the constraints arising from public pressure in the North and in the South; the favourable disposition of influential liberal elements in the North; and as far as the climate change and biodiversity negotiations were concerned, the advantageous precedents set in the ozone issue. Perhaps the most obvious of these sources of bargaining power was the threat of Southern non-cooperation.

Without Southern cooperation, none of the global environmental issues could be successfully resolved. In the case of ozone depletion, several developing countries were self-sufficient in CFC production technology and several more were acquiring it. Moreover, all developing countries were projected to increase their demand for products traditionally made with the aid of CFCs. Therefore, if the North wished to avoid its CFC cuts being rendered meaningless and wished to see all CFCs phased out in due course, it needed the South's active cooperation. In the case of climate change, with about 45 percent of annual global greenhouse gas production, a fraction expected to grow substantially in the future, the South's cooperation was essential to the North if the latter's own efforts to control climate change were not to be rendered futile. In the biodiversity issue, the South physically controlled perhaps as much as 80 percent of the world's biodiversity. Without its active cooperation, the prospects for biodiversity conservation were very bleak. Thus, insofar as the North was keen to prevent global environmental degradation, it had to be prepared to make concessions to secure the South's full cooperation in each issue.

There were two obvious limitations, however, on the South's ability to exploit the threat of non-cooperation. The first related to the North's desire to prevent global environmental degradation. The South had little control over this variable, which was very much a function of domestic pressures in the North, a point discussed a little later. Therefore, when the North showed reluctance to tackle global environmental degradation, as it did in the climate change issue, the South's bargaining power was correspondingly diminished, and when it showed keenness, as it did in the ozone issue, the South's bargaining power increased. The second limitation related to the South's perception of vulnerability in relation to the North.

The perception of vulnerability and the consequent fear of Northern sanctions meant that, as the earlier discussion of India's reasons for participation in global environmental negotiations also showed, for many developing countries non-cooperation was not a credible option. Nevertheless, despite the sense of vulnerability of many developing countries, the North still could not take their cooperation for granted. The ozone issue in particular, where large developing countries like India and China held out against the North for a substantial period, served as a warning. Furthermore, the North desired global environmental agreements that would attract the willing, long-term cooperation of the developing countries, because the different global environmental issues were likely to pose problems well into the next century; short-term, coercive options were therefore of limited value to it. For these reasons, the North was still prepared to make some concessions to the South to eliminate the threat of non-cooperation altogether.

The second source of Southern bargaining power owed to the relative differences in the constraints arising from public pressure in the North and in the South. In the North, there was generally considerable public pressure to achieve speedy solutions to global environmental problems. The awareness of Northern publics about these problems had grown rapidly, shaped in large part by the media, the scientific community and environmental pressure groups. The media gave considerable publicity to the different issues, and its coverage of some of the more dire predictions about the consequences, particularly of ozone depletion and global warming, tended to disconcert many members of the public.⁵⁵ The scientific

⁵⁵ The importance accorded by the media to environmental threats was reflected, for instance, in *Time* magazine's selection of the endangered earth as the 'Planet of the Year' for 1988, replacing the usual 'Person of the Year' award. [*Time*, Vol. 133,

community played a crucial role in providing the evidence and in highlighting the dangers of global environmental degradation. Drawing lessons from the ozone issue that global environmental threats could be underestimated, many in this community gave their backing to calls for precautionary measures to avoid similar mistakes in the future.⁵⁶ Thus, the Executive Director of UNEP, Dr Mostafa Tolba, for instance, argued that

[T]he ozone treaty took 10 years to work out. Confronting the ozone challenge is a rehearsal for the far more difficult problem of global warming. We must move a great deal faster than we did on ozone to tackle the consequences of climatic change or we may very well commit ourselves to an irreversible course of destruction.⁵⁷

Many non-governmental organisations, such as Friends of the Earth in the ozone issue, Greenpeace, the Worldwatch Institute and the World Resources Institute in the climate change issue, and the World Conservation Union and Conservation International in the biodiversity issue, also worked actively to persuade Northern publics about the dangers of environmental degradation.⁵⁸

The impact of these groups on Northern public opinion was reflected, for instance, in the unexpectedly strong showing of the green parties in the 1989

No. 1, 2 January, 1989, pp. 12-47].

⁵⁶ Stephen Schneider, 'The Greenhouse Effect: Science and Policy', Science, Vol. 243, 10 February, 1989, pp. 771-81.

⁵⁷ Mostafa Tolba, 'Global Conflict and Ecopolitics', Hindustan Times, 5 April, 1990.

⁵⁸ On the influential role played by Northern NGOs, see, for example, Porter and Brown, Global Environmental Politics; Thomas, The Environment in International Relations; Frederick H. Buttel, Ann P. Hawkins and Alison G. Power, 'From Limits to Growth to Global Change: Constraints and Contradictions in the Evolution of Environmental Science and Ideology', Global Environmental Change, Vol. 1, No. 1, 1990, pp. 57-66. For an alternative view, see Mathias Finger, 'New Horizons for Peace Research: The Global Environment', in Jyrki Käkönen, ed., Perspectives on Environmental Conflict and International Politics, (London: Pinter Publishers, 1992), pp. 5-30.

European Parliament elections, and the campaign pledge of George Bush in the 1988 US Presidential election to be the "Environment President". Thus, Northern public opinion had become sensitive to the fact that failure to achieve international cooperation over global environmental issues could result in progressive, costly environmental degradation. Northern governments, therefore, had to reckon with the political costs of being seen to fail to resolve the different global environmental issues.⁵⁹

Public pressure, of course, was not the only domestic constraint Northern governments faced. Pressure also came from other sources, particularly industrial groups that were affected by the way the different environmental issues were resolved. In the ozone issue, such pressure came from CFC producer and CFC user lobbies, in the climate change issue from industrial lobbies reluctant to accept higher energy and related costs, and in the biodiversity issue from seed industry and biotechnology industry lobbies. In general, however, as far as North-South relations were concerned, pressure from industrial groups did not counterbalance public pressure except in the case of climate change. In the ozone issue, pressure from industry, which had initially been in opposition to Northern public opinion, had largely ceased to resist public pressure by the time the developing countries had entered the debate. In the biodiversity issue, pressure from the seed and biotechnology industries

⁵⁹ The impact of public pressure on Northern governments was perhaps best illustrated at the Earth Summit where, with the glare of international attention upon them, developed countries with misgivings about the biodiversity convention, such as the UK and Japan, still felt compelled to sign it. Equally revealing was the public justification the US President felt obliged to give in explaining his rejection of the convention. President Bush, in his speech to the summit, acknowledging US isolation, felt it necessary to declare that "I didn't come here to apologise", and "it is never easy to stand alone on principle, but sometimes leadership requires that you do". ['I Didn't Come to Apologise', *Terraviva*, No. 10, 13 June, 1992, p. 2].

in fact added to public pressure on Northern governments to take steps to halt the loss of biodiversity in the South. As a US seed industry representative argued,

[W]e should not expect developing countries to bear the full cost of conserving, documenting, evaluating, and distributing germplasm simply because it now resides within their borders. The potential global usefulness of this natural resource fully justifies a commitment to its preservation and use by those nations who can most easily afford the cost of doing so.⁶⁰

It was only in the climate change issue, as will be discussed later, that countervailing pressure was exerted by industry on Northern governments not to accept measures that might undermine industrial competitiveness.

By contrast with the North, public pressure in the South to achieve speedy solutions to global environmental problems was generally limited. The preoccupation of Southern governments with more pressing domestic problems than the different global environmental threats, their reluctance to publicise these threats lest this result in the diversion of already scarce resources from other areas for tackling them, and widespread illiteracy and public ignorance, combined to ensure that public pressure was limited.⁶¹ Southern governments were therefore generally free of the sort of domestic constraints that Northern governments faced, and were consequently in a

⁶⁰ Brown, 'Plant Genetic Resources: A View from the Seed Industry', in Kloppenburg, ed., *Seeds and Sovereignty*, p. 227.

⁶¹ The obvious exception to all this was the case of the small island states in the climate change issue. Their survival was jeopardised by sea level rise, and therefore public anxieties were pronounced. These states, however, because of their small size and marginal economic presence, had traditionally lacked influence in the international system, including within the G-77. It was therefore not until they formed the Alliance of Small Island States (AOSIS) and began to work together as a lobby with significant voting strength that their concerns began to be taken seriously by other countries. Nevertheless, the novelty of international diplomacy and negotiation for some of the AOSIS states (several did not even belong to the UN; several had to hire international lawyers to represent them in the climate negotiations), and the pressure to not break ranks with the rest of the Third World, meant AOSIS influence within the G-77 remained limited throughout the climate negotiations.

comparatively stronger bargaining position.

The third source of Southern bargaining power was the favourable disposition of influential liberal elements in the North. These included traditionally well-disposed states, such as the Nordic countries and the Netherlands, as well as non-state actors, including a variety of non-governmental organisations. These forces recognised and highlighted the difficulties that the developing countries faced in caring for the environment, and the need for the North to assist them with due consideration for their sovereignty. Examples of these forces included: in the ozone issue, environmental pressure groups like Greenpeace and Friends of the Earth, public figures like Prince Charles, and the authors of the UNEP economic panel report; in the climate change issue, many of the groups represented at the 1988 Toronto World Conference on the Changing Atmosphere and at the scientific and technical sessions of the Second World Climate Conference; and in the biodiversity issue, organisations such as UNESCO, WWF, IUCN, GRAIN, WRI, Conservation International and Survival International, and representatives of the scientific community, especially ecologists. The intellectual underpinning for many of the liberal ideas espoused by these forces was provided by the 1987 Brundtland Report. Its key contribution, the concept of sustainable development, was elaborated thus:

Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. Far from requiring the cessation of economic growth, it recognises that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a large role and reap large benefits.⁶²

Long standing ideas of the solidarity of all human beings in facing environmental

⁶² WCED, Our Common Future, p. 40.

challenges, ranging from Richard Falk's ideas about a cooperative system of world order,⁶³ to conceptions of a cosmopolitan society popularised by theorists like Charles Beitz,⁶⁴ to notions of intergenerational equity advocated by Edith Brown Weiss and others,⁶⁵ also reflected themselves in the various proposals made in the North for extending assistance to the South.

The developing countries were aware of the existence of this sympathetic constituency in the North; indeed, as noted earlier, this was one of the factors that prompted the participation of countries like India in global environmental negotiations. The developing countries tried to improve their bargaining prospects by appealing to this constituency during negotiations. Thus, in the climate change issue, for instance, they stressed that they were "innocent victims" of "disturbances in the global environment caused by the industrialised world".⁶⁶ Similarly, in the biodiversity issue, they emphasised the "burden" that conservation activities imposed on them,⁶⁷ and appealed for conservation funds and technology in the name of the "common interest of humankind".⁶⁸ Nevertheless, India's case suggests that they

⁶³ Richard A. Falk, This Endangered Planet: Prospects and Proposals for Human Survival, (New York: Vintage Books, 1972).

⁶⁴ Charles R. Beitz, 'Justice and International Relations', Philosophy and Public Affairs, Vol. 4, 1974, pp. 360-89.

⁶⁵ Edith Brown Weiss, 'Climate Change, Intergenerational Equity and International Law: An Introductory Note', Climatic Change, Vol. 15, Nos. 1-2, Oct. 1989, pp. 327-35; see also, 'Agora: What Obligation Does Our Generation Owe to the Next? An Approach to Global Environmental Responsibility', American Journal of International Law, Vol. 84, No. 1, 1990, pp. 190-212.

⁶⁶ Chapter 6, p. 188.

⁶⁷ See, for example, Singapore Resolution on Environment and Development, Singapore, 18 February, 1992, Annex, 'ASEAN Common Stand on the UNCED and Related Issues'; Joint Communique of the SAARC Ministers of Environment, para. 10.

⁶⁸ See, for example, Ministerial Conference of Developing Countries on Environment and Development, Beijing Ministerial Declaration on Environment and Development, Beijing, 19 June, 1991, para. 24. [Reprinted in UN Doc.

could have done much more.

India directed neither adequate resources nor personnel towards the task of cultivating liberal elements in the North. Recommendations in this regard during the ozone negotiations by India's ambassador in Helsinki in 1989 went unnoticed.⁶⁹ In the climate negotiations, the leader of the Indian delegation, Dasgupta, made himself accessible to the international media and non-governmental organisations at the INC sessions and tried to gain positive publicity for the position of the developing countries, but demands on his time meant that such efforts were inadequate. The same situation prevailed in the biodiversity negotiations where, as we have seen, at one stage the two-man Indian delegation was led to complain about being constrained in its efforts by its "tiny size".⁷⁰ Thus, overworked Indian negotiators generally gave adequate accounts of themselves, but achieved much less than they wished to in mobilising support in the North.⁷¹ The main reasons for the lack of governmental back-up support for the various delegations appear to have been resource constraints,

A/CONF.151/PC/85, 13 August, 1991].

⁶⁹ Chapter 4, p. 94.

⁷⁰ Chapter 8, p. 274.

⁷¹ The phenomenon of small developing country delegations is not new. Sewell and Zartman note that typically during North-South negotiations, "[T]he negotiators of the South are invariably outnumbered by their counterparts from the North and overwhelmed by routine work. They are burdened by the paperwork produced in the course of the negotiations alone. They frequently lack the time and energy to cope with new developments and to adjust their negotiating positions". [John W. Sewell and I. William Zartman, 'Global Negotiations: Path to the Future or Dead-End Street?', in Jagdish N. Bhagwati and John Gerard Ruggie, eds., Power, Passions, and Purpose - Prospects for North-South Negotiations, (London: The MIT Press, 1984), pp. 87-124, p. 98]. The explanation for small developing country delegations usually lies in developing country governments trying to economise and save on scarce resources (alternatively, governments may rely on local embassy staff to represent them at conferences - the problem with this, however, is that such officials are usually unlikely to be properly qualified in the subjects under discussion).

benign neglect and bureaucratic inertia.⁷² Overall, although the Indian government's understanding of the importance of lobbying liberal elements in the North gradually grew, as did delegation sizes,⁷³ on the admission of former Indian Foreign Secretary, Muchkund Dubey, "much more should have been done".⁷⁴

Finally, the fourth main source of Southern bargaining power derived from advantageous precedents set in the ozone issue, which had an impact on the climate change and biodiversity negotiations. These precedents were: the establishment in global environmental agreements of differentiated responsibilities of states, and the offer of special concessions to developing countries to encourage their cooperation; the provision for linkage by developing countries of their fulfilment of commitments under global environmental agreements to the provision of effective assistance to them; and the provision for resources committed by the North to assist developing countries in tackling global environmental problems to be additional to normal aid flows from the North to the South. Having accepted the arguments underlying these provisions in the ozone issue, namely that the developing countries faced unique difficulties in tackling global environmental problems, and that the North generally had both material and normative interests in seeing developing countries cope successfully, the North found it very difficult to deny the legitimacy of these arguments in the climate change and biodiversity issues, and consequently, was obliged to allow similar provisions to be included in the resultant conventions. This underlines the broader point that the process of institutional norm creation places

⁷² Chapter 8, p. 275.

⁷³ Indeed, partly in reflection of this growing understanding, the official Indian delegation to the Earth Summit included, perhaps for the first time ever at such a major conference, representatives of several NGOs.

⁷⁴ Dubey interview.

constraints on states, thereby allowing some, in this case the weak states, to use those norms to advantage.

In sum, India and the other developing countries could anticipate bargaining leverage in negotiations with the North arising from four main sources. At least three of these, however, reflected features that suggested limitations on their capacity to fully exploit them. These limitations, moreover, were in addition to divisions amongst them over certain goals. The influence of these factors on the outcome of North-South negotiations is discussed in the next section.

IV. THE OUTCOME OF NEGOTIATIONS FOR INDIA

The specific provisions of the different conventions which emerged from global environmental negotiations have already been outlined in previous chapters. In this section, their salient features and the overall outcome of negotiations for Indian and other developing countries are discussed.

Perhaps the most striking feature of the outcome of each global environmental negotiation is the minimal success the South had in challenging the North's structural dominance. The South's demands for technology transfer guarantees, controls on the private sector and the dilution of intellectual property protection regimes were all rejected by the North. Technological innovation and intellectual property protection are fundamental to the preservation of the North's structural power, and its refusal to make concessions in these areas was predictable. What is more interesting is that the South's inability to secure concessions demonstrates that it lacked the resources to threaten the North's structural power.

Despite its lack of structural power, however, the South was clearly able to make some gains in bargaining with the North, the best example being the Multilateral Fund of the Montreal Protocol. This is to transfer, in just the first six years of its operation, more than \$ 650 million from the North to the South, a sum that exceeds the amount pledged for the Common Fund under the Integrated Programme for Commodities, the primary symbol of the 1970s North-South dialogue. Moreover, although the fund is entirely donated by the North, the South has acquired an equal share with the North in its control, an unprecedented event, conflicting with the trend of voting power and control over international funds resting with the major donors from the North. To help explain how the South was able to make bargaining gains while lacking structural power, and more generally to help explain the outcome of each negotiation, reference must be made to the sources of Southern bargaining power discussed earlier, namely the threat of Southern non-cooperation, the relative differences in the bargaining constraints arising from public pressure in the North and in the South, the favourable disposition of influential liberal elements in the North, and the advantageous precedents set in the ozone issue.

In the ozone issue, the threat of non-cooperation by major developing countries like India and China was credible. In India's case, specifically, economic vulnerability was not as pronounced as it was to be during the climate and biodiversity negotiations, and India was therefore able to pursue a relatively aggressive bargaining strategy. Meanwhile, public pressure in the North for a speedy settlement was steadily rising, given an impetus by fears of the development of an Arctic ozone hole. Liberal elements in the North also willingly conceded a duty on the North's part to help the developing countries meet their incremental transitional costs, and exerted

pressure on Northern governments to make appropriate concessions. With these bargaining advantages, it was inevitable that India and the other developing countries would secure significant concessions from the North. Nevertheless, there were also limits to these concessions. India's case shows that there was, in particular, a significant sense amongst policy makers that at some point pressure from the North to sign the Montreal Protocol would become irresistible. Hence, there were limits to the credibility of the threat of non-cooperation, and consequently little inclination to hold out for more concessions than were on offer at the 1990 London Conference - as Environment Minister Maneka Gandhi put it, "some years later we could have been forced to sign it without any concessions".⁷⁵

In the climate change issue, the threat of non-cooperation was not seen as a credible option by many developing countries because of their vulnerability to Northern pressure. India, for instance, was in a much weaker economic position than it had been during the ozone negotiations, and Indian policy makers, fearing Northern exploitation of India's economic difficulties, stressed moderation in India's bargaining strategy. Divisions within the South over important issues like developing country obligations, Northern commitments, and the allocation of greenhouse emission rights, also would have diminished the impact of a Southern threat of non-cooperation. As far as public pressure in the North was concerned, unlike in the ozone issue this was counterbalanced by pressure from a small group of sceptical scientists, as well as many industrial groups, economists and others, all of whom were worried by the costs of greenhouse emission reduction strategies and stressed caution and the need for more evidence about the actual nature of the threats posed by climate change before

⁷⁵ Chapter 4, p. 93.

any strong steps were taken.⁷⁶ Indeed, relative differences in the constraints imposed by these groups on different Northern governments also created divisions within the North. A very good example of this was provided by the case of the EC energy tax.

On 13 May, 1992, the EC approved a draft directive to tax energy in order to combat global warming. The EC Environment Commissioner, Carlo Ripa di Meana, argued that

unless we cut energy consumption, we shall not escape the dangers inherent in global warming, and the two great oil crises of the 1970s have shown us that only high prices are capable of forcing us to abandon our reckless consumption of natural resources. The imposition of taxes on energy and CO₂ emissions will guarantee that our pledge to stabilise CO₂ emissions at 1990 levels by the year 2000 is fulfilled.⁷⁷

European industry, however, strongly resisted the proposed taxes.⁷⁸ It argued, among other things, that such unilateral measures would condemn it to competitive disadvantages in relation to US and Japanese industry. Therefore, in order to avoid placing European industry at a competitive disadvantage, the EC Commission made the introduction of the tax conditional on the adoption of similar measures by the US and Japan. The US response, in Ripa di Meana's words, was "a drastic refusal". Although Japan expressed an interest in the tax, the result of the US position was

⁷⁶ Eugene B. Skolnikoff, 'The Policy Gridlock on Global Warming', Foreign Policy, No. 79, Summer 1990, pp. 77-93; Wilfrid Beckerman, 'Global Warming and International Action: An Economic Perspective', in Andrew Hurrell and Benedict Kingsbury, eds., The International Politics of the Environment, (Oxford: Clarendon Press, 1992), pp. 253-89; Steven L. Rhodes, 'Climate Change Management Strategies', Global Environmental Change, Vol. 2, No. 3, 1992, pp. 205-14; George W. Rathjens, 'Energy and Climate Change', in Mathews, ed., Preserving the Global Environment, pp. 154-86; James A. Tobey, 'Economic Issues in Global Climate Change', Global Environmental Change, Vol. 2, No. 3, 1992, pp. 215-28.

⁷⁷ Carlo Ripa di Meana, 'Why I Won't Go to Rio', Terraviva, 9 June, 1992, p. 2.

⁷⁸ 'Europe's Industries Play Dirty', The Economist, 9 May, 1992, pp. 79-80.

that the EC felt obliged to reject a unilateral course of action on the global warming issue.

In the midst of the wrangling between and within the Northern states over the correct response to climate change, liberal elements favourably disposed towards the Third World were able to exercise very little influence. Nevertheless, the little influence that they were able to exert, combined with public pressure on Northern governments to do something about climate change, and a sense on the part of Northern governments that long-term cooperation to resolve climate change meant that Southern governments should preferably not leave the bargaining table with a feeling that they had received a raw deal from the North, gave Southern governments a little bargaining leverage to successfully claim some minor concessions. Finally, because of its earlier acceptance of a set of norms in the development of the ozone regime, the North was constrained to allow the same norms to form part of the climate regime, thereby yielding a few more concessions to the South. Thus, although the South was able to secure some minor concessions from the North in the climate issue, it was unable to prevent a poor overall outcome, mainly because of its inability to use to good effect two important sources of bargaining power, namely the threat of non-cooperation, and its relative freedom from the constraints of public pressure.

In the biodiversity issue, the threat of non-cooperation, as in the climate change issue, was not a credible option for many developing countries. Furthermore, a number of them, like India, were keen to use the international focus on biodiversity conservation to demand enhanced assistance from the North, and non-cooperation would not have advanced this goal. Besides, well-stocked Northern genetic resource collections meant that the short-term costs imposed by Southern non-cooperation on

the North were unlikely to be substantial, further reducing the credibility of the non-cooperation option. With regard to public pressure in the North, this was high, though not of the same magnitude as in the ozone issue - Northern publics felt personally and immediately threatened by ozone depletion, but not so much by biodiversity loss in the Third World. Public pressure in most Northern states was also generally not counterbalanced by other pressures - significantly, the one state in which it was, the US, refused to sign the biodiversity convention after its biotechnology industry, unlike its European counterpart, declined to endorse the biodiversity convention.⁷⁹ With regard to the liberal constituency in the North, the South received considerable support from it. Finally, as in the case of climate change, the North was constrained to allow norms it had accepted in the ozone regime to form part of the biodiversity regime. Thus, the overall picture in the biodiversity issue was more positive for the South than in the case of climate change, though not as advantageous as in the case of ozone depletion, the main differences with regard to the latter arising from the lack of credibility of a non-cooperation threat by the South and the reduced threat perception of the Northern public. The South, then, was able to secure a clearly positive outcome from the biodiversity negotiations, though the gains made by it were not of the same magnitude as in the ozone issue.

Thus, reference to the specific circumstances applying to the different sources of Southern bargaining power in each global environmental issue helps explain the outcome of negotiations in each issue; in particular, it supplements the argument that the North's greater structural power defined the areas where the South could not make gains. It also suggests that neorealist arguments based on the notion of

⁷⁹ Coghlan, 'Biodiversity Convention a 'Lousy Deal', Says US'.

structural power as the sole determinant of North-South bargaining outcomes may be inadequate - account must also be taken of such things as the mutual interest of both sides in long-term cooperation to resolve problems such as global environmental degradation, the influence of institutional norms in moderating the power play of states, and the impact of non-state actors. Indeed, the North-South bargaining outcomes discussed in this thesis appear to undermine the neorealist predictions of Krasner's Structural Conflict. None of the negotiations broke down or led to disengagement between the North and the South. In fact, all led to compromise agreements. None of the agreements enshrined only Northern preferences for free-market liberalism, reflected in the North's successful rejection of controls on the private sector and the dilution of intellectual property rights, and its endorsement of the World Bank-dominated GEF as the financial mechanism for the climate and biodiversity conventions; on the contrary, the various agreements enshrined many of the South's preferences for norms of authoritative allocation, such as on the question of additionality, predictable and adequate resource transfers by the North, control of funds donated by major donors, and linkage between access to genetic resources and access to technology, profits and other benefits resulting from the utilisation of those resources.⁸⁰

In conclusion, this thesis reveals a strong note of moderation in the South's ambitions and bargaining strategy in global environmental negotiations. The Indian case suggests that Southern interests were not purely power-maximising in nature.

⁸⁰ For a broader critique of Krasner's ideas, that also highlights the relatively fundamental changes in Northern and Southern preferences that have been taking place, see Robert L. Rothstein, 'Epitaph for a Monument to a Failed Protest? A North-South Retrospective', International Organization, Vol. 42, No. 4, Autumn 1988, pp. 725-48.

Strong perceptions of constraints and mutual interests in bargaining with the North moderated Southern tactics. Thus, no attempt was made, for instance, to use global environmental issues to pose a macro-challenge to the North, linking agendas across issue areas. Neither was any attempt made to revive the confrontationist strategy so typical of the 1970s and strongly advocated by the South Centre.

The South's overall assessment of the outcome of global environmental negotiations, as the Indian case suggests, was favourable, despite the mixed success it enjoyed in securing the various demands made by it. India's assessments of the different agreements even indicate a sense of relief that they did not further weaken the position of the developing countries. All this suggests that despite the rhetoric about the new bargaining weapon provided by the environment to the South, this was not how Southern policy makers actually saw matters.

Despite the general sense of weakness of developing countries in relation to the North, there was sufficient identity of interests and shared perceptions of bargaining leverage between them to sustain Southern solidarity through negotiations with the North. At the same time, palpable differences were evident between them over important issues such as the allocation of greenhouse emission rights. It is uncertain how developments in the future will affect the unity of the Third World coalition. What is certain is that, as the Indian case highlights, the picture of policy making in developing countries is quite complex and not given to easy generalisations. This underlines the dangers of making very broad assumptions about developing country interests and the logic of coalition formation. Hopefully, therefore, this study will encourage much needed further analyses of evolving developing country positions in the global environmental debate.

SELECTIVE BIBLIOGRAPHY

I. PRIMARY TEXTS

A. Government of India Documents

DST. Report of the Committee for Recommending Legislative Measures and Administrative Machinery for Ensuring Environmental Protection. New Delhi: DST, 1980.

MOEF. Annual Report 1986-87. New Delhi: MOEF, 1987.

MOEF. Annual Report 1987-88. New Delhi: MOEF, 1988.

MOEF. 'Resolution - National Forest Policy, 7 December, 1988', in K.D. Saxena, Environmental Planning Policies and Programmes in India, (Delhi: Shipra Publications, 1993), Annexure II, pp. 201-9.

MOEF. Annual Report 1988-89. New Delhi: MOEF, 1989.

MOEF. Annual Report 1989-90. New Delhi: MOEF, 1990.

MOEF. National Strategy for Conservation and Sustainable Development: Report of the Core Committee. New Delhi: MOEF, April 1990.

Government of India. India - Country Study on the Environment. New Delhi: MOEF, October 1990.

MOEF. 'Greenhouse Effect and Climate Change - Issues for the Developing Countries'. New Delhi, 5 April, 1990.

MOEF. Conference of Select Developing Countries on Global Environmental Issues, New Delhi, 23-25 April, 1990. New Delhi: MOEF, 1990.

MOEF. Chairman's Summary, Conference of Select Developing Countries on Global Environmental Issues, New Delhi, 23-25 April, 1990. New Delhi: MOEF, 1990.

MOEF. Second Meeting of the Expert Advisory Committee on Global Environmental Issues. New Delhi: MOEF, 24 May, 1990.

MOEF. 'Statement by the Leader of the Indian delegation', New Delhi, 19 June, 1991.

MOEF. 'Intervention of the leader of the Indian delegation on 'Commitments on Sources and Sinks' (Agenda item 2(a))'.

MOEF. 'Inter-Ministerial Meeting Regarding Matters Related to Beijing Ministerial Conference on Environment and Development'. New Delhi, 10 May, 1991.

MOEF. Annual Report 1991-92. New Delhi: MOEF, 1992.

MOEF. Environment and Development: Traditions, Concerns and Efforts in India. New Delhi: MOEF, June 1992.

MOEF. Policy Statement for Abatement of Pollution. New Delhi: MOEF, 1992.

MOEF. National Conservation Strategy and Policy Statement on Environment and Development. New Delhi: MOEF, June 1992.

MOEF. Annual Report 1992-93. New Delhi: MOEF, 1993.

B. UN Documents

Ozone

UNEP. Vienna Convention for the Protection of the Ozone Layer. Nairobi: UNEP, 1985.

- UNEP. Montreal Protocol On Substances That Deplete The Ozone Layer. Nairobi: UNEP, 1987.
- UNEP. Environmental Effects Panel Report. Nairobi: UNEP, 1989.
- UNEP. Action on Ozone. Nairobi: UNEP, 1989.
- UNEP. Report of the Parties to the Montreal Protocol on the Work of Their First Meeting. UNEP/OzL.Pro.1/5, 6 May, 1989.
- UNEP. Final Report. UNEP/OzL.Pro.WG.I(1)/3, 25 August, 1989.
- UNEP. Final Report. UNEP/OzL.Pro.WG.I(2)/4, 4 September, 1989.
- UNEP. Economic Panel Report. Nairobi: UNEP, 1989.
- UNEP, Report of the First Session of the Second Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol. UNEP/OzL.Pro.WG.II(1)/7, 23 November, 1989.
- UNEP. Report of the Legal Drafting Group. UNEP/OzL.Pro.WG.II(1)/5, 20 November, 1989.
- UNEP. The Costs to Developing Countries of Meeting the Terms of the Montreal Protocol. UNEP/OzL.Pro.WG.II(2)/3, 29 January, 1990.
- UNEP. Report of the Second Session of the Second Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol. UNEP/OzL.Pro.WG.II(2)/7, 5 March, 1990.
- UNEP. Report of the First Session of the Third Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol. UNEP/OzL.Pro.WG.III(1)/3, 14 March, 1990.
- UNEP. Report of the Second Session of the Third Meeting of the Open-Ended Working Group of the Parties to the Montreal Protocol. UNEP/OzL.Pro.WG.III(2)/3, 22 May, 1990.
- UNEP. Remaining Issues to be Addressed at the Fourth Meeting of the Working Group: Note by the Executive Director. UNEP/OzL.Pro.WG.IV/3, 23 May, 1990.
- UNEP. Report of the Second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. UNEP/OzL.Pro.2/3, 29 June, 1990.
- UNEP. Report of the Executive Director of the United Nations Environment Programme, Secretariat of the Montreal Protocol - Addendum. UNEP/OzL.Pro.2/2/Add.4/Rev.1, 28 May, 1990.

Climate

- World Climate Programme Impact Studies. Developing Policies for Responding to Climatic Change. WCIP - 1, WMO/TD - No. 225, April, 1988.
- UN, General Assembly. Resolution 43/53, 6 December, 1988.
- UNEP. Annual Report of the Executive Director - 1988. Nairobi: UNEP, 1989.
- UN, General Assembly. Resolution 44/228, 'United Nations Conference on Environment and Development', 22 December, 1989.
- WMO/UNEP. IPCC First Assessment Report: Overview. 31 August, 1990.
- UNEP. Proceedings of the Governing Council at its Second Special Session. UNEP/GCSS.II/3, 8 August, 1990.
- UNEP/WMO. Ad Hoc Working Group of Government Representatives to Prepare for Negotiations on a Framework Convention on Climate Change. UNEP/WMO Prep./FCCC/L.1/REPORT, Geneva, 24-26 September, 1990.
- WMO. Report of the Meeting of Government Representatives to Draft Ministerial

Declaration for the Second World Climate Conference. Geneva, 27-29 September, 1990.

UN, General Assembly. Resolution 45/212, 21 December, 1990.

UN, General Assembly. Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of Its First Session, Held at Washington, D.C., From 4 to 14 February, 1991. A/AC.237/6, 8 March, 1991.

UN, General Assembly. Intergovernmental Negotiating Committee for a Framework Convention on Climate Change - List of Participants. A/AC.237/INF.1, 12 February, 1991.

UN, General Assembly. Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of its Second Session, Held at Geneva from 19 to 28 June, 1991. A/AC.237/9, 19 August, 1991.

UN, General Assembly. Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of its Third Session, Held at Nairobi from 9 to 20 September, 1991. A/AC.237/12, 25 October, 1991.

UN, General Assembly. Report of the Intergovernmental Negotiating Committee for a Framework Convention on Climate Change on the Work of Its Fourth Session, held at Geneva from 9 to 20 December, 1991. A/AC.237/15, 29 January, 1992.

UN, General Assembly. Proposal on the Entire Section on Commitments by 43 Developing Countries. A/AC.237/WG.I/L.7, 18 December, 1991.

WMO/UNEP. 1992 IPCC Supplement - Scientific Assessment of Climate Change. 1992.

United Nations. Framework Convention on Climate Change.

Biodiversity

FAO. Report of the Conference of FAO - Twenty-first Session, Rome, 7-25 November, 1981. Rome: FAO, 1981. C 81/REP.

FAO. Report of the Conference of FAO - Twenty-second Session, Rome, 5-23 November, 1983. Rome: FAO, 1983. C 83/REP.

UNEP. Annual Report of the Executive Director - 1987. Nairobi: UNEP, 1988.

UNEP. Annual Report of the Executive Director - 1988. Nairobi: UNEP, 1989.

UNEP. Annual Report of the Executive Director - 1989. Nairobi: UNEP, 1990.

UNEP. Proceedings of the Governing Council at its Second Special Session. UNEP/GCSS.II/3, 8 August, 1990.

UNEP. Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its First Session. UNEP/Bio.Div/WG.2/1/4, Nairobi, 28 November, 1990.

UN, General Assembly. Environmentally Sound Management of Biotechnology. A/CONF.151/PC/29, 31 January, 1991.

UN, General Assembly. Conservation of Biodiversity. A/CONF.151/PC/28, 5 February, 1991.

UNEP. Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its First Session, Addendum. UNEP/Bio.Div/WG.2/1/4/Add.1, Nairobi, 5 February, 1991.

UNEP. Report of the Ad Hoc Working Group of Legal and Technical Experts on Biological Diversity on the Work of Its Second Session. UNEP/Bio.Div/WG.2/2/5, Nairobi, 7 March, 1991.

- Unesco. UNCED Working Party on Biological Diversity: Promoting Education and Training. 12 April, 1991.
- FAO. Report of the Commission on Plant Genetic Resources - Fourth Session, Rome, 15-19 April, 1991. Rome: FAO, 1991. CPGR/91/REP.
- UNEP. Revised Draft Convention on Biological Diversity. UNEP/Bio.Div/WG.2/3/3, Nairobi, 30 April, 1991.
- UNEP. Report of WG II on the Progress of Its Work at the Third Session of the Intergovernmental Negotiating Committee. UNEP/Bio.Div/INC.3/L.3, Nairobi, 3 July, 1991.
- UNEP. Report of Working Group I on the Progress of Its Work at the Third Session of the Intergovernmental Negotiating Committee. UNEP/Bio.Div/INC.3/L.2, Nairobi, 3 July, 1991.
- UN, General Assembly. Conservation of Biological Diversity: Background and Issues. A/CONF.151/PC/66, 25 July, 1991.
- UNEP. Draft Report. UNEP/Bio.Div/N4-INC.2/L.1, Nairobi, 27 September, 1991.
- UNEP. Draft Report of Working Group II - Addendum - Draft Articles on Which There is a General Understanding in Working Group II. UNEP/Bio.Div/N4-INC.2/WG.II/L.1/Add.1, Nairobi, 1 October, 1991.
- UNEP. Draft Report of Working Group I. UNEP/Bio.Div/N4-INC.2/WG.I/L.1/Add.2, Nairobi, 1 October, 1991.
- UNEP. Draft Report of Working Group I. UNEP/Bio.Div/N4-INC.2/WG.I/CRP.14, Nairobi, 1 October, 1991.
- UNEP. Draft Report of Working Group I. UNEP/Bio.Div/N4-INC.2/WG.I/CRP.15, Nairobi, 1 October, 1991.
- UNEP. Draft Report of Working Group I. UNEP/Bio.Div/N4-INC.2/WG.I/L.1/Add.3, Nairobi, 1 October, 1991.
- UNEP. Report of Working Group I. UNEP/Bio.Div/N5-INC.3/WG.I/L.1/Add.1, Geneva, 29 November, 1991.
- UNEP. Articles Prepared by Working Group I. UNEP/Bio.Div/N6-INC.4/WG.I/L.2/Add.3, Nairobi, 10 February, 1992.
- UNEP. Draft Report of Working Group II. UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, Nairobi, 14 February, 1992.
- UNEP. Draft Report of Working Group II. UNEP/Bio.Div/N6-INC.4/WG.II/L.1/Rev.1, 14 February, 1992.
- UNEP. Convention on Biological Diversity.

C. Assorted Documents

- UN, General Assembly. Development and Environment. U.N. Doc. A/CONF.48/10, 22 December, 1971.
- UN. Report of the United Nations Conference on the Human Environment. A/CONF.48/14/Rev.1.
- Benedick, Richard. 'Protecting the Ozone Layer', Department of State Bulletin, Vol. 85, No. 2097, April, 1985, pp. 63-4, p. 63.
- Benedick, Richard E. 'Environment in the Foreign Policy Agenda', Department of State Bulletin, Vol. 86, No. 2111, June, 1986, pp. 55-8, p. 56.
- Negroponte, John D. 'Protecting the Ozone Layer', Department of State Bulletin, Vol. 87, No. 2123, June, 1987, Washington, pp. 58-60.

- Mansfield III, William H. 'Strategies to Cope with Climate Change', in WMO, Conference Proceedings - World Conference on the Changing Atmosphere - Implications for Global Security, Toronto, 27-30 June, 1988, WMO/OMM - No. 710, 1988, p. 271.
- Watson, Robert. 'Atmospheric Ozone', in WMO, Conference Proceedings - World Conference on the Changing Atmosphere - Implications for Global Security, Toronto, 27-30 June, 1988, WMO/OMM - No. 710, 1988, p. 89.
- WMO. Conference Proceedings - World Conference on the Changing Atmosphere - Implications for Global Security, Toronto, 27-30 June, 1988. WMO/OMM - No. 710, 1988.
- Statement of Eduard Shevardnadze, Soviet Foreign Minister, at the UN General Assembly, 43rd Session, 27 September, 1988. U.N. Doc. A/43/PV.6, 28 September, 1988, pp. 56-83.
- European Fluorocarbon Technical Committee, EFCTC Policy on Technology Transfer to Developing Countries, 24 April, 1989.
- Gupta, S., and Pachauri, R.K. eds. Proceedings of the International Conference on Global Warming and Climate Change - Perspectives from Developing Countries. New Delhi: TERI, 1989.
- Mitra, A.P. 'Status and Policy Implications of Global Change: the Indian Scene', in S. Gupta and R.K. Pachauri, eds., Proceedings of the International Conference on Global Warming and Climate Change - Perspectives from Developing Countries, (New Delhi: TERI, 1989), p. 135.
- Ministerial Conference on Atmospheric Pollution and Climate Change. The Noordwijk Declaration on Climate Change. Leidschendam: Minister of Housing, Physical Planning and Environment, The Netherlands, 1989.
- Hills, Carla A. 'Trade-Related Aspects of Intellectual Property Rights', Department of State Bulletin, Vol. 89, No. 2152, November, 1989, pp. 55-9.
- TERI. Report on Global Warming and Associated Impacts. New Delhi: TERI, June 1990.
- TERI. Strategies for Limiting Carbon Dioxide Emissions in India. New Delhi: TERI, November 1990.
- World Resources Institute. World Resources 1990-91. Oxford: Oxford University Press, 1990.
- Lashof, Daniel A., and Tirpak, Dennis A. eds. Policy Options for Stabilizing Global Climate. London: Hemisphere Publishing Corporation, 1990.
- Second World Climate Conference. 'Conference Statement - Scientific/Technical Sessions', in J. Jäger and H.L. Ferguson, eds., Climate Change: Science, Impacts and Policy, (Cambridge: Cambridge University Press, 1991), pp. 497-503.
- Second World Climate Conference. Ministerial Declaration, in J. Jäger and H.L. Ferguson, eds., Climate Change: Science, Impacts and Policy, (Cambridge: Cambridge University Press, 1991), pp. 535-9.
- Jäger, J., and Ferguson, H.L. eds. Climate Change: Science, Impacts and Policy. Cambridge: Cambridge University Press, 1991.
- Tlatelolco Platform on Environment and Development, 4-7 March, 1991. UN Doc. A/CONF.151/PC/L.30.
- The Keystone Center. Oslo Plenary Session, Final Consensus Report: Global Initiative for the Security and Sustainable Use of Plant Genetic Resources. Keystone: The Keystone Center, 1991.

- Genetic Resources Action International (GRAIN). Improving the International System to Promote Biodiversity Conservation at the Community-Level. 1991.
- Meeting of OECD Ministers on Environment and Development. Policy Statement. Paris, 2-3 December, 1991.
- Letter from Anil Agarwal to R. Rajamani, 14/1/91.
- Mitra, A.P. ed. Greenhouse Gas Emissions in India: A Preliminary Report. New Delhi: CSIR, 1991.
- US Department of Energy. National Energy Strategy: First Edition 1991-1992. Washington, D.C.: Department of Energy, February 1991.
- Ministerial Conference of Developing Countries on Environment and Development. Beijing Ministerial Declaration on Environment and Development. Beijing, 18-19 June, 1991.
- People's Commission on Environment and Development (PCED), India. Report - Public Hearing on Environmental Problems and Developmental Strategies - Bombay, 16-17 November, 1991. New Delhi: PCED, 1991.
- UNEP. Annual Report of the Executive Director - 1991. Nairobi: UNEP, 1992.
- Manaus Declaration on the United Nations Conference on Environment and Development. 10 February, 1992.
- Singapore Resolution on Environment and Development. 18 February, 1992.
- The Fourth World Congress on National Parks and Protected Areas. The Caracas Declaration. Caracas, 21 February, 1992.
- Joint Communique of the SAARC Ministers of Environment, New Delhi, 8-9 April, 1992, 9 April, 1992.
- Kuala Lumpur Declaration on Environment and Development, 29 April, 1992.

D. Newspapers

Indian

Deccan Herald

The Economic Times

The Hindu

The Times of India

Indian Express

Financial Express

The Statesman

Hindustan Times

Foreign

The New York Times

International Herald Tribune

The Washington Post

Financial Times

Terraviva

Earth Summit Times

Jornal do Brasil

E. Interviews

- Interview with V.P. Jauhari, Deputy Secretary, MOEF, New Delhi, 10/9/90.
 Interview with Madhava Sarma, Additional Secretary, MOEF, New Delhi, 15/9/90.
 Interview with Anil Agarwal, Director, CSE, Rio de Janeiro, 9/6/92.
 Interview with Dr Ashok Khosla, Chairman, International Facilitating Committee, Earth Summit, Rio de Janeiro, 13/6/92.
 Interview with R. Rajamani, Secretary, MOEF, Rio de Janeiro, 14/6/92.
 Interview with Dr D.K. Biswas, Adviser, MOEF, Rio de Janeiro, 14/6/92.
 Interview with Prof. Madhav Gadgil, Indian Institute of Science, Bangalore, 18/3/93.
 Interview with Mostafa Tolba, former Executive Director, UNEP, New Delhi, 21/4/93.
 Interview with Keshav Desiraju, Director, MOEF, New Delhi, 26/4/93.
 Interview with Renu Jain, Public Relations and Conference Officer, Society for Development Alternatives, New Delhi, 5/5/93.
 Interview with T.N. Seshan, former Cabinet Secretary, New Delhi, 19/5/93.
 Interview with Dr Suman Sahai, Convenor, 'Gene Campaign', New Delhi, 12/6/93.
 Interview with former Foreign Secretary, Muchkund Dubey, New Delhi, 15/6/93.
 Interview with Jill Carr-Harris, South-South Solidarity, New Delhi, 15/6/93.
 Interview with Prof Satish Kumar, Head, School of Diplomacy, Jawaharlal Nehru University, New Delhi, 18/6/93.
 Interview with A.K. Damodaran, New Delhi, 29/6/93.
 Interview with Dr K. Chatterjee, former Consultant, MOEF, New Delhi, 30/6/93.
 Interview with Dr Indrani Chandrasekharan, Joint Director, MOEF, New Delhi, 30/6/93.
 Interview with Praful Bidwai, The Times of India, New Delhi, 3/7/93.
 Interview with Thomas Mathew, former Secretary-General, WWF-India, New Delhi, 19/7/93.
 Interview with Samar Singh, Additional Secretary, MOEF, New Delhi, 19/7/93.
 Interview with Dr Sanjay Kathuria, Economist, World Bank, New Delhi, 20/7/93.
 Interview with K. Subrahmanyam, former Director, Institute for Defense Studies and Analysis, New Delhi, 21/7/93.

II. SECONDARY SOURCES

A. Books

- Acharya, Rohini. Intellectual Property, Biotechnology and Trade: The Impact of the Uruguay Round on Biodiversity. Maastricht: Maastricht Economic Research Institute on Innovation and Technology, 1991.
 Adams, Patricia. Odious Debts: Loose Lending, Corruption, and the Third World's Environmental Legacy. London: Earthscan Publications Ltd., 1979.
 Adams, W.M. Green Development: Environment and Sustainability in the Third World. London: Routledge, 1990.
 Adiseshiah, Malcolm S. ed. Sustainable Development - Its Content, Scope and Prices. Delhi: Lancer International, 1990.
 Agarwal, Anil, and Narain, Sunita. Global Warming in an Unequal World: A Case of Environmental Colonialism. New Delhi: CSE, 1991.
 Agarwal, Anil, and Narain, Sunita. Towards a Green World. New Delhi: CSE, 1992.

- Allison, Graham T. Essence of Decision - Explaining the Cuban Missile Crisis. Boston: Little, Brown and Company, 1971.
- Andresen, Steinar, and Østreg, Willy. International Resource Management: The Role of Science and Politics. London: Belhaven Press, 1989.
- Angell, D.J.R., Comer, J.D., and Wilkinson, M.L.N. Sustaining Earth: Response to the Environmental Threat. London: Macmillan Academic and Professional Limited, 1990.
- Bandyopadhyaya, J. The Making of India's Foreign Policy: Determinants, Institutions, Processes and Personalities. Bombay: Allied Publishers, 1970.
- Belcher, Brian, and Hawtin, Geoffrey. A Patent on Life: Ownership of Plant and Animal Research. Ottawa: IDRC, 1991.
- Benedick, Richard Elliot. Ozone Diplomacy: New Directions in Safeguarding the Planet. London: Harvard University Press, 1991.
- Benedick, Richard Elliot, et al. Greenhouse Warming: Negotiating a Global Regime. Washington, DC: WRI, 1991.
- Bhagwati, Jagdish. India in Transition - Freeing the Economy. Oxford: Clarendon Press, 1993.
- Bhagwati, Jagdish N., and Ruggie, John Gerard. eds. Power, Passions, and Purpose - Prospects for North-South Negotiations. London: The MIT Press, 1984.
- Bradnock, Robert. India's Foreign Policy Since 1971. London: Royal Institute for International Affairs, Pinter Publishers, 1990.
- Brandt, Willy. North-South: A Programme for Survival: The Report of the Independent Commission on International Development Issues. London: Pan Books, 1980.
- Bull, Hedley. Justice in International Relations. Waterloo: University of Waterloo, 1983.
- Bull, Hedley, and Watson, Adam. eds. The Expansion of International Society. Oxford: Clarendon Press, 1984.
- Bull, Hedley. The Anarchical Society - A Study of Order in World Politics. London: The Macmillan Press Ltd., 1977.
- Caldwell, Lynton Keith. International Environmental Policy: Emergence and Dimensions, 2nd edn. London: Duke University Press, 1990.
- Caldwell, Lynton Keith. Between Two Worlds: Science, the Environmental Movement, and Policy Choice. Cambridge: Cambridge University Press, 1990.
- Carroll, John E. ed. International Environmental Diplomacy. Cambridge: Cambridge University Press, 1988.
- Centre for Science and Environment (CSE). The State of India's Environment - 1982: A Citizens' Report. New Delhi: CSE, 1982.
- Centre for Science and Environment (CSE). The State of India's Environment - 1984-85: The Second Citizens' Report. New Delhi: CSE, 1985.
- Clark, Norman, and Juma, Calestous. Biotechnology for Sustainable Development - Policy Options for Developing Countries. Nairobi: Acts Press, 1991.
- Cohen, Stephen P., and Park, Richard L. India: Emergent Power?. New York: Crane, Russak, 1978.
- Court, Thijs De La. Beyond Brundtland - Green Development in the 1990s. London: Zed Books Ltd., 1990.
- Durning, Alan B. Poverty and the Environment: Reversing the Downward Spiral. Washington, DC: Worldwatch Institute, 1989.
- Dwivedi. O.P., and Jain, R.B. India's Administrative State. Delhi: Gitanjali Publishing

- House, 1985.
- Eckholm, Erik P. Losing Ground: Environmental Stress and World Food Prospects. Oxford: Pergamon, 1978.
- Falk, Richard A. This Endangered Planet: Prospects and Proposals for Human Survival. New York: Vintage Books, 1972.
- Flavin, Christopher. Slowing Global Warming: A Worldwide Strategy. Washington, DC: Worldwatch Institute, 1989.
- Gadgil, Madhav, and Guha, Ramachandra. This Fissured Land: An Ecological History of India. Oxford: Oxford University Press, 1992.
- Gadgil, Madhav. Deforestation: Problems and Prospects. New Delhi: Society for Promotion of Wastelands Development, 1989.
- Gosovic, Branislav. The Quest for World Environmental Cooperation: The Case of the UN Global Environment Monitoring System. London: Routledge, 1992.
- Gribbin, John. The Hole in the Sky - Man's Threat to the Ozone Layer. London: Corgi Books, 1988.
- Grubb, Michael. The Greenhouse Effect: Negotiating Targets. London: The Royal Institute of International Affairs, 1989.
- Grubb, Michael, Koch, Matthias, Thomson, Koy, Munson, Abby, and Sullivan, Francis. The 'Earth Summit' Agreements: A Guide and Assessment. London: Earthscan Publications Limited, 1993.
- Guha, Ramachandra. The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya. Delhi: Oxford University Press, 1989.
- Hadjor, Kofi Bueno. ed. New Perspectives in North-South Dialogue - Essays in Honour of Olof Palme. London: I.B. Tauris and Company Limited, 1988.
- Haigh, Nigel. EEC Environmental Policy and Britain, 2nd rev. edn. Harlow: Longman, 1989.
- Hansen, Roger D. Beyond the North-South Stalemate. London: McGraw-Hill Book Company, 1979.
- Haq, Mahbub Ul. The Poverty Curtain - Choices for the Third World. New York: Columbia University Press, 1976.
- Hardgrave, Robert L., Jr., and Kochanek, Stanley A. India - Government and Politics in a Developing Nation, 5th edn. London: Harcourt Brace Jovanovich College Publishers, 1993.
- Hays, Samuel P. Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-85. Cambridge: Cambridge University Press, 1987.
- Hazarika, Sanjoy. Bhopal: The Lessons of a Tragedy. New Delhi: Penguin Books (India) Pvt. Ltd., 1987.
- Hurrell, Andrew, and Kingsbury, Benedict. eds. The International Politics of the Environment. Oxford: Clarendon Press, 1992.
- International Conference on Global Warming and Climatic Change: African Perspectives. The Nairobi Declaration on Climatic Change. Nairobi: UNEP, 1990.
- Juma, Calestous. The Gene Hunters: Biotechnology and the Scramble for Seeds. London: Zed Books, 1989.
- Käkönen, Jyrki. ed. Perspectives on Environmental Conflict and International Politics. London: Pinter Publishers, 1992.
- Kapur, Harish. India's Foreign Policy, 1947-92: Shadows and Substance. London: Sage Publications Ltd., 1994.
- Kaufmann, Johann. ed. Effective Negotiation: Case Studies in Conference Diplomacy.

- Dordrecht: Martinus Nijhoff Publishers, 1989.
- Keohane, Robert O., and Nye, Joseph S. eds. Transnational Relations and World Politics. London: Harvard University Press, 1971.
- Keohane, Robert O., and Nye, Joseph S. Power and Interdependence: World Politics in Transition. Boston: Little, Brown, 1977.
- Keohane, Robert O. After Hegemony: Cooperation and Discord in the World Political Economy. Princeton: Princeton University Press, 1984.
- Khan, Iqbal. ed. Fresh Perspectives on India and Pakistan. Oxford: Bougainvillea Books, 1985.
- Kirdar, Üner. ed. Ecological Change: Environment, Development and Poverty Linkages. New York: United Nations, 1992.
- Kloppenborg, Jack R., Jr. ed. Seeds and Sovereignty: The Use and Control of Plant Genetic Resources. London: Duke University Press, 1988.
- Krasner, Stephen. Structural Conflict - The Third World Against Global Liberalism. London: University of California Press, 1985.
- Krasner, Stephen D. ed. International Regimes. New York: Cornell University Press, 1983.
- Latin American and Caribbean Commission on Development and Environment. Our Own Agenda. New York: UNDP, 1990.
- Leggett, Jeremy. ed. Global Warming: The Greenpeace Report. Oxford: Oxford University Press, 1990.
- Luard, Evan. The Globalization of Politics: The Changed Focus of Political Action in the Modern World. London: Macmillan, 1990.
- MacNeill, Jim, Winsemius, Pieter, and Yakushiji, Taizo. Beyond Interdependence. Oxford: Oxford University Press, 1991.
- Makhijani, Arjun, Makhijani, Annie, and Bickel, Amanda. Saving Our Skins: Technical Potential and Policies for the Elimination of Ozone-Depleting Chlorine Compounds. Washington, D.C.: The Environmental Policy Institute and the Institute for Energy and Environmental Research, 1988.
- Malhotra, Inder. Indira Gandhi: A Personal and Political Biography. London: Hodder and Stoughton, 1989.
- Mansbach, Richard W., Ferguson, Yale H., and Lampert, Donald E. The Web of World Politics. Englewood Cliffs: Prentice-Hall Inc., 1976.
- Mathews, Jessica Tuchman. ed. Preserving the Global Environment: The Challenge of Shared Leadership. London: W.W. Norton and Company, 1991.
- McCormick, John. The Global Environmental Movement: Reclaiming Paradise. London: Belhaven Press, 1989.
- Meadows, D.H. et al. The Limits to Growth. London, Earth Island Ltd., 1972.
- Mellor, John W. ed. India: A Rising Middle Power. Boulder: Westview, 1979.
- Mintzer, Irving M. Confronting Climate Change: Risks, Implications and Responses. Cambridge: Cambridge University Press, 1992.
- Misra, B.B. Government and Bureaucracy in India 1947-76. Delhi: Oxford University Press, 1986.
- Mooney, Pat Roy. Seeds of the Earth: A Private or Public Resource? Ottawa: ICDA, 1979.
- Morgenthau, Hans J. Politics Among Nations, 5th edn. New York: Alfred A. Knopf, Inc., 1978.
- Mortimer, Robert A. The Third World Coalition in International Politics. New York:

Praeger Publishers, 1980.

National Institute of Science, Technology and Development Studies (NISTADS). The Convention on Biodiversity, Intellectual Property Rights and Policy Options. New Delhi: NISTADS, 1991.

Nicholson, Max. The New Environmental Age. Cambridge: Cambridge University Press, 1987.

Nitze, William A. The Greenhouse Effect: Formulating a Convention. London: The Royal Institute of International Affairs, 1990.

Noorani, A.G. Indian Affairs: The Political Dimension. Delhi: Konark Publishers Private Limited, 1990.

O'Neill, Robert and Vincent, R.J. eds. The West and the Third World: Essays in Honour of J.D.B. Miller. London: Macmillan, 1990.

ODA. Biological Diversity and Developing Countries - Issues and Options. London: ODA, 1991.

OECD. Biotechnology, Agriculture and Food. Paris: OECD, 1992.

OECD. Biotechnology - Economic and Wider Impacts. Paris: OECD, 1989.

Oldenburg, Philip. ed. India Briefing, 1993. Boulder: Westview Press, 1993.

Oye, Kenneth. ed. Cooperation Under Anarchy. Princeton: Princeton University Press, 1986.

Panchamukhi, V.R., and Kumar, Nagesh. eds. Biotechnology Revolution and the Third World. New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988.

Parry, M.L. et al. eds. The Potential Socio-Economic Effects of Climate Change in South-East Asia. Nairobi: UNEP, 1992.

Porter, Gareth, and Brown, Janet Welsh. Global Environmental Politics. Boulder: Westview Press, 1991.

Potter, David C. India's Political Administrators 1919-1983. Oxford: Oxford University Press, 1986.

Prasad, Bimal. ed. India's Foreign Policy - Studies in Continuity and Change. Delhi: Vikas Publishing House Private Limited, 1979.

Prescott-Allen, Christine, and Prescott-Allen, Robert. The First Resource: Wild Species in the North American Economy. London: Yale University Press, 1986.

Rawat, Ajay S. ed. Indian Forestry: A Perspective. New Delhi: Indus Publishing Co., 1993.

Repetto, R., and Gillis, M. eds. Public Policies and the Misuse of Forest Resources. Cambridge: Cambridge University Press, 1988.

Roberts, Adam, and Kingsbury, Benedict. eds. United Nations, Divided World. London: Clarendon Press, 1988.

Rothstein, Robert L. Global Bargaining: UNCTAD and the Quest for a New International Economic Order. Princeton: Princeton University Press, 1979.

Rowlands, Ian H., and Greene, Malory. eds. Global Environmental Change and International Relations. London: Macmillan Academic and Professional Ltd., 1992.

Saksena, K.D. Environmental Planning Policies and Programmes in India. Delhi: Shipra Publications, 1993.

Shiva, Vandana, Meher-Homji, V.M., Jayal, N.D. Forest Resources: Crisis and Management. Dehra Dun: Natraj Publishers, 1992.

Shiva, Vandana. Biotechnology and the Environment. Pulau Pinang: Third World Network, 1991.

- Shiva, Vandana. Biodiversity: A Third World Perspective. Pulau Pinang: Third World Network, n.d.
- Silva, E.J. Da, Ratledge, C., and Sasson, A. eds. Biotechnology - Economic and Social Aspects: Issues for Developing Countries. Cambridge: Cambridge University Press, 1992.
- Singh, Manmohan Singh. Environment and the New Economic Policies. New Delhi: Society for Promotion of Wastelands Development, 17 June, 1992.
- Singh, Shekhar. ed. Environmental Policy in India. New Delhi: Indian Institute of Public Administration, 1984.
- Singh, Digvijay. The Eco-Vote: Peoples' Representatives and Global Environment. New Delhi: Prentice-Hall of India Private Limited, 1985.
- Sjostedt, Gunnar. ed. International Environmental Negotiation. London: Sage Publications Ltd., 1993.
- South Centre. Environment and Development - Towards a Common Strategy of the South in the UNCED Negotiations and Beyond. Geneva: South Centre, 1991.
- Stone, Peter. Did We Save the Earth at Stockholm? London: Earth Island Ltd., 1973.
- Taylor, Paul, and Groom, A.J.R. eds. Global Issues in the United Nations' Framework. London: Macmillan, 1989.
- The Ecologist. Blueprint for Survival. London: Penguin Books Ltd., 1972.
- The New World Dialogue on Environment and Development in the Western Hemisphere. Compact for a New World. Washington, DC: WRI, 1991.
- The South Commission. The Challenge to the South. Oxford: Oxford University Press, 1990.
- The World Bank. World Development Report 1992: Development and the Environment. Oxford: Oxford University Press, 1992.
- Thomas, Caroline. The Environment in International Relations. London: The Royal Institute of International Affairs, 1992.
- Timberlake, Lloyd. Africa in Crisis: The Causes, the Cures of Environmental Bankruptcy, new edn. London: Earthscan Publications Ltd., 1991, new edn.
- Tinbergen, Jan. Reshaping the International Order: A Report to the Club of Rome. New York: E.P. Dutton and Co., Inc., 1976.
- Tolba, M.K. ed. Evolving Environmental Perceptions: From Stockholm to Nairobi. London: Butterworths, 1989.
- Tolba, M.K. Earth Matters. Nairobi: UNEP, 1983.
- Tucker, Robert W. The Inequality of Nations. London: Martin Robertson and Company Limited, 1977.
- UNDP. Human Development Report 1992. Oxford: Oxford University Press, 1992.
- Waltz, Kenneth. Man, the State and War: A Theoretical Analysis. New York: Columbia University Press, 1959.
- Waltz, Kenneth. Theory of International Politics. London: McGraw-Hill Book Company, 1979.
- Ward, Barbara, and Dubos, Rene. Only One Earth: The Care and Maintenance of a Small Planet. London: Penguin Books Ltd., 1972.
- Ward, Barbara. Progress for a Small Planet. London: Earthscan Publications Limited, 1988 (first published 1979).
- Weiss, Edith Brown. In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity. Tokyo: United Nations University, 1989.
- Westing, Arthur H. ed. Global Resources and International Conflict: Environmental

- Factors in Strategic Policy and Action. Oxford: Oxford University Press, 1986.
- White, Rodney R. North, South, and the Environmental Crisis. London: University of Toronto Press, 1993.
- Winpenny, James T. ed. Development Research: The Environmental Challenge. London: ODI, 1991.
- World Commission on Environment and Development. Our Common Future. Oxford: Oxford University Press, 1987.

B. Articles

- Abraham, C.M., and Rosencranz, Armin. 'An Evaluation of Pollution Control Legislation in India', Columbia Journal of Environmental Law, Vol. 11, 1986, pp. 101-18.
- Agarwal, Anil, and Narain, Sunita. 'A New Morality', The Illustrated Weekly of India, 24 December, 1989, pp. 84-7.
- Agarwal, Anil. 'The North-South Perspective: Alienation or Interdependence?', Ambio, Vol. 19, No. 2, April 1990, pp. 94-6.
- Ahmed, Iftikhar. 'Introduction and Overview', in Iftikhar Ahmed, ed., Biotechnology: A Hope or a Threat?, (London: The Macmillan Press, 1992), pp. 1-14.
- Allaby, Michael. 'Environment', Britannica Book of the Year, 1986, pp. 242-8.
- Andersen, Walter K. 'India's 1991 Elections: The Uncertain Verdict', Asian Survey, Vol. XXXI, No. 10, October 1991, pp. 976-89.
- Anderson, Christopher. 'Industry Surprised by Firm US Stance on Biodiversity Treaty', Nature, Vol. 357, No. 6378, 11 June, 1992, p. 428.
- Arden-Clarke, Charles. 'South-North Terms of Trade, Environmental Protection and Sustainable Development', International Environmental Affairs, Vol. 4, No. 2, Spring 1992, pp. 122-38.
- Bagla, Pallava. 'Science Sidelined', Frontline, 12 March, 1993, pp. 85-8.
- Bajwa, G.S. 'Environmental Management: Problems and Prospects', in R.K. Saprú, ed., Environment Management in India, (New Delhi: Ashish Publishing House, 1987), Vol. 2, pp. 207-17.
- Bandyopadhyay, Jayanta, and Shiva, Vandana. 'Development, Poverty and the Growth of the Green Movement in India', The Ecologist, Vol. 19, No. 3, May/June, 1989, pp. 111-7.
- Beckerman, Wilfrid. 'Global Warming and International Action: An Economic Perspective', in Andrew Hurrell and Benedict Kingsbury, eds., The International Politics of the Environment, (Oxford: Clarendon Press, 1992), pp. 253-89.
- Beitz, Charles R. 'Justice and International Relations', Philosophy and Public Affairs, Vol. 4, 1974, pp. 360-89.
- Birnie, Patricia. 'The Role of International Law in Solving Certain Environmental Conflicts', in John E. Carroll, ed., International Environmental Diplomacy, (Cambridge: Cambridge University Press, 1988), pp. 95-121.
- Brady, Nyle C. 'Agricultural Research and US Trade', Science, Vol. 230, 1 November, 1985, p. 499.
- Brown, William L. 'Plant Genetic Resources: A View from the Seed Industry', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 218-30.

- Buttel, Frederick H., and Kenney, Martin. 'Prospects and Strategies for Overcoming Dependence', in V.R. Panchamukhi and Nagesh Kumar, eds., Biotechnology Revolution and the Third World, (New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988), pp. 315-48.
- Buttel, Frederick H., Hawkins, Ann P., and Power, Alison G. 'From Limits to Growth to Global Change: Constraints and Contradictions in the Evolution of Environmental Science and Ideology', Global Environmental Change, Vol. 1, No. 1, 1990, pp. 57-66.
- Castro, João Augusto de Araujo. 'Environment and Development: The Case of the Developing Countries', International Organization, Vol. 26, 1972, pp. 401-16.
- Chang, T.T. 'Conservation of Rice Genetic Resources - Luxury or Necessity', Science, Vol. 224, 20 April, 1984, pp. 251-6.
- Chimni, B.S. 'Political Economy of the Uruguay Round of Negotiations: A Perspective', International Studies, Vol. 29, No. 2, April-June 1992, pp. 135-58.
- Chishti, Sumitra. 'India's Foreign Economic Policy', in Bimal Prasad, ed., India's Foreign Policy - Studies in Continuity and Change, (Delhi: Vikas Publishing House Private Limited, 1979), pp. 35-56.
- Coghlan, Andy. 'Boom Time for Biotechnology', New Scientist, Vol. 133, No. 1803, 11 January, 1992, p. 11.
- Coghlan, Andy. 'Biodiversity Convention a 'Lousy Deal', Says US', New Scientist, Vol. 135, No. 1828, 4 July, 1992, p. 9.
- Crawford, Mark. 'United States Floats Proposal to Help Prevent Global Ozone Depletion', Science, Vol. 234, 21 November, 1986, pp. 927-9.
- CSE. 'Statement of the South Asian NGO Summit, New Delhi, February 17-19, 1992', reprinted in RIS Digest, Vol. 9, Nos. 1 & 2, June 1992, pp. 32-42.
- Dadzie, Kenneth. 'The United Nations and the Problem of Economic Development', in Adam Roberts and Benedict Kingsbury, eds., United Nations, Divided World, (London: Clarendon Press, 1988), pp. 139-57.
- Dembo, David, and Morehouse, Ward. 'Biotechnology in the Developing World: Learning from Experience', Biotechnology and Development Review, No. 2, Nov. 1992, pp. 1-2, 5.
- Dembo, David, Dias, Clarence, and Morehouse, Ward. 'Trends and Prospects for Developing Countries', in V.R. Panchamukhi and Nagesh Kumar, eds., Biotechnology Revolution and the Third World, (New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988), pp. 153-92.
- Deudney, Daniel. 'The Case Against Linking Environmental Degradation and National Security', Millennium: Journal of International Studies, Vol. 19, No. 3, 1990, pp. 461-76.
- Dickson, David, and Marshall, Eliot. 'Europe Recognizes the Ozone Threat', Science, Vol. 243, 10 March, 1989, p. 1279.
- Djerassi, Carl. 'Making Drugs (And Soaking the Poor?)', Nature, Vol. 310, 9 August, 1984, pp. 517-8.
- Doelle, Horst W., and Gumbira-Sa'id, E. 'Joint Microbial Biotechnological Ventures in Developing Countries: Social Promises and Economic Considerations', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 235-65.
- Dornbusch, Rudiger, and Fischer, Stanley. 'Third World Debt', Science, Vol. 234, 14 November, 1986, pp. 836-41

- Dubey, Muchkund. 'India's Foreign Policy in the Evolving Global Order', International Studies, Vol. 30, No. 2, April-June 1993, pp. 117-29.
- Dwivedi, O.P., and Kishore, B. 'India's Environmental Policies: A Review', in Shekhar Singh, ed., Environmental Policy in India, (New Delhi: Indian Institute of Public Administration, 1984), pp. 47-84.
- Ehrlich, Paul R., and Ehrlich, Anne H. 'The Value of Biodiversity', Ambio, Vol. 21, No. 3, May, 1992, pp. 219-26.
- Farman, J.C., Gardiner, B.G., and Shanklin, J.D. 'Large Losses of Total Ozone in Antarctica Reveal Seasonal ClO_x/NO_x Interaction', Nature, Vol. 315, 16 May, 1985, pp. 207-10.
- Finger, Mathias. 'New Horizons for Peace Research: The Global Environment', in Jyrki Käkönen, ed., Perspectives on Environmental Conflict and International Politics, (London: Pinter Publishers, 1992), pp. 5-30.
- Fleagle, Robert G. 'From the International Geophysical Year to Global Change', Review of Geophysics, Vol. 30, No. 4, Nov. 1992, pp. 305-13.
- Fowler, Cary, et al. 'The Laws of Life: Another Development and the New Biotechnologies', Development Dialogue, Issues 1-2, 1988.
- Frankel, Otto H. 'Genetic Resources: Evolutionary and Social Responsibilities', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 19-46.
- Gadgil, Madhav. 'Biodiversity: Time for Bold Steps', The Hindu Survey of the Environment 1992, 1992, pp. 21-3.
- Gadgil, Madhav. 'Conserving India's Biodiversity: The Societal Context', Evolutionary Trends in Plants, Vol. 5, No. 1, 1991, pp. 3-8.
- Gadgil, Madhav. 'Conserving India's Biodiversity: The Human Context', in T.N. Khoshoo and Manju Sharma, eds., Sustainable Management of Natural Resources, (New Delhi: Malhotra Publishing House, 1992), pp. 243-55.
- Gandhi, Indira. 'Man and Environment (Plenary Session of UNCHE, 14 June, 1972)', in DOE, Indira Gandhi on Environment, (New Delhi: DOE, 1984), pp. 20-9.
- Gavaghan, Helen. 'Bush Rejects Scientists' Call for Action on Global Warming', New Scientist, Vol. 125, No. 1703, 10 February, 1990, p. 23.
- Geethakrishnan, K.P. 'Sustainable Development in Operation', in Malcolm S. Adiseshiah, ed., Sustainable Development - Its Content, Scope and Prices, (Delhi: Lancer International in association with India International Centre, 1990), pp. 7-21.
- Geldart, Carol, and Lyon, Peter. 'The Group of 77: A Perspective View', International Affairs, Vol. 57, No. 1, 1981, pp. 79-101.
- Geping, Qu. 'China's Environmental Policy and World Environmental Problems', International Environmental Affairs, Vol. 2, No. 2, Spring 1990, pp. 103-8.
- Glenny, Misha. 'America Attacks Europe Over Stratospheric Ozone ...', New Scientist, Vol. 113, No. 1550, 5 March, 1987, p. 17.
- Gray, C. Boyden, and Rivkin, David B., Jr. 'A "No Regrets" Environmental Policy', Foreign Policy, No. 83, Summer 1991, pp. 47-65.
- Grieco, Joseph M. 'Anarchy and the Limits of Cooperation: A Realist Critique of the Newest Liberal Institutionalism', International Organization, Vol. 42, No. 3, 1988, pp. 485-507.
- Grubb, Michael. 'The Greenhouse Effect: Negotiating Targets', International Affairs, Vol. 66, No. 1, 1990, pp. 67-89.
- Guha, Ramachandra. 'Forestry in British and Post-British India: A Historical

- Analysis', Economic and Political Weekly, Vol. 18, No. 44, October 29, 1983, pp. 1882-96 and Vol. 18, Nos. 45 & 46, November 5-12, 1983, pp. 1940-7.
- Guha, Ramachandra. 'Ecological Roots of Development Crisis', Economic and Political Weekly, Vol. 21, No. 15, 12 April, 1986, pp. 623-6.
- Haas, Peter M. 'Obtaining International Environmental Protection Through Epistemic Consensus', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Limited, 1992), pp. 38-59.
- Haas, Peter. Ozone Alone, No CFCs: Ecological Epistemic Communities and the Protection of Stratospheric Ozone. Amherst: 1990. (Manuscript obtained from author).
- Hampson, Fen Osler. 'Climate Change: Building International Coalitions of the Like-Minded', International Journal, Vol. XLV, No. 1, Winter 1989-90, pp. 44-74.
- Hardin, Garrett. 'The Tragedy of the Commons', Science, Vol. 162, No. 3859, 13 December, 1968, pp. 1243-8.
- Harlan, Jack R. 'Seeds and Sovereignty: An Epilogue', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 356-62.
- Homer-Dixon, Thomas F. 'On the Threshold: Environmental Changes as Causes of Acute Conflict', International Security, Vol. 16, No. 2, 1991, pp. 76-116.
- Hyder, Tariq Osman. 'Climate Negotiations: The North/South Perspective', in Irving M. Mintzer, ed., Confronting Climate Change: Risks, Implications and Responses, (Cambridge: Cambridge University Press, 1992), pp. 323-36.
- Jachtenfuchs, Markus. 'The European Community and the Protection of the Ozone Layer', Journal of Common Market Studies, Vol. XXVIII, No. 3, March 1990, pp. 261-77.
- Jain, Renu. 'The Road from Rio', Development Alternatives, Vol. 3, No. 1, 1993, pp. 1, 3.
- Jamal, Amir H. 'The Socio-Economic Impact of New Biotechnologies in the Third World', in Cary Fowler et al, 'The Laws of Life: Another Development and the New Biotechnologies', Development Dialogue, Issues 1-2, 1988, pp. 5-8.
- Jayaraman, K.S. 'Biotechnology - Indian Centre Receives Funds', Nature, Vol. 355, No. 6357, 16 Jan., 1992, p. 192.
- Johnston, Kathy. 'Europe Agrees to Act for Protection of the Ozone Layer', Nature, Vol. 326, 26 March, 1987, p. 321.
- Johnston, Kathy. 'First Steps in Ozone Protection Agreed', Nature, Vol. 329, 17 September, 1987, p. 187.
- Junne, Gerd. 'The Impact of Biotechnology on International Commodity Trade', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 165-88.
- Kerr, Richard A. 'Greenhouse Science Survives Skeptics', Science, Vol. 256, 22 May, 1992, pp. 1138-40.
- Kindt, J.W., and Menefee, S.P. 'The Vexing Problem of Ozone Depletion in International Environmental Law and Policy', Texas International Law Journal, Vol. 24, 1989, pp. 261-93.
- Kloppenburg, Jack R., Jr., and Kleinman, Daniel Lee. 'Seeds of Controversy: National Property Versus Common Heritage', in Jack R. Kloppenburg, Jr., ed., Seeds and

Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 173-203.

Kloppenborg, Jack R., Jr., and Kleinman, Daniel Lee. 'Plant Genetic Resources: The Common Bowl', in Jack R. Kloppenborg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 1-15.

Koskenniemi, Martti. 'International Liability for Transfrontier Pollution Damage', International Environmental Affairs, Vol. 2, No. 4, Fall 1990, pp. 309-16.

Kothari, Smitu. 'Social Movements and the Redefinition of Democracy', in Philip Oldenburg, ed., India Briefing, 1993, (Boulder: Westview Press, 1993), pp. 131-62.

Kothari, Ashish. 'Politics of Biodiversity Convention', Economic and Political Weekly, Vol. XXVII, Nos. 15-16, April 11-18, 1992, pp. 749-55.

Krishna, Gopal. 'India and the International Order - Retreat from Idealism', in Hedley Bull and Adam Watson, eds., The Expansion of International Society, (Oxford: Clarendon Press, 1984), pp. 269-87.

Lall, K.B. 'India and the New International Economic Order', in Bimal Prasad, ed., India's Foreign Policy - Studies in Continuity and Change, (Delhi: Vikas Publishing House Private Limited, 1979), pp. 57-83.

Leggett, Jeremy. 'Global Warming: A Greenpeace View', in Jeremy Leggett, ed., Global Warming: The Greenpeace Report, (Oxford: Oxford University Press, 1990), pp. 457-80.

MacKenzie, Debora. 'Now It Makes Business Sense to Save the Ozone Layer', New Scientist, Vol. 120, No. 1636, 29 October, 1988, p. 25.

MacKenzie, Debora. 'Storm Clouds Gather Over Climate Talks', New Scientist, Vol. 131, No. 1787, 21 September, 1991, p. 15.

MacNeill, Jim. 'The Greening of International Relations', International Journal, Vol. XLV, No. 1, Winter 1989-90, pp. 1-35.

Mahurkar, Uday. 'Battle Royal', India Today, 31 January, 1991, pp. 66-8.

Mani, Sunil. 'Biotechnology Research in India: Implication for Indian Public Sector Enterprises', Economic and Political Weekly, Vol. XXV, No. 34, 25 August, 1990, pp. M-115-23.

Manzer, L.E. 'The CFC-Ozone Issue: Progress on the Development of Alternatives to CFCs', Science, Vol. 249, 6 July, 1990, pp. 31-5.

Mathews, Jessica Tuchman. 'Introduction and Overview', in Jessica Tuchman Mathews, ed., Preserving the Global Environment: The Challenge of Shared Leadership, (London: W.W. Norton and Company, 1991), pp. 15-38.

Mathews, Jessica Tuchman. 'Redefining Security', Foreign Affairs, Vol. 68, No. 2, 1989, pp. 162-77.

Maxwell, James H., and Weiner, Sanford L. 'Green Consciousness or Dollar Diplomacy? The British Response to the Threat of Ozone Depletion', International Environmental Affairs, Vol. 5, No. 1, Winter 1993, pp. 19-41.

May, Robert M. 'How Many Species Are There On Earth?', Science, Vol. 241, No. 4872, 16 September, 1988, pp. 1441-9.

McNeely, Jeffrey A. 'Biodiversity: The Economics of Conservation and Management', in James T. Winpenny, ed., Development Research: The Environmental Challenge, (London: ODI, 1991).

Megzari, Abdelaziz. 'Negotiation of the Common Fund for Commodities', in Johann Kaufmann, ed., Effective Negotiation: Case Studies in Conference Diplomacy,

- (Dordrecht: Martinus Nijhoff Publishers, 1989), pp. 205-30.
- Mehta, M.C. 'Environmental Cases: What the Judiciary Can Do', The Hindu Survey of the Environment 1992, 1992, pp. 161-3.
- Mellor, John W., and Oldenburg, Philip. 'India and the United States', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 1-13.
- Milner, Helen. 'International Theories of Cooperation Among Nations - Strengths and Weaknesses', World Politics, Vol. 44, No. 3, 1991-92, pp. 466-96.
- Molina, Mario J., and Rowland, F.S. 'Stratospheric Sink for Chlorofluoromethanes; Chlorine Atom-catalysed Destruction of Ozone', Nature, Vol. 249, 28 June, 1974, pp. 810-2.
- Mooney, Pat Roy. 'The Law of the Seed: Another Development and Plant Genetic Resources', Development Dialogue, Issues 1-2, 1983.
- Murphy, Charles F. 'Institutional Responsibility of the National Plant Germplasm System', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 204-17.
- Myers, Norman. 'Tropical Forest Species: Going, Going, Going ...', Scientific American, Vol. 259, No. 6, Dec. 1988, p. 104.
- Myers, Norman. 'Environment and Security', Foreign Policy, No. 74, Spring 1989, pp. 23-41.
- Nayar, Baldev Raj. 'A World Role: The Dialectics of Purpose and Power', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 117-46.
- Nayar, Baldev Raj. 'Regional Power in a Multipolar World', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 147-79.
- Nye, Joseph S., Jr. 'Neorealism and Neoliberalism', World Politics, Volume 40, No. 2, 1987-88, pp. 235-51.
- Pachauri, Rajendra K. 'Sharing Global Environmental Costs', in United Nations University and IFIAS, Workshop Report - Industrial Metabolism: Restructuring for Sustainable Development. Maastricht, 12-13 October, 1989.
- Padmanaban, G. 'An Assessment of the Current Indian Scene in Biotechnology', Current Science, Vol. 60, Nos. 9-10, 25 May, 1991, pp. 510-3.
- Panchamukhi, V.R., and Kumar, Nagesh. 'Impact on Commodity Exports', in V.R. Panchamukhi and Nagesh Kumar, eds., Biotechnology Revolution and the Third World, (New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988), pp. 207-24.
- Parikh, Jyoti, and Parikh, Kirit. 'Role of Unsustainable Consumption Patterns and Population in Global Environmental Stress', Sustainable Development, Vol. 1, No. 1, October 1991, pp. 108-18.
- Paterson, Matthew, and Grubb, Michael. 'The International Politics of Climate Change', International Affairs, Vol. 68, No. 2, April 1992, pp. 293-310.
- Pearce, Fred. 'Last-minute 'Compromise' Saves Biodiversity Treaty', New Scientist, Vol. 134, No. 1823, 30 May, 1992, p. 6.
- Pernetta, John C. 'Impacts of Climate Change and Sea-Level Rise on Small Island States', Global Environmental Change, Vol. 2, No. 1, 1992, pp. 19-31.
- Plant, Glen. 'Institutional and Legal Responses to Global Environmental Change', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Ltd., 1992), pp. 122-44.

- Plucknett, Donald L. 'The Law of the Seed' and the CGIAR: A Critique of Pat Roy Mooney', Development Dialogue, Issue 1, 1985, pp. 97-102.
- Plucknett, D.L., et al. 'Crop Germplasm Conservation and Developing Countries', Science, Vol. 220, 8 April, 1993, pp. 163-9.
- Pollin, Robert, and Zepeda, Eduardo. 'Latin American Debt: The Choices Ahead', in Kofi Bueno Hadjor, ed., New Perspectives in North-South Dialogue - Essays in Honour of Olof Palme, (London: I.B. Tauris and Company Limited, 1988), pp. 102-14.
- Prasad, Bimal. 'An Overview', in Bimal Prasad, ed., India's Foreign Policy - Studies in Continuity and Change, (Delhi: Vikas Publishing House Private Limited, 1979), pp. 481-520.
- Putnam, Robert D. 'Diplomacy and Domestic Politics: The Logic of Two-Level Games', International Organization, Vol. 42, No. 3, Summer 1988, pp. 427-60.
- Ramachandran, S., and Biswas, D.K. 'Infrastructure Development: The Indian Perspective', in V.R. Panchamukhi and Nagesh Kumar, eds., Biotechnology Revolution and the Third World, (New Delhi: Research and Information System for the Non-Aligned and Other Developing Countries, 1988), pp. 443-51.
- Ramachandran, S. 'Government Funding and Support - The Department of Biotechnology', Current Science, Vol. 60, Nos. 9-10, 25 May, 1991, pp. 518-23, 536.
- Ramakrishna, Kilaparti. 'North-South Issues, the Common Heritage of Mankind and Global Environmental Change', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Ltd., 1992), pp. 145-68.
- Ramakrishna, Kilaparti. 'Third World Countries in the Policy Response to Global Climate Change', in Jeremy Leggett, ed., Global Warming: The Greenpeace Report, (Oxford: Oxford University Press, 1990), pp. 421-37.
- Ramakrishna, Kilaparti. 'The Emergence of Environmental Law in the Developing Countries: A Case Study of India', Ecology Law Quarterly, Vol. 12, 1985, pp. 907-35.
- Rathjens, George W. 'Energy and Climate Change', in Jessica Tuchman Mathews, ed., Preserving the Global Environment: The Challenge of Shared Leadership, (London: W.W. Norton and Company, 1991), pp. 154-86.
- Ratledge, Colin. 'Biotechnology: the Socio-Economic Revolution? A Synoptic View of the World Status of Biotechnology', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 1-22.
- Ravenhill, John. 'The North-South Balance of Power', International Affairs, Vol. 66, No. 4, October 1990, pp. 731-48.
- Redclift, Michael. 'Sustainable Development and Global Environmental Change', Global Environmental Change, Vol. 2, No. 1, March, 1992, pp. 32-42.
- Renninger, John P. 'The Failure to Launch Global Negotiations at the 11th Special Session of the General Assembly', in Johann Kaufmann, ed., Effective Negotiation: Case Studies in Conference Diplomacy, (Dordrecht: Martinus Nijhoff Publishers, 1989), pp. 231-54.
- Rhodes, Steven L. 'Climate Change Management Strategies', Global Environmental Change, Vol. 2, No. 3, 1992, pp. 205-14.
- Richardson, J.L. 'Ethical Issues in North-South Relations', in Robert O'Neill and R.J. Vincent, eds., The West and the Third World: Essays in Honour of J.D.B. Miller, (London: Macmillan, 1990), pp. 242-59.

- Rosencranz, A., and Milligan, R. 'CFC Abatement: The Needs of Developing Countries', Ambio, Vol. 19, No. 6-7, October, 1990, pp. 312-6.
- Rothstein, Robert L. 'Epitaph for a Monument to a Failed Protest? A North-South Retrospective', International Organization, Vol. 42, No. 4, Autumn 1988, pp. 725-48.
- Rowlands, Ian H. 'The International Politics of Global Environmental Change', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Ltd., 1992), pp. 19-37.
- Sahai, Suman. 'Patenting of Life Forms: What It Implies', Economic and Political Weekly, Vol. XXVII, No. 17, 25 April, 1992, pp. 878-9.
- Sanwal, Mukul. 'Sustainable Development and the Evolution of International Policy and Law', Sustainable Development, Vol. 1, No. 3, Autumn 1992, pp. 16-22.
- Sattaur, Omar. 'Greens in Muddy Water Over Indian Dam', New Scientist, 5 October, 1991, pp. 16-7.
- Schneider, Stephen. 'The Greenhouse Effect: Science and Policy', Science, Vol. 243, 10 February, 1989, pp. 771-81.
- Sebenius, James K. 'The Law of the Sea Conference: Lessons for Negotiations to Control Global Warming', in Gunnar Sjostedt, ed., International Environmental Negotiation, (London: Sage Publications Ltd., 1993), pp. 189-216.
- Sen, Amartya. 'How is India Doing?', in Iqbal Khan, ed., Fresh Perspectives on India and Pakistan, (Oxford: Bougainvillea Books, 1985), pp. 86-96.
- Sewell, John W., and Zartman, I. William. 'Global Negotiations: Path to the Future or Dead-End Street?', in Jagdish N. Bhagwati and John Gerard Ruggie, eds., Power, Passions, and Purpose - Prospects for North-South Negotiations, (London: MIT Press, 1984), pp. 87-124.
- Silva, E.J. Da. 'Biotechnology: Socio-economic Considerations, Intercultural Perspectives and International Viewpoints', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 189-234.
- Singh, Samar. 'An Indian Government Initiative: People's Participation in Forest Management', Sustainable Development, Vol. 1, No. 1, October, 1991, pp. 122-35.
- Sinha, Dipankar. 'V.P. Singh, Chandra Shekhar, and "Nowhere Politics" in India', Asian Survey, Vol. XXXI, No. 7, July 1991, pp. 598-612.
- Skolnikoff, Eugene B. 'The Policy Gridlock on Global Warming', Foreign Policy, No. 79, Summer 1990, pp. 77-93
- Smith, Tony. 'Changing Configurations of Power in North-South Relations Since 1945', International Organization, Vol. 31, No. 1, 1977, pp. 1-27.
- Smith, Tony. 'The Underdevelopment of Development Literature: The Case of Dependency Theory', World Politics, Vol. 31, 1978-79, pp. 247-88.
- Smith, Thomas B. 'India's Electric Power Crisis: Why do the Lights Go Out?', Asian Survey, Vol. XXXIII, No. 4, April 1993, pp. 376-92.
- Sohn, Louis B. 'The Stockholm Declaration on the Human Environment', Harvard International Law Journal, Vol. 14, 1973, pp. 423-515.
- Solbrig, Otto T. Developing the Capacity to Monitor and Audit. Cambridge, Mass., May 1991.
- Solomon, Barry D., and Ahuja, Dilip R. 'International Reductions of Greenhouse-Gas Emissions', Global Environmental Change, Vol. 1, No. 5, 1991, pp. 343-50.
- Soroos, Marvin S. 'Conflict in the Use and Management of International Commons',

in Jyrki Käkönen, ed., Perspectives on Environmental Conflict and International Politics, (London: Pinter Publishers, 1992), pp. 31-43.

Speth, James Gustave. 'A Post-Rio Compact', Foreign Policy, No. 88, Fall 1992, pp. 145-61.

Srinivas, K. Ravi. 'Private Investment in Biotechnology Promoted in India', Biotechnology and Development Monitor, No. 11, June 1992, pp. 16-7.

Stone, Richard. 'The Biodiversity Treaty: Pandora's Box or Fair Deal?', Science, Vol. 256, 19 June, 1992, p. 1624.

Strange, Susan. 'The Persistent Myth of Lost Hegemony', International Organization, Vol. 41, No. 4, 1987, pp. 551-74.

Sun, Marjorie. 'The Global Fight Over Plant Genes', Science, Vol. 231, 31 January, 1986, pp. 445-7.

Swaminathan, M.S. 'Seeds and Property Rights: A View from the CGIAR System', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 231-54.

Swanson, Timothy M. 'Economics of a Biodiversity Convention', Ambio, Vol. 21, No. 3, May 1992, pp. 250-7.

Thornton, Thomas P. 'India Adrift: The Search for Moorings in a New World Order', Asian Survey, Vol. XXXII, No. 12, Dec. 1992, pp. 1063-77.

Tobey, James A. 'Economic Issues in Global Climate Change', Global Environmental Change, Vol. 2, No. 3, 1992, pp. 215-28.

Vajpayee, Atal Behari. 'India's Foreign Policy Today', in Bimal Prasad, ed., India's Foreign Policy - Studies in Continuity and Change, (Delhi: Vikas Publishing House Private Limited, 1979), pp. 1-10.

Varadarajan, S. 'Intellectual Property and Protection of Right in Biotechnology', Current Science, Vol. 60, Nos. 9-10, 25 May, 1991, pp. 606-9.

Walgate, Robert. 'Making Biotechnology Appropriate - and Environmentally Sound', in E.J. Da Silva, C. Ratledge and A. Sasson, eds., Biotechnology - Economic and Social Aspects: Issues for Developing Countries, (Cambridge: Cambridge University Press, 1992), pp. 284-308.

Walsh, John. 'Seeds of Dissension Sprout at FAO', Science, Vol. 223, 13 January, 1984, pp. 147-8.

Warr, Kiki. 'Ozone: the Burden of Proof', New Scientist, Vol. 128, No. 1740, 27 October, 1990, pp. 36-40.

Weiner, Myron. 'Political Evolution - Party Bureaucracy and Institutions', in John W. Mellor, ed., India: A Rising Middle Power, (Boulder: Westview, 1979), pp. 15-47.

Weiss, Edith Brown. 'Climate Change, Intergenerational Equity and International Law: An Introductory Note', Climatic Change, Vol. 15, Nos. 1-2, Oct. 1989, pp. 327-35.

Wijkman, Per Magnus. 'Managing the Global Commons', International Organization, Vol. 36, No. 3, 1982, pp. 511-36.

Willetts, Peter. 'The Pattern of Conferences', in Paul Taylor and A.J.R. Groom, eds., Global Issues in the United Nations' Framework, (London: Macmillan, 1989), pp. 35-72.

Williams, Marc. 'Re-Articulating the Third World Coalition: The Role of the Environmental Agenda', Third World Quarterly, Vol. 14, No. 1, 1993, pp. 7-29.

Wilson, Edward O. 'Threats to Biodiversity', Scientific American, Vol. 261, No. 3, September 1989, pp. 60-6.

- Wirth, David A. 'Climate Chaos', Foreign Policy, No. 74, Spring 1989, pp. 3-22.
- Wood, William B. 'Tropical Deforestation: Balancing Regional Development Demands and Global Environmental Concerns', Global Environmental Change, Vol. 1, No. 1, December 1990, pp. 23-41.
- Wood, David. 'Crop Germplasm: Common Heritage or Farmers' Heritage?', in Jack R. Kloppenburg, Jr., ed., Seeds and Sovereignty: The Use and Control of Plant Genetic Resources, (London: Duke University Press, 1988), pp. 274-89.
- Yap, Nonita. 'NGOs and Sustainable Development', International Journal, Vol. XLV, No. 1, Winter 1989-90, pp. 75-105.
- Young, Oran. 'Global Environmental Change and International Governance', in Ian H. Rowlands and Malory Greene, eds., Global Environmental Change and International Relations, (London: Macmillan Academic and Professional Ltd., 1992), pp. 6-18.
- Young, Oran. 'The Politics of International Regime Formation: Managing Natural Resources and the Environment', International Organization, Vol. 43, No. 3, 1989, pp. 349-75.

