
EXPLORING THE EARTH SUMMIT

**FINDINGS OF THE RIO UNITED NATIONS
CONFERENCE ON ENVIRONMENT AND
DEVELOPMENT:**

IMPLICATIONS FOR SOUTH AFRICA

Rachel Paula Wynberg

*A dissertation submitted to the Department of Environmental and Geographical
Science, University of Cape Town, in partial fulfilment of the requirements for the
degree of Master of Philosophy*

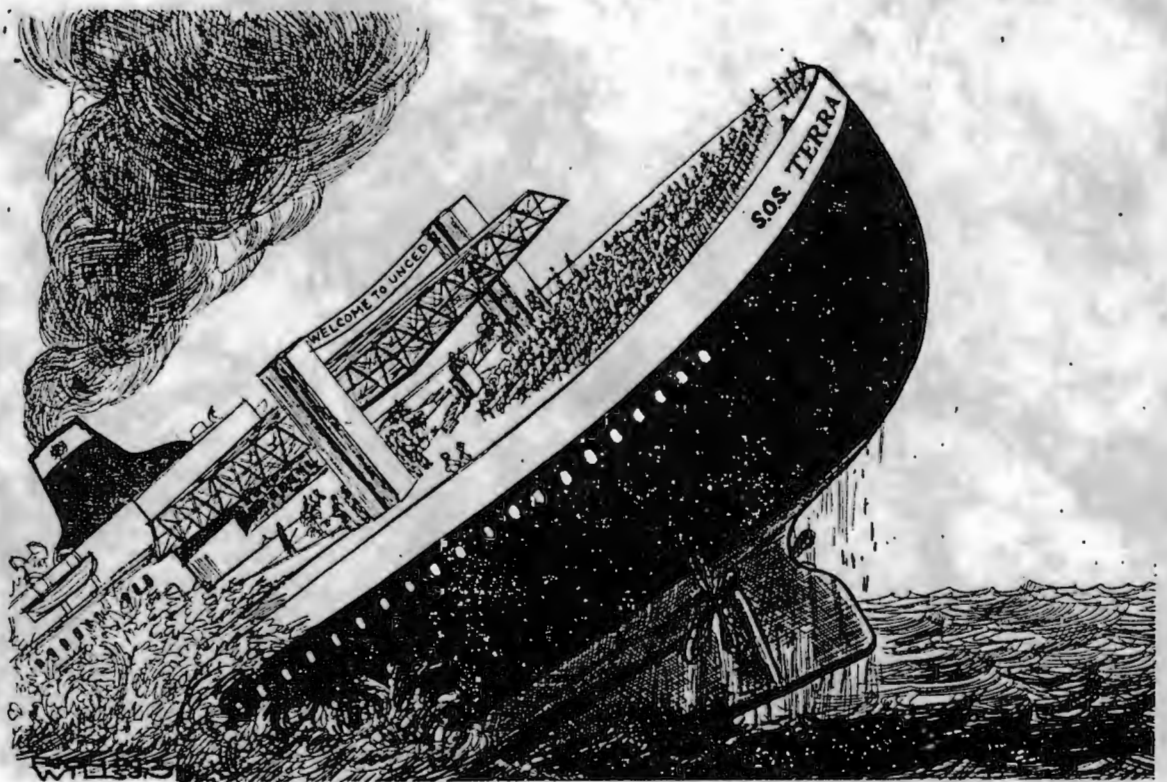
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"A green chaos. Or a wood."

- JOHN FOWLES, *The Tree*



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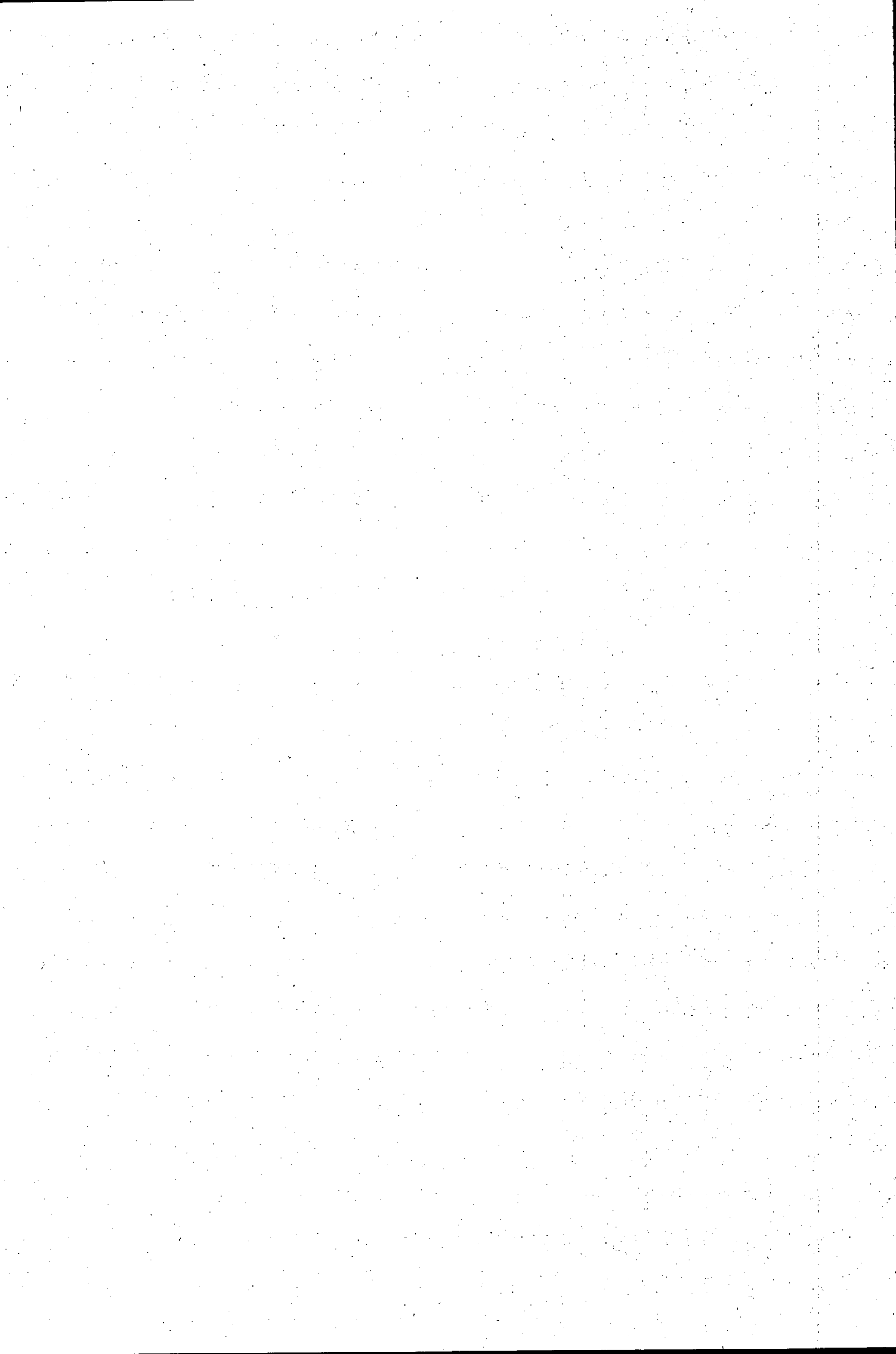
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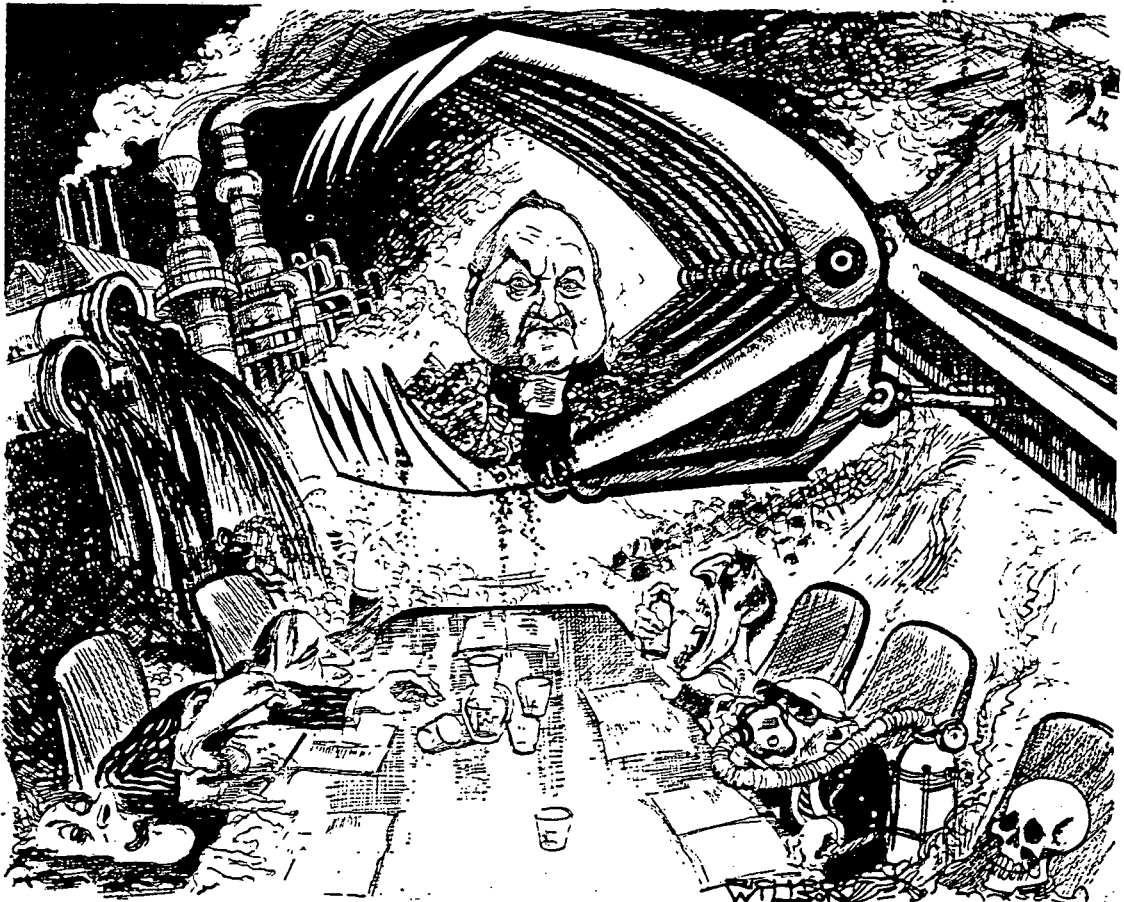
GLOSSARY OF TERMS

\$	American dollars
ACC	Administrative Committee on Coordination
African	South African of African descent (but not "mixed race")
ANC	African National Congress
BCSD	Business Council for Sustainable Development
black	The term used to describe all non-white South Africans
CBO	Community Based Organisation
CFC	Chlorofluorocarbon
CO ₂	Carbon Dioxide
CSIR	Council for Scientific and Industrial Research
EC	European Community
ECOSOC	Economic and Social Council of the UN
EEZ	Exclusive Economic Zone
EST	Environmentally Sound Technology
FAO	Food and Agriculture Organisation of the UN
G-77	A group of 145 developing nations
GATT	General Agreement on Tariffs and Trade
GEF	Global Environmental Facility of the World Bank, UNEP, and UNDP
GDP	Gross Domestic Product
GNP	Gross National Product
GOOS	Global Ocean Observing System
ha	hectares
IEEA	Integrated Environmental and Economic Accounting
ICC	International Chamber of Commerce
ICFTU	International Confederation of Free Trade Unions
ICSU	International Council of Scientific Unions
IDA	International Development Association
IFP	Inkatha Freedom Party
IGADD	Intergovernmental Authority for Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund

INC	Intergovernmental Negotiating Committee
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPR	Intellectual Property Right
IUCN	The World Conservation Union
NGO	Non-Governmental Organisation
North	The industrialised or "developed" nations of the world, primarily in the Northern Hemisphere, also known as the "First World"
OAU	Organisation for African Unity
ODA	Official Development Assistance
OECD	Organisation of Economic Cooperation and Development - a group of 24 industrialised countries
PAC	Pan Africanist Congress
PGRFA	Plant Genetic Resources for Food and Agriculture
PIC	Prior Informed Consent
R	South African monetary rand
SADC	Southern African Development Community
SADCC	Southern African Development Coordination Conference
South	The "developing" countries, mostly in the Southern Hemisphere, also known as the "Third World"
TNC	Transnational Corporation
UN	United Nations
UNCED	UN Conference on Environment and Development
UNCLOS	UN Convention on the Law of the Sea
UNCTAD	UN Conference on Trade and Development
UNCTC	UN Centre for Transnational Corporations
UNDP	UN Development Programme
UNESCO	UN Educational, Scientific and Cultural Organisation
UNEP	UN Environment Programme
UNFPA	UN Fund for Population Activities
UNSO	UN Sudano-Sahelian Office
WHO	World Health Organisation
WMO	World Meteorological Organisation

Chapter 1

INTRODUCTION

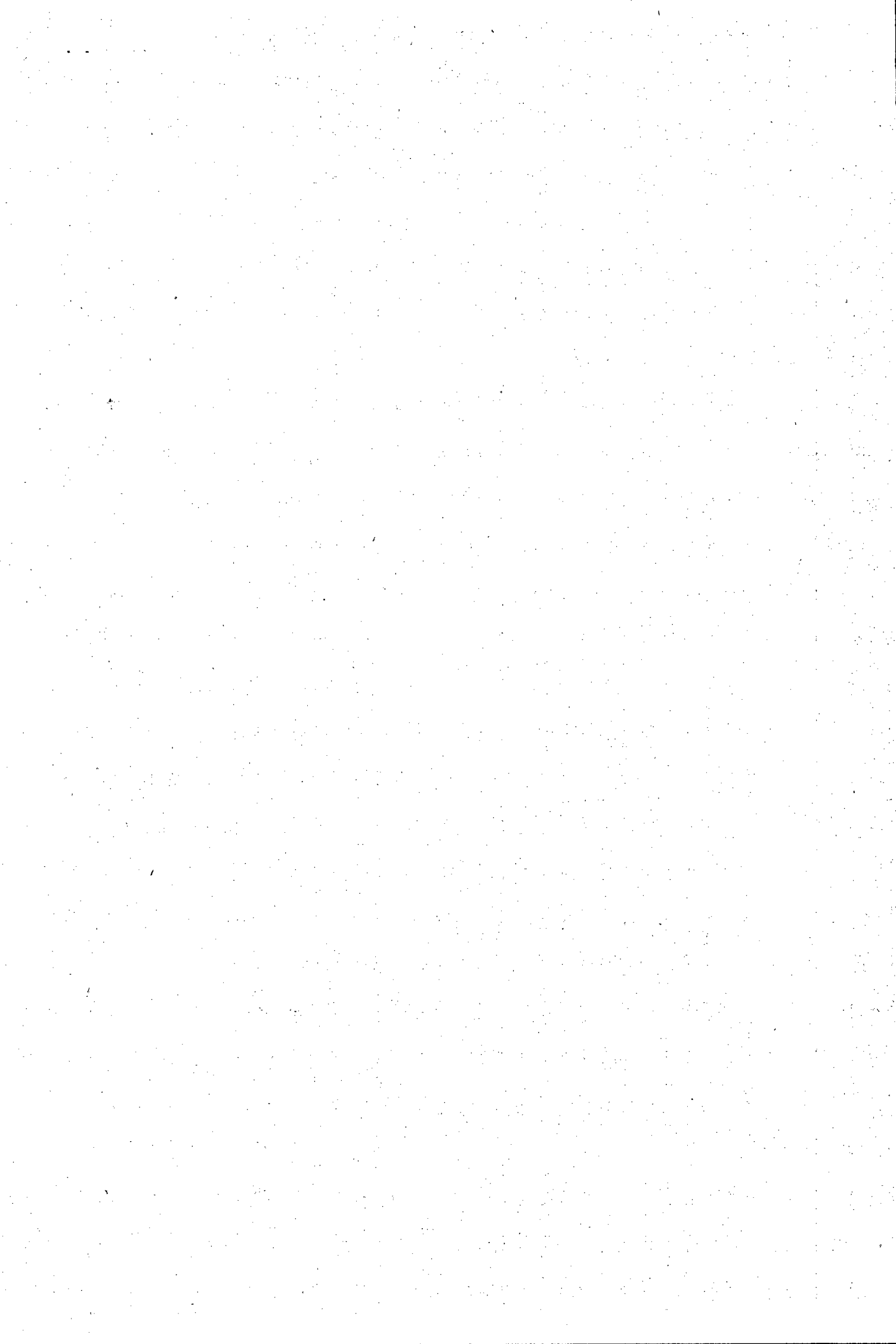


'As I was Saying in 1972...'



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Chapter 1

INTRODUCTION

In a collective bid to safeguard the Earth, almost 50 000 people gathered in Rio de Janeiro in June 1992 for what has been described as the inception of the "Environmental Revolution."¹ Among them were 103 heads of state,² 9 000 journalists,³ a range of governmental delegations and non-governmental organisations, indigenous peoples, women's groups, youth and children, trade unions, business and industry, academics, religious groups and concerned individuals.

Two events were central to this gathering: the chiefly governmental United Nations Conference on Environment and Development (UNCED) located at Riocentro, a convention centre 40 km outside Rio; and the non-governmental Global Forum which took place in the Parc de Flamengo in central Rio. Both events were extraordinary, although in very different ways. Achievements aside, UNCED represented the largest-ever assembly of world leaders and country delegations, with over 170 countries, 1 400 non-governmental organisations (NGOs) and 10 000 delegates participating in the process.⁴ The Global Forum was similarly unique as the largest-ever gathering of independent sectors,⁵ its broad representation of civil society attested to by the 450 000 visitors received.⁶ The 14-day Forum involved some 27 000 people, representing over 11 000 organisations and 165 countries.⁷ At nearly 1 000 meetings, participants

¹ See L. Brown [Executive Director of World Watch Institute], "Time is Running Out on the Planet", *Earth Summit Times*, 2 June 1992, p. 13.

² "UNCED has its Last Official Meeting", *Jornal do Brasil*, 14 June 1992, p. 4.

³ United Nations (hereafter cited as the UN), "Facts and Figures on UNCED", Earth Summit Press Release, Rio de Janeiro, 12 June 1992. For a review of media events see "Media", *Brundtland Bulletin*, no. 16 (July 1992), p. 18.

⁴ Centre For Our Common Future, "The Spirit of Rio: Earth Summit 1992", *Brundtland Bulletin*, no. 16 (July 1992), p. 3. See also Brown, "Time is Running Out on the Planet", p. 13.

⁵ G. da Cunha, "NGOs: They Go Where Laws Fear to Tread", *Earth Summit Times*, 1 June 1992, p. 2; G. Fraser, "Global Forum Opens Way to New Alliances", *Earth Summit Times*, 1 June 1992, p. 3.

⁶ S. Yolen, "The '92 Global Forum: 14 Incredible Days in June", *Brundtland Bulletin*, no. 16 (July 1992), p. 6.

⁷ C.G. Fraser, "Global Forum Draws 15 000 Rain or Shine", *Earth Summit Times*, 2 June 1992, p. 15; Yolen, "The '92 Global Forum: 14 Incredible Days in June", pp. 6-8.

vigorously discussed ways to promote sustainable development.⁸ The message, repeated over and over again was universal: real change is most likely to come from ordinary people.

1.1 BACKGROUND TO UNCED

UNCED and the Global Forum were thus remarkable events but should be seen as part of a long and ongoing process to protect the environment which has evolved over the past twenty years.⁹ Initiating the international process was the United Nations (UN) Conference on the Human Environment, held in Stockholm in 1972.¹⁰ At this Conference the UN Environment Programme (UNEP) was formed and an Action Plan was adopted in the form of recommendations for action to be taken by governments and international organisations.¹¹ Furthermore, a set of principles was endorsed for the ecologically sound management of the environment.¹²

One of the most successful outcomes of the Stockholm Conference was the increase in public awareness and understanding of the fragility of the environment.¹³

⁸ A review of the Global Forum can be found in Yolen, "The '92 Global Forum: 14 Incredible Days in June", pp. 6-8.

⁹ Reviews of this period can be found in B. Gosovic, *The Quest For World Environmental Cooperation* (London: Routledge, 1992), pp. 3-34; and C. Raghavan, "The Long March from Stockholm '72 to Rio '92", *Terra Viva*, 3 June 1992, pp. 8-9.

¹⁰ For reports of the Stockholm Conference and its preparatory meetings see R. Allen, "Can Stockholm Survive New York?", *The Ecologist* 2(10) (1972), pp. 4-9; and S. Johnson, "Stockholm 1972", *The Ecologist* 1(11) (1971), pp. 23-24. An entire issue - Volume 2(6), June 1972 - of *The Ecologist* is devoted to various critiques of the Stockholm Conference.

¹¹ A critique of the action plan can be found in Allen, "Can Stockholm Survive New York?", pp. 4-9; and E. Goldsmith "An Action Plan for the Human Environment", *The Ecologist* 2(6) (June 1972), p. 37. See also Gosovic, *The Quest For World Environmental Cooperation*, pp. 12-15; D. Runnalls, "Successes and Failures from Rio: Optimism must Guide us", *Earth Summit Times*, 15 June 1992, p. 6; and M. Strong, "From Stockholm to Rio: A Journey Down a Generation", in UN, *In Our Hands, Earth Summit '92: A Reference Booklet about the United Nations Conference on Environment and Development* (Switzerland: UN, 1991), pp. 16-17.

¹² The text of the Stockholm Declaration ("United Nations Declaration on the Human Environment: Principles") is reproduced in *The Ecologist* 2(10) (1972), pp. 10-11. See also Gosovic, *The Quest For World Environmental Cooperation*, pp. 12-15; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6; and Strong, "From Stockholm to Rio: A Journey Down a Generation", pp. 16-17.

¹³ M.R. Biswas & A.K. Biswas, "Environment and Sustained Development in the Third World: A Review of the Past Decade", *Third World Quarterly* 4(3) (July 1992), p. 485; F. di Castri, "From Stockholm to Rio de Janeiro: An Environmental Journey Through Time", *Biology International* (July 1991), p. 1; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6. See also interview with Lester Brown, "A Transition to a New Era?", *Terra Viva*, 3 June 1992, p. 10.

Following the conference, more than 100 countries set up environmental agencies and introduced environmental impact assessments, pollution control regulations and new legal arrangements.¹⁴ But despite these developments the health of the planet deteriorated at an unprecedented rate. Since 1972 forests have shrunk by nearly 200 million hectares, deserts have expanded by 120 million hectares, billions of tons of topsoil have been eroded, hundreds of species no longer exist and human numbers have grown by 1.6 billion.¹⁵ Since Stockholm, the concentration of greenhouse gases in the atmosphere has steadily increased and the stratospheric ozone layer has been depleted rapidly.¹⁶

There are several reasons for these retrogressive trends. Firstly, although the relationship between environment and development was recognised at Stockholm, little was done to give practical effect to the integration of environment and development in economic policy and decision-making.¹⁷ Thus, while the Stockholm Conference succeeded in placing environmental concerns on the political agenda, the environment still remained a marginal issue. Secondly, in virtually all governments the environment has been the preserve of politically weak and chronically underfunded agencies which have had limited influence on the processes creating environmental problems.¹⁸ Similarly UNEP, although party to some substantial achievements, has been consistently strapped for funds, pressurised by donor governments to steer away from the economic

¹⁴ Di Castri, "From Stockholm to Rio de Janeiro: An Environmental Journey Through Time", p. 1; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6; "A Transition to a New Era?", p. 10.

¹⁵ Brown, "Time is Running Out on the Planet", p. 13. See also Strong, "From Stockholm to Rio: A Journey Down a Generation", p. 17.

¹⁶ Ibid.

¹⁷ Di Castri, "From Stockholm to Rio de Janeiro: An Environmental Journey Through Time", pp. 1-2; A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 2; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6; B. Ward, "A Decade of Environmental Action", *Environment* 24(4) (May 1982), pp. 4-5.

¹⁸ Di Castri, "From Stockholm to Rio de Janeiro: An Environmental Journey Through Time", pp. 1-2; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6.

causes of environmental degradation, and marginalised in the international decision-making process.¹⁹

At the tenth anniversary of the Stockholm Conference held in Nairobi in 1982,²⁰ these frustrations were reflected in a decision by the UN to establish an independent commission outside the framework of UNEP.²¹ The mandate of the resulting World Commission on Environment and Development was to examine strategies and means by which the international community could deal more effectively with environmental concerns. Established under the chair of Gro Harlem Brundtland, Prime Minister of Norway, the so-called Brundtland Commission issued a report in 1987 entitled *Our Common Future*.²²

The conclusions reached by this report were stark: if current patterns of economic development are pursued there is no doubt that the future of humankind is at risk. The good news was that a solution to the crisis is available, in the form of sustainable development. While the concept of sustainable development has existed since the 1960s, the Brundtland Commission served to popularise the term.²³ Defined by the Commission as "meeting the needs of the present generations without compromising the ability of future generations to meet their own needs",²⁴ sustainable development was presented as a widely acceptable concept.

¹⁹ For further detail see, H.F. French, "After the Earth Summit: The Future of Environmental Governance", *Worldwatch Paper*, no. 107 (March 1992), p. 37; E. Goldsmith, "An Environment Programme - But for Whom and What?", *The Ecologist* 12(2) (March/April 1982), pp. 50-51; E. Goldsmith, "The Retreat from Stockholm", *The Ecologist* 12(3) (May/June 1982), pp. 98-100; Gosovic, *The Quest For World Environmental Cooperation*, pp. 21-28; Raghavan, "The Long March from Stockholm '72 to Rio '92", pp. 8-9; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6.

²⁰ The proceedings of the Nairobi conference are recorded in detail in *Mazingira* 6 (1982), Special Issue.

²¹ UN, General Assembly, Resolution 38/161, 1983. See also E. Fouere, "New Global Environment Commission", *Bulletin of the Atomic Scientists* (August/September 1984), pp. 32-34; and "World Commission Formed on Environment and Development", *Mazingira* 8(4) (1985), p. 3.

²² World Commission on Environment and Development (hereafter cited as the WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), 400 pp. For critiques of the WCED report see, Gosovic, *The Quest For World Environmental Cooperation*, pp. 30-31; L. Lohmann, "Whose Common Future?", *The Ecologist* 20(3) (May/June 1990), pp. 82-84; and T. Trainer, "A Rejection of the Brundtland Report", *IFDA Dossier*, no. 77 (May/June 1990).

²³ W.E. Rees, "The Ecology of Sustainable Development", *The Ecologist* 20(1) (January/February 1990), p. 18.

²⁴ WCED, *Our Common Future*, p. 8.

Responding to the report of the Brundtland Commission,²⁵ the UN General Assembly passed a Resolution in 1989 to hold a conference on environment and development in Rio de Janeiro on the 20th anniversary of Stockholm, to "elaborate strategies and measures to halt and reverse the environmental degradation of the planet".²⁶ Furthermore, it was decided that nations should be represented at the conference by their heads of state, thus making it the first ever "Earth Summit".²⁷

1.2 THIS DISSERTATION

1.2.1 Background

This dissertation has been written by a South African participant in the Global Forum who was present at the Rio meetings. The assignment arose out of a realisation by the author that few South Africans were attending the Rio Conferences, and that no comprehensive overview of the conferences was being prepared from a South African perspective. While the end-product was initially intended as an academic document only, sponsors of the project asked that it be transformed into a popular report for wide distribution. Accordingly, the popular report has been distributed to a range of government agencies, environment and development NGOs, trade unions, political parties, community-based organisations, academics, industrialists, business persons and concerned individuals. This dissertation represents the scholastic version of the popular report.

1.2.2 Aims of this Dissertation

This dissertation is based on the assumption that transition to a democratic South African society is imminent. Accompanying shifts in policy will place South Africa in

²⁵ *Our Common Future* called upon the UN General Assembly to convene an international conference "to review progress made and promote follow-up arrangements that will be needed over time to set benchmarks and to maintain human progress within the guidelines of human needs and natural laws". See WCED, *Our Common Future*, p. 343.

²⁶ UN, General Assembly, Resolution 44/228, 1989.

²⁷ This decision was taken by the UN General Assembly in 1990. See Strong, "From Stockholm to Rio: A Journey Down a Generation", p. 18.

an extremely strong position to pursue a course of sustainable development. Agenda 21, the UNCED plan of action for sustainable development, is an extremely valuable tool to guide this path but requires policy-makers and NGOs to be familiar with its proposals and other Rio agreements. This dissertation aims to condense and analyse the mass of legal text emanating from Rio and to place UNCED proposals within a South African context. While based on personal impressions it is intended to be as objective as possible and thus to be useful to an array of diverse sectors. Where appropriate, pointers are provided as to conspicuous gaps in present and proposed national policies. The focus is on solutions and on what we as South Africans can do to achieve sustainable development.

1.2.3 Scoping Methods

Several means were used to ensure that the author focused on issues pertinent to South Africa and that the author's impressions were valid.

Firstly, approximately 30 South African organisations were invited to a day-long pre-UNCED workshop organised by EcoProgramme in May 1992 and were asked to suggest issues on the UNCED agenda which they felt were relevant to South Africa. A list of issues and areas of interest was compiled and circulated to those South Africans attending the Rio Conferences. In Rio, these issues were checked against the programme of events at the Global Forum and at UNCED and relevant meetings were attended. A list of these issues is included in Annex 1.

Secondly, at a post-UNCED conference convened by Earthlife Africa in September 1992, a three-hour workshop was held to consider the implications of UNCED for southern Africa. Some 20 organisations attended this workshop.

Thirdly, draft chapters of this dissertation were circulated for comment to known experts in their respective fields.²⁸

²⁸ See "Acknowledgements" for a list of these persons.

Fourthly, telephonic interviews were conducted with local experts in relevant fields to obtain information and to verify or refute the author's impressions.²⁹

1.2.4 Information Sources

Information was gleaned from a number of sources, chief amongst these the three daily newspapers circulated at UNCED - the official *Earth Summit Times*,³⁰ the independent *Terra Viva*³¹ and the English edition of the Brazilian *Jornal do Brasil* - and a daily NGO news bulletin, the *Earth Summit Bulletin*.³² Diverse meetings at the Global Forum, and various press releases and information booklets distributed both during and after the Rio conferences yielded additional sources of information.

Several publications provided information concerning both the global and the South Africa environment and key references are listed in a selected bibliography at the end of this dissertation. Some readers might be tempted to take issue with the fact that the views of only certain South African political parties are mentioned. This is not because it is the author's intention to exclude other parties, but was simply the result of relevant information and policy statements not being readily available. Thus, while the Pan Africanist Congress (PAC), Inkatha Freedom Party (IFP), African National Congress (ANC) and present government have all issued environmental policies, only the latter two are supported by comprehensive documents which cover the breadth of issues discussed at Rio.

1.2.5 Dissertation Structure

Chapter 1 of this dissertation outlines the context of UNCED; the background, aims, methods and structure of this dissertation; the UNCED process and players; and the broad outcomes of the meetings held in Rio de Janeiro in June 1992. It further

²⁹ Ibid.

³⁰ Published by Theodore W. Kheel and Katsuhiko Yazaki with the Kyoto Forum and EcoFund '92, in cooperation with *The New York Times Fax* and *Jornal do Brasil*.

³¹ Published by Roberto Savio, IPS Inter Press Service.

³² Published by Island Press and the International Institute for Sustainable Development.

describes South African participation at UNCED and the Global Forum. The principles underpinning the Rio Declaration, intended to inform and guide all other UNCED documents, are outlined in Chapter 2. Eight themes underlying the 40 chapters of Agenda 21 are described in Chapters 3-10 of this dissertation. Each chapter is placed within both a global and South African context. Agenda 21 proposals are inserted as "Boxes" in the text and, where necessary, an appraisal of the Agenda 21 proposals is included. A section on the implications for South Africa concludes each chapter.

Socio-economic concerns are detailed in Chapters 3, 4 and 5. Chapter 3 examines trade systems and the integration of development and environment in decision-making. Agenda 21 proposals regarding population, poverty, health and consumption are summarised in Chapter 4. Chapter 5 describes problems of urbanisation. Chapters 6, 7 and 8 summarise Agenda 21 proposals for the conservation and management of resources. Chapter 6 deals with land degradation, agriculture, freshwater resources, desertification, drought and deforestation. Included in this chapter is the UNCED statement of principles for forests. The protection of oceans, coastal environments and marine resources is examined in Chapter 7. Chapter 8 details Agenda 21 strategies for the management of chemicals and waste. People participation and responsibility form the basis of Chapter 9, which examines the role of major groups. Finally, Chapter 10 describes the legal, institutional, technological and financial machinery necessary to implement Agenda 21.

The two conventions signed at Rio - the Climate Convention and the Biodiversity Convention - are detailed in Chapters 11 and 12 respectively. These chapters include relevant sections of Agenda 21 (eg atmosphere, biodiversity and biotechnology) and follow a similar structure to those which describe Agenda 21. Chapter 13 concludes this dissertation and provides a summary of each chapter. A glossary of terms is listed at the beginning of the dissertation; a selected bibliography containing key reference sources can be found at the back. The following section describes the mechanics of a UN conference, chief debates, agreements and players at UNCED as well as the position of South Africa through the UNCED process.

1.3 THE MECHANICS OF A UN CONFERENCE

1.3.1 International Law

To date, international environmental law has forged a substantial mass of treaties and agreements. Treaties, referred to as "hard law" instruments, are written agreements between states which form a direct means of creating specific rights and duties for states. Once agreed to and ratified by a set number of states, treaties constitute legally-binding agreements.³³ How they are effected by countries mostly depends upon the constitutional law for each state. In South Africa, courts cannot take the conditions of international treaties directly into account since they must first be enacted in national legislation. Thus, an Act of Parliament is necessary to give local effect to treaties.³⁴ At Rio, two treaties were signed which had been negotiated parallel to but independent of the UNCED process. All other agreements reached at Rio are constituted as "soft law". These are non-binding agreements which act to gradually change political thinking on issues. Standards are often vague and much discretion is left to individual states. Often, an attitude is created which eventually enables binding hard law to be instituted.³⁵

Given the urgency of global problems, existing legal methods to deal with these issues are generally laboriously slow and inadequate.³⁶ For example, a new international committee needs to be created virtually every time a major treaty is up for discussion.³⁷ Further hampering the process is the UN custom of unanimous consent - impelling negotiations for both treaties and other agreements to proceed at the pace

³³ See French, "After the Earth Summit: The Future of Environmental Governance", pp. 22-28; and G. Palmer, "Towards a New Oceans World Order", address to Oceans Day at the Global Forum, Rio de Janeiro, 8 June 1992.

³⁴ D.J. Devine & M.G. Erasmus, "International Environmental Law", in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 156.

³⁵ French, "After the Earth Summit: The Future of Environmental Governance", p. 23; Palmer, "Towards a New Oceans World Order".

³⁶ See French, "After the Earth Summit: The Future of Environmental Governance", pp. 22-28, 47; and Palmer, "Towards a New Oceans World Order".

³⁷ French, "After the Earth Summit: The Future of Environmental Governance", p. 31.

dictated by the most reluctant movers.³⁸ Agreements are thus forged at the lowest common denominator and are consequently often ineffectual.³⁹ Moreover, existing environmental treaties rarely include effective means of ensuring that nations stand by their commitments.⁴⁰ Even where intentions are honourable, poorer nations often find it technically or financially impossible to comply with treaties and other agreements.⁴¹ These factors are important to bear in mind when assessing the potential effectiveness of the Rio agreements.

1.3.2 Preparing for UNCED

Preparations for UNCED followed standard UN procedure. A Preparatory Committee was established to recommend the programmes and actions required to meet the goals of UNCED. Over a period of two and a half years, four meetings or "PrepComs" were scheduled to formulate documents and negotiate issues.⁴² Several diverse inputs informed this process. Firstly, all five UN Regional Economic Commissions held meetings to devise plans for sustainable development in their regions.⁴³ In addition, over 100 countries submitted national reports to UNCED on the

³⁸ This problem is discussed in G.H. Brundtland, "Pace is Dictated by the Slowest Wheel", *Earth Summit Times*, 12 June 1992, p. 6; and A. Jayasekera, "Life in a 'Rio Jungle'", *Terra Viva*, 4 June 1992, p. 11.

³⁹ French, "After the Earth Summit: The Future of Environmental Governance", pp. 22-23; Palmer, "Towards a New Oceans World Order"; "NGOs to Analyse the 'Gaps' Left by UNCED", Press Release no. 91, Global Forum, Rio de Janeiro, 4 June 1992.

⁴⁰ See French, "After the Earth Summit: The Future of Environmental Governance", pp. 28-31; Palmer, "Towards a New Oceans World Order"; and J.R.G. Stanley, "Treaty Compliance Can't Be Enforced", *Earth Summit Times*, 9 June 1992, p. 6.

⁴¹ See French, "After the Earth Summit: The Future of Environmental Governance", p. 31; and Stanley, "Treaty Compliance Can't Be Enforced", p. 6.

⁴² For summaries of these meetings see J. Bernstein, P. Chasek & L.J. Goree VI, "PrepCom IV: The Final Stop on the Road to Rio", *Network '92*, no. 16 (April 1992), pp. 1-2, 10; Centre For Our Common Future, "NGOs Involved in PrepCom II", *Network '92*, no. 6 (April 1991), p. 1; Centre For Our Common Future, "PrepCom II at a Glance", *Network '92*, no. 6 (April 1991), p. 4; Centre For Our Common Future, "PrepCom III Ends, Next is New York", *Network '92*, no. 10 (September 1991), pp. 1, 10; Centre For Our Common Future, "Blow-by-Blow Summary of PrepCom III", *Network '92*, no. 10 (September 1991), p. 4; Centre For Our Common Future, "Guarded Optimism as PrepCom IV Continues", *Network '92*, no. 15 (March 1992), pp. 1-2; Harkavy, *The Earth Summit...*, pp. 2-4, 10; C. Raghavan, "Overview of Decisions Reached at PrepCom 3", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 7-9; and UN, "The '92 Process: The United Nations Prepares for the Earth Summit", *Earth Summit in Focus*, no. 1 (1991), pp. 7-8.

⁴³ See UN, "The '92 Process: The United Nations Prepares for the Earth Summit", pp. 1-2.

state of sustainable development activities.⁴⁴ Further input into UNCED and the PrepComs was obtained from a series of independent sector activities, including:⁴⁵

- The International Conference on an Agenda for Science, Environment and Development (Ascend 21) organised by the International Council of Scientific Unions and the Third World Academy of Sciences;⁴⁶
- The UNEP/World Meteorological Organisation (WMO) Intergovernmental Panel on Climate Change;⁴⁷
- The Intergovernmental Negotiating Committee for a Convention on Biological Diversity;⁴⁸
- The World Women's Congress for a Healthy Planet;⁴⁹
- The World Youth Preparatory Forum for UNCED;⁵⁰
- The UN Conference on Sustainable Agriculture and Rural Development;⁵¹
- The Second World Industry Conference on Environmental Management;⁵²
- The 15th World Congress of the International Confederation of Free Trade Unions;⁵³

⁴⁴ Ibid. See also, Centre For Our Common Future, "World Prepares National Reports", *Network '92*, no. 4 (February 1991), pp. 1, 4; and UN, *Nations of the Earth Report*, 2 vols (Geneva, 1992).

⁴⁵ See also UN, "The '92 Process: The United Nations Prepares for the Earth Summit", pp. 3-4.

⁴⁶ International Council of Scientific Unions & Third World Academy of Sciences, "Conference Statement: International Conference on an Agenda of Science for Environment and Development into the 21st Century" (Vienna, 25-29 November 1991).

⁴⁷ Intergovernmental Panel on Climate Change, *The IPCC First Assessment* (Geneva: WMO/UNEP, 1990). See Chapter 11 of this dissertation for further detail.

⁴⁸ See Chapter 12 of this dissertation for further detail.

⁴⁹ Women's Environment and Development Organisation, "World Women's Congress for a Healthy Planet November 8-12, 1991: Women's Action Agenda '21" (Miami, 1991). The recommendations of the Congress to the UN are summarised in J. Cock, "World Women's Congress for a Healthy Planet", *New Ground*, no. 7 (Autumn 1992), pp. 29-30. See also Chapter 9 of this dissertation.

⁵⁰ See Centre For Our Common Future, "Youth Forum", *Network '92*, no. 6 (April 1991), p. 9; Centre for Our Common Future, "Youth has its Say", no. 17 (May 1992), p. 4; and Centre For Our Common Future, "World Youth Forum, San Jose, Costa Rica: Youth Stress Harmony Between North and South", *Brundtland Bulletin*, no. 16 (July 1992), p. SF1. See also Chapter 9 of this dissertation.

⁵¹ Food and Agricultural Organisation (FAO), *The Den Bosch Declaration and Agenda for Action on Sustainable Agriculture and Rural Development*, Report of the FAO/Netherlands Conference on Agriculture and the Environment, 's-Hertogenbosch, The Netherlands, 15-19 April 1991 (Rome: FAO, 1991). See also Chapter 6 of this dissertation.

⁵² See Centre For Our Common Future, "Industry Prepares for UNCED: WICEM II Held in Rotterdam", *Network '92*, no. 6 (April 1991), p. 15. See also Chapter 9 of this dissertation.

⁵³ International Confederation of Free Trade Unions, *Environment and Development: The Trade Union Agenda*, ICTFU 15th World Congress (Brussels, 1992), 57 pp. The World Congress also adopted a resolution calling on governments to act upon the report's recommendations. See also Chapter 9 of this dissertation.

- The Non-Governmental Conference "Roots for the Future";⁵⁴
- The World Conference of Indigenous Peoples on Territory, Environment and Development;⁵⁵
- The 87th Inter-Parliamentary Conference;⁵⁶
- The Second Ministerial Conference of Developing Countries on Environment and Development;⁵⁷ and
- The Reconvened World Commission on Environment and Development.⁵⁸

1.4 THE PLAYERS ⁵⁹

The above list indicates the variety of actors in the UNCED process. Chief amongst these were a diverse mix of NGOs which played a major role in assisting governments to compile national reports and in lobbying governments throughout the UNCED process. The most influential issue underpinning UNCED was the disparity between North and South and governments were accordingly split into two blocs throughout negotiations. Although the North is largely comprised of the 24 nations of the Organisation of Economic Cooperation and Development (OECD), for the most part they splintered into different groups and individual actors, often isolating the United

⁵⁴ *Agenda ya Wananchi: Citizen's Action Plan for the 1990s*, Roots for the Future Conference, Paris (1991). Reports of the conference can be found in E. Koch, "Children of the Soil", *New Ground*, no. 7 (Autumn 1992), pp. 31-32; and "NGO Conference Held in Paris", *Network '92*, no. 13 (January 1992). See also Chapter 9 of this dissertation.

⁵⁵ See S. Kottary, "Indigenous People Sign Rights Charter", *Earth Summit Times*, 1 June 1992, p. 15. See also Chapter 9 of this dissertation.

⁵⁶ *Environment and Development: The Views of Parliamentarians on the Main Directions of the United Nations Conference on Environment and Development and its Prospects* (C-V/92/2-DR.1), 87th Inter-Parliamentary Conference (Yaounde, 6-11 April 1992).

⁵⁷ The Kuala Lumpur Declaration on Environment and Development arose from the Second Ministerial Conference of Developing Countries on Environment and Development (April 26-29 1992) and reaffirms the view of developing countries that a new global partnership must take into account "the main responsibility of developed countries for the deterioration of the environment and the need for sustained economic growth in developing countries". For further details see D.R. Abbasi, "Developing Nations Firm on Funding", *Earth Summit Times*, 13 May 1992, p. 5; Centre for Our Common Future, *Network '92*, no. 17 (May 1992), p. 5; and Centre for Our Common Future, *Brundtland Bulletin*, no. 16 (July 1992), p. 35.

⁵⁸ Reconvened WCED, *Our Common Future*, London, 22-24 April 1992 (Geneva: Centre for Our Common Future, 1992), 32 pp. See also Centre For Our Common Future, "World Commission Reconvenes", *Network '92*, no. 16 (April 1992), pp. 1-2.

⁵⁹ Further detail can be found in S. Federovisky, "Summit Demonstrates the Crisis of Blocs", *Terra Viva*, 10 June 1992, p. 5; M. McCoy, "Who are the Players in this Global Theatre?", *Earth Summit Times*, 13 May 1992, p. 4; and F. Pearce, "How Green was our Summit?", *New Scientist*, 27 July 1992, p. 12.

States. The countries of the South, on the other hand, formed a cohesive lobbying group under the "G77", a term used to describe the grouping of 145 developing countries. Heading the conference was Maurice Strong, secretary-general of UNCED and past secretary-general of the Stockholm Conference.

1.5 WHAT WAS UNCED ABOUT?

UNCED was allegedly about initiating the actions necessary to protect the global environment and to effect sustainable development.⁶⁰ However, as at Stockholm, a deep schism between North and South undermined attempts to address the requirements for sustainability.⁶¹ Thus, instead of collectively discussing ways to anticipate and resolve problems, old arguments concerning technology transfer, terms of trade and financial assistance dominated the debate and revealed how little had been resolved since Stockholm. Equally disheartening was the expansion of environmental problems since Stockholm.⁶² For while Stockholm's concerns were locally focused, highlighting air and water pollution, Rio's agenda was far more complex and urgent,⁶³ embracing global environmental threats such as climate change and the need to protect the oceans, the forests and the Earth's remaining species; socio-economic concerns such as poverty, urbanisation, consumption and population; as well as resource management problems including freshwater pollution and scarcity, land degradation, desertification, drought, deforestation, toxic chemicals and waste.

⁶⁰ UN, General Assembly, Resolution 44/228, 1989. For an overview, see Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6. See also UNCED Secretary-General Maurice Strong's opening address at the Earth Summit, in "Strong Starts Delegates on a Journey to Save the World", *Earth Summit Times*, 4 June 1992, pp. 6-7.

⁶¹ An excellent summary of the North-South debate at UNCED can be found in F. Pearce, "No Southern Comfort at Rio?", *New Scientist*, 16 May 1992, pp. 38-41. See also M. Khor, "The North-South Battles that Dominate Earth Summit", *Earth Summit Briefings*, no. 1 (1992).

⁶² See Brown, "Time is Running Out on the Planet", p. 13; and Strong, "From Stockholm to Rio: A Journey Down a Generation", p. 17.

⁶³ See Brown, "Time is Running Out on the Planet", p. 13; Goldsmith, "The Retreat from Stockholm", pp. 98-100; Gosovic, *The Quest For World Environmental Cooperation*, p. 29; P.S. Thacher, "GOs Need NGO Talent", *Earth Summit Times*, 15 June 1992, p. 13.

1.6 WHAT DID RIO ACHIEVE?

Given this ambitious agenda, it should not be surprising that UNCED failed to achieve all that it set out to. Consequently, there were several bitter disappointments which are described in detail in this dissertation. But there were also some remarkable successes at both the Earth Summit and the Global Forum which were largely overlooked by the popular news media.

First, a set of agreements was forged between governments imploring countries to chart a more sustainable course.⁶⁴ Second, securing political commitment for these agreements legitimised the connections between environment and development,⁶⁵ placing the notion of sustainability firmly upon the international diplomatic agenda. Indeed, the task of preparing for UNCED evidently compelled many governments to create novel mechanisms for communication between economic and environmental departments.⁶⁶ Third, the Rio Conferences succeeded in establishing broad intellectual consensus on what needs to be done to reverse environmental degradation and improve the livelihoods of poor people.⁶⁷ Increasing recognition was given to the mutual dependencies between North and South and a fundamental change in approach to the environment was highlighted: the causes of decay are now seen to be more significant than the effects.⁶⁸ Fourth, an enormous increase in public awareness was stimulated through extensive media coverage of the issues.⁶⁹ Fifth, new pathways were opened for public participation in intergovernmental negotiations, allowing for increased cooperation and communication between governmental and non-governmental

⁶⁴ See N. Desai [Deputy Secretary-General of UNCED], "The Outcome of Rio", *Network '92*, no. 18 (June/July 1992), pp. 1, 18-19; S. Ramphal, "The Only War We Can Afford", *Terra Viva*, 6 June 1992, p. 7.

⁶⁵ See Centre For Our Common Future, "The Spirit of Rio: Earth Summit 1992", p. 4; Desai, "The Outcome of Rio", p. 1; M. Khor, "What to Do, Now it's Over", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 4; and S. Ramphal, "The First Step was not Small, but Long Journey is Ahead", *Earth Summit Times*, 15 June 1992, p. 6.

⁶⁶ See Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6.

⁶⁷ See Brown, "Time is Running Out on the Planet", p. 13.

⁶⁸ Ibid.

⁶⁹ See "A Transition to a New Era?", p. 10. See also Centre For Our Common Future, "The Spirit of Rio: Earth Summit 1992", p. 4; Desai, "The Outcome of Rio", p. 1; Ramphal, "The First Step was not Small, but Long Journey is Ahead", p. 6; and Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6.

organisations.⁷⁰ Finally, the networks and agreements established between NGOs would in themselves warrant calling Rio a success.⁷¹

The official agreements consist of five parts, each of which is discussed in detail in this dissertation:

- The Rio Declaration on Environment and Development⁷²
- Agenda 21⁷³
- A Declaration of Principles on Forests⁷⁴
- The Framework Convention on Climate Change⁷⁵
- The Convention on Biological Diversity⁷⁶

1.7 UNCED AND SOUTH AFRICA

1.7.1 *Classifying South Africa*

Because of the disparities between industrialised and developing countries, much of the UNCED documentation proposes actions for countries according to capabilities and priorities. For South Africa, the question is whether we classify ourselves as a developed or developing country. Certainly, per capita Gross National Product (GNP)

⁷⁰ See Desai, "The Outcome of Rio", p. 1; Harkavy, *The Earth Summit...*, p. 2; Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6; R. Sharma, "Whither the Road from Rio?", *Ecoforum* 16(2), p. 1; and P.S. Thacher, "Think Globally, Act Locally", *Earth Summit Times*, 1 June 1992, p. 7; Thacher, "GOs Need NGO Talent", *Earth Summit Times*, 15 June 1992, p. 13.

⁷¹ See Desai, "The Outcome of Rio", p. 19; T. Drago, "The Time has Come to Think About Tomorrow", *Terra Viva*, 12 June 1992, p. 6; R. Levins, "Blossoming NGOs Offer Hope", *Earth Summit Times*, 1 June 1992, p. 12; and Runnalls, "Successes and Failures from Rio: Optimism must Guide us", p. 6.

⁷² See Chapter 2 of this dissertation.

⁷³ See Chapters 3 to 10 of this dissertation.

⁷⁴ See Chapter 6 of this dissertation.

⁷⁵ See Chapter 11 of this dissertation.

⁷⁶ See Chapter 12 of this dissertation.

places us as a developing nation:⁷⁷ so do our priorities; alleviating poverty, creating employment and ensuring a decent quality of life for all. But many of our concerns are also those typically associated with industrialised countries: severe air pollution, overconsumption by the affluent and problems of waste disposal to mention a few.

For the purposes of this dissertation, South Africa is classified as a developing nation. This can be justified for the following reasons. First, recent developments indicate that the government is negotiating with trade partners and economic blocs for its status to be changed from "developed" to "developing", a move strongly supported by the ANC.⁷⁸ Second, broad international consensus exists that a developing nation status is appropriate for South Africa - the World Bank for instance classifies South Africa as a "non-oil" developing country.⁷⁹ Finally, countries such as Brazil and India comprising a similar mix of developed/developing conditions form part of the G77 and are classified as developing nations.

1.7.2 Participation at UNCED and the Global Forum

The South African government, lacking participatory status at the UN, was not officially represented at either UNCED or its preparatory meetings. South Africa was, however, invited to attend the conference as an observer⁸⁰ and was asked to submit a report on the country's development trends and environmental situation. The 250-page official government-sponsored report entitled *Building the Foundation for Sustainable Development in South Africa*⁸¹ details the technicalities of a number of environmental concerns in the country. Its weakness, partly dictated by time constraints, lies in its inadequate analysis of economic and developmental concerns in South Africa and

⁷⁷ According to the World Resources Institute, South Africa had a per capita income of \$1 870 in 1987. See World Resources Institute, *World Resources 1990-91* (Oxford: Oxford University Press, 1990). According to the Council for Scientific and Industrial Research, South Africa had a per capita income of \$2 470 in 1989. See Department of Environment Affairs (hereafter cited as DEA), *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), p. 8.

⁷⁸ See R. Rumney, "Welcome to the Third World, SA", *Weekly Mail*, 23-29 October 1992.

⁷⁹ Republic of South Africa, Board of Trade and Industry, *Manual on the Policy and Procedure Relative to Customs Tariff Protection and Tariff Relief* (Pretoria, 1988), p. 3.

⁸⁰ See C. Smith, "Dithering, Bickering Politicians keep SA from Rio Summit", *Sunday Times*, June 7 1992, p. 13; and "SA's Environment Officials to Attend Summit in Private", *Business Day*, 4 June 1992, p. 5.

⁸¹ DEA, *Building the Foundation for Sustainable Development in South Africa*, 268 pp.

consequent failure to integrate environmental and developmental issues. Whether the report can form the foundation for drawing up national sustainable development strategies, as intended by the UNCED secretariat,⁸² is thus questionable.

With no South African government representation at UNCED to lobby or collaborate with, South African NGO involvement in the UNCED process was minimal.⁸³ This was unfortunate given the enormous benefits which NGOs from other countries gleaned from cooperating with their governments, networking with one another and learning the language of international negotiations. Aside from UNCED, South Africans could have gained a tremendous amount by acquiring a greater understanding of global environment and development issues, thus allowing local concerns to be more effectively integrated into a regional perspective.

Nonetheless, a contingent of approximately 20 South Africans - including extraparlimentary political groups, youth and religion representatives, environment and development NGOs, journalists and industrialists - attended UNCED and the Global Forum. At the Global Forum, southern African NGOs ran an exhibition booth and an information event was held where representatives from a number of African countries spoke. Additionally, South African industrialists from the Industrial Environmental Forum gave presentations at an event hosted by the International Network for Environmental Management.⁸⁴ South African business was also represented by a local businessman who is a member of the Business Council for Sustainable Development. The ANC, accorded observer status at the Earth Summit, delivered a speech at one of the plenary sessions endorsing the main principles and guidelines of Agenda 21.⁸⁵ Also represented at UNCED was the PAC which presented its energy policy.⁸⁶

⁸² See UN, "Suggested Guidelines for the Preparation of National Reports" (A/CONF.151/PC8 and Add. 1), 1990. See also Centre For Our Common Future, "World Prepares National Reports", pp. 1, 4. How the national reports should be used post-UNCED is reviewed in Centre For Our Common Future, "National Reports: The Next Step", *Network '92*, no. 17 (May 1992), pp. 1, 10.

⁸³ For a discussion of South African NGO attendance at Rio see J. Yeld, "SA Enviro-Boycott?", *Argus*, 20 June 1992.

⁸⁴ 1992 International Industry Conference for Sustainable Development, Rio de Janeiro, 2-5 June 1992.

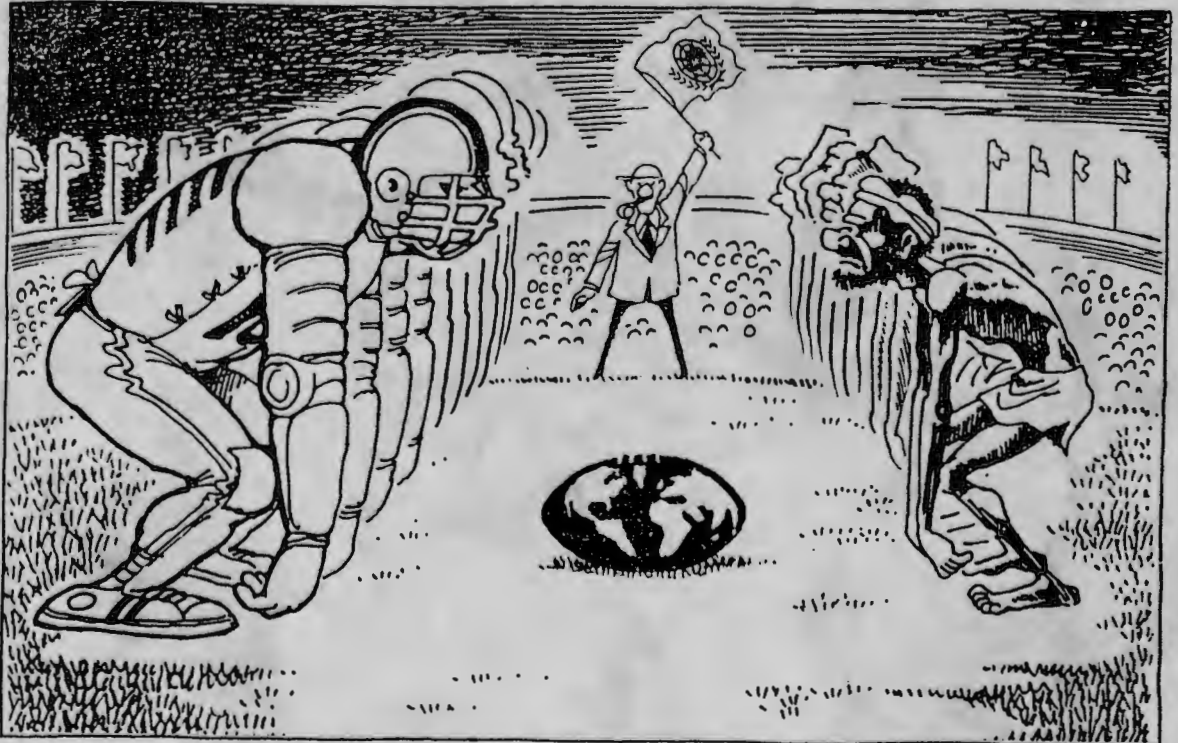
⁸⁵ See S.S. Sangweni, "Statement of the African National Congress to UNCED", Rio de Janeiro, 10 June 1992.

⁸⁶ See Pan Africanist Congress of Azania (South Africa), "The Energy Policy" (E/P/1992) (1992), pp. 1-6.

This concludes Chapter 1 which has set this dissertation in context and has provided background information to the Rio Conferences. The chapter that follows will examine the Rio Declaration on Environment and Development. □

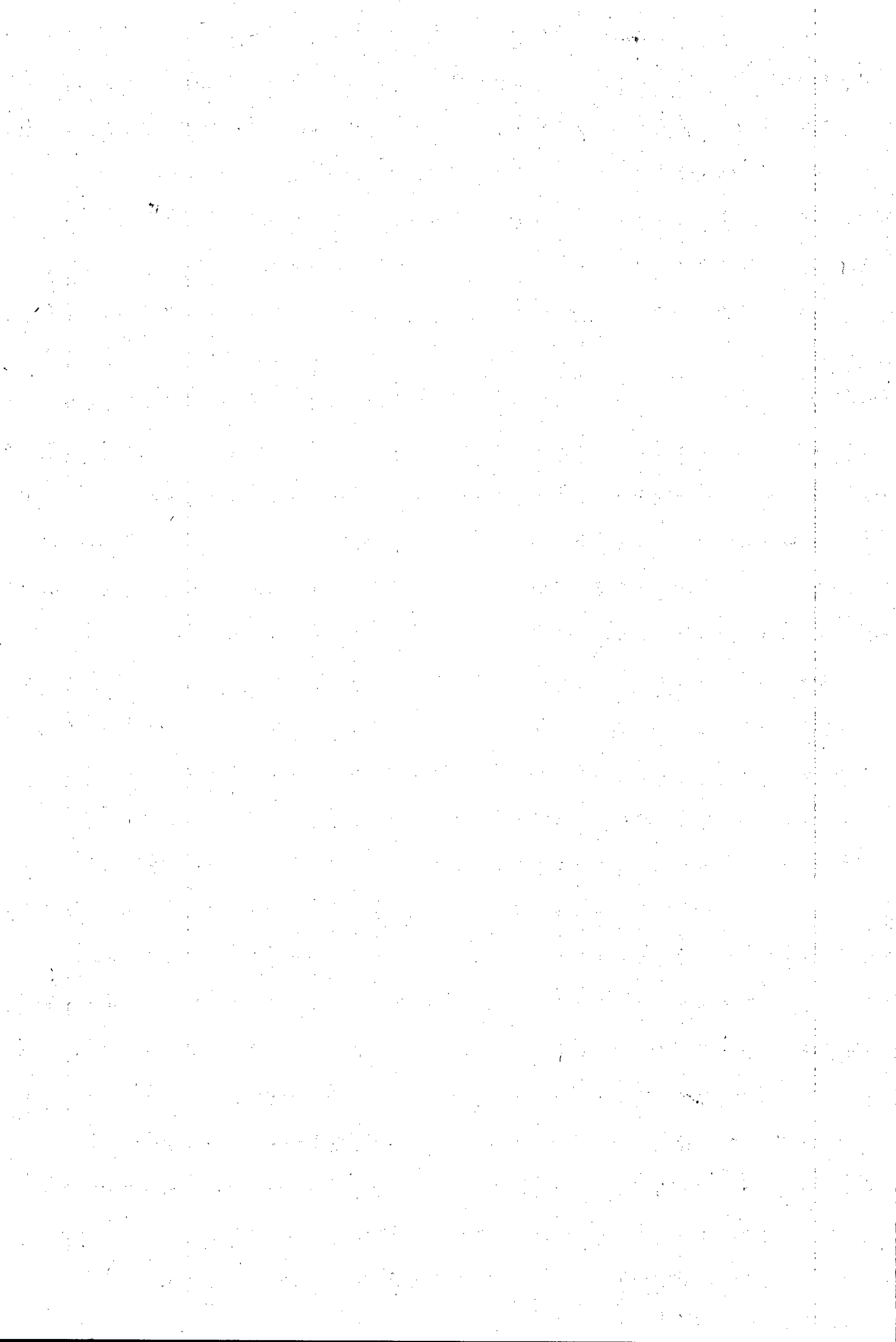
Chapter 2

THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT



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Chapter 2

THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

2.1 BACKGROUND

In 1972, the United Nations Conference on the Human Environment adopted a set of principles, known as the Stockholm Declaration,¹ for the ecologically sound management of the environment. The significance of this Declaration was two-fold. Firstly, it represented the first step towards international environmental legislation;² secondly, it witnessed the beginning of a dialogue towards a common approach between industrialised and developing countries concerning environmental and related socio-economic problems.³

Twenty six principles were embodied in the non-binding Declaration. Its intention was to be inspirational, stimulating public awareness and community participation to protect the environment.⁴ In the twenty years since Stockholm, these aims have mostly been achieved and yet these same years have seen a rapid deterioration in the environment and its ability to sustain life.⁵ This degeneration has largely resulted from a lack of real commitment by states to change economic development patterns.⁶

Strengthening the relationship between environmental protection and appropriate

¹ The text of the Stockholm Declaration ("United Nations Declaration on the Human Environment: Principles") is reproduced in *The Ecologist* 2(10) (1972), pp. 10-11. Critiques of the Stockholm Declaration can be found in R. Allen, "Can Stockholm Survive New York?", *The Ecologist* 2(10) (1972), pp. 8-9; and B. Gosovic, *The Quest For World Environmental Cooperation* (London: Routledge, 1992), pp. 12-13.

² See Allen, "Can Stockholm Survive New York?", p. 8; and C.Y. Ling, "Unequal Negotiations in an Unequal World", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 7.

³ See Allen, "Can Stockholm Survive New York?", p. 8.

⁴ S. Johnson, "Stockholm 1972", *The Ecologist* 1(11) (1971), p. 24.

⁵ See for example, D.H. Meadows, D.L. Meadows & J. Randers, *Beyond the Limits* (London: Earthscan, 1992); United Nations (hereafter cited as the UN), "Rio Declaration on Environment and Development", in *Earth Summit Press Summaries* (New York, 1992), p. 6; and UN Educational, Scientific and Cultural Organisation (hereafter cited as UNESCO), "From Stockholm to Rio: The Problems Have Become Global", interview with Francesco di Castri, UNESCO Co-ordinator for the Environment, 1992.

⁶ See Gosovic, *The Quest For World Environmental Cooperation*, pp. and 28-29; UN, "Rio Declaration on Environment and Development", p. 6.

economic development, whilst building on the Stockholm Declaration, was thus one of the priorities when the UN Conference on Environment and Development was first conceived.⁷ The envisaged outcome was an Earth Charter which, as an ethical backbone to UNCED, was to embody rights and obligations of all nations in relation to the environment. As the environmental equivalent of the UN Declaration on Human Rights, it was intended to provide fundamental principles to guide UNCED documents and follow-up activities.⁸ The transformation of the Earth Charter to the Rio Declaration on Environment and Development arose largely because of conflicting visions between developing and developed countries in the preparatory meetings to UNCED.⁹ The final document¹⁰ contains twenty-seven norms for state and interstate behaviour and is reproduced in full in Annex 2.

2.2 APPRAISAL OF THE DECLARATION

Of all texts adopted at UNCED, the Rio Declaration is regarded as the most delicately balanced; between environment and development, and between the priorities of North and South.¹¹ This compromise has resulted in a document which fails to guide the relationship of humankind with the earth, and consequently lacks real vision.¹²

⁷ See Centre for Our Common Future, "Preparing an Earth Charter", *Network '92*, no. 7 (June 1991), p. 1; Ling, "Unequal Negotiations in an Unequal World", p. 7; UN, "The '92 Process: The United Nations Prepares for the Earth Summit", *Earth Summit in Focus*, no. 1 (September 1991), pp. 5-6; and UN, "Rio Declaration on Environment and Development", p. 6.

⁸ See Centre for Our Common Future, "Preparing an Earth Charter", p. 1; and A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 24.

⁹ For further details, see J. Bernstein, P. Chasek & L.J. Goree VI, "PrepCom IV: The Final Stop on the Road to Rio", *Network '92*, no. 16 (April 1992), p. 10; Harkavy, *The Earth Summit...*, pp. 22-24; M. Khor, "The North-South Battles that Dominate Earth Summit", *Earth Summit Briefings*, no. 1 (1992); M. McCoy, "PrepCom III: Earth Charter and Agenda 21 emerge", *Development Forum* (1991); and M. Valentine, "PrepCom 4: The Road to Rio is Paved with Good Intentions", *Earth Island Journal* (June 1992), p. 3.

¹⁰ UN Doc. A/CONF.151/5/Rev.1.

¹¹ See Centre for Our Common Future, "The Rio Results", *Brundtland Bulletin*, no. 16 (July 1992), p. 4; M. Khor & C. Raghavan, "Prepcom IV Ends in Agreement on Draft Rio Declaration but Other Key Issues Remain Deadlocked", *Third World Economics*, no. 39 (16-30 April 1992), pp. 2-3; and "A Summary of the Proceedings of the UN Conference on Environment and Development 3-14 June 1992", *Earth Summit Bulletin* 2(13) (16 June 1992), p. 9.

¹² P. Chatterjee, "Earth Summit 'Seriously Devoid of Vision'", *New Scientist*, 11 April 1992, p. 6; Friends of the Earth International, "Raw Deal for the Earth", Press Release, Rio de Janeiro, 12 June 1992; J. Vidal & P. Chatterjee, "All the Difference in the World", *Guardian*, Environment Supplement, 10 April 1992, p. 31; World Wide Fund For Nature (hereafter cited as WWF), "PrepCom Update no. 4", 2 April 1992; "NGOs to Analyse the 'Gaps' Left by UNCED", Press Release no. 91, Global Forum, Rio de Janeiro, 4 June 1992.

Instead, the Rio Declaration placates some of the current disputes between rich and poor. It recognises the "right to development"¹³ of the poor and the duty of the rich to alleviate poverty.¹⁴ Other key principles include:

- recognition of the special needs of developing countries;¹⁵
- promotion of a supportive and open international economic system;¹⁶
- recognition of the "common but differentiated responsibilities" of states;¹⁷
- the eradication of poverty as an indispensable component for sustainable development;¹⁸ and
- recognition that humans are at the centre of concerns for sustainable development.¹⁹

The Declaration commits states to:

- "reduce and eliminate unsustainable patterns of production and consumption";²⁰
- adopt the "precautionary approach" by preventing environmental degradation, even before comprehensive scientific proof is available;²¹
- promote the internalisation of environmental costs and the "polluter pays" principle;²²
- uphold the rights of women, youth and indigenous peoples;²³
- equitably meet the needs of present and future generations;²⁴

¹³ Principle 3. This principle is significant in that it lays the basis for the equitable sharing of responsibilities. The United States, however, listed this principle as one of its formal reservations to the Rio Declaration, on the basis that "development is not a right ... it is a goal we all hold". See F. Pearce, "How Green was our Summit?", *New Scientist*, 27 July 1992, p. 13; and "A Summary of the Proceedings of the UN Conference on Environment and Development...", p. 9.

¹⁴ Principle 7. This principle was additionally listed as one of the formal reservations which the US has to the Rio Declaration. The US "does not accept any interpretation that would imply a recognition or acceptance by the US of any international obligations or liabilities". See Pearce, "How Green was our Summit?", p. 13; and "A Summary of the Proceedings of the UN Conference on Environment and Development...", p. 9.

¹⁵ Principle 6.

¹⁶ Principle 12.

¹⁷ Principle 7.

¹⁸ Principle 5.

¹⁹ Principle 1.

²⁰ Principle 8.

²¹ Principle 15.

²² Principle 16.

²³ Principles 20, 21, 22 respectively.

²⁴ Principle 3.

- develop "national laws of liability and compensation for environmental damage",²⁵ and
- undertake environmental impact assessments for activities likely to have a significant adverse environmental impact.²⁶

The document is weakened considerably by superficial and oblique references to population,²⁷ war and weapons of mass destruction,²⁸ and hazardous waste exportation,²⁹ amongst others. Statements which chiefly blame the North for environmental degradation and pollution have also been severely watered down.³⁰

2.3 LEGAL IMPLICATIONS

Although the Rio Declaration is not legally binding it is anticipated that as with the UN Declaration on Human Rights, governments adopting it will have a strong moral commitment to adhere to its principles.³¹ The Stockholm Declaration was comparably non-binding but was still important in subsequently influencing how governments defined their environmental obligations.³² However, non-governmental organisations

²⁵ Principle 13. This principle reinforces the Stockholm Declaration. However, the laws on liability and compensation have not evolved much since Stockholm, hence the stronger call in the Rio Declaration. See Ling, "Unequal Negotiations in an Unequal World", p. 8.

²⁶ Principle 17.

²⁷ An alliance of the Vatican, Latin American and some Muslim countries succeeded in removing all substantive references to population in the Rio Declaration. The sole remaining reference to population is a clause in Principle 8 which urges countries to "promote appropriate demographic policies". See J. Porritt, "Two Worlds, One Planet," *BBC Wildlife Magazine* 10(3) (August 1992), p. 7.

²⁸ An earlier G-77 proposal condemned the use of weapons of mass destruction as a "crime against both humanity and the environment". Despite the fact that the Stockholm Declaration contains similar wording to this proposal, the US and other Western nations opposed stronger language to that of Principle 24 in the Rio Declaration. See T. Deen, "Biggest Single Polluter? It's the Military", *Terra Viva*, 4 June 1992, p. 10; and Harkavy, *The Earth Summit...*, p. 24.

²⁹ The final text of Principle 14 is considerably emasculated from earlier proposals which called upon states to treat hazardous substances and wastes "at the point of generation", and ban the "transboundary treatment or disposal of these substances...". The United States and most European Community countries did not want hazardous waste exports to be addressed at all in the Declaration. See Harkavy, *The Earth Summit...*, p. 24.

³⁰ Only Principle 8 refers to unsustainable patterns of production and consumption. See critiques in Harkavy, *The Earth Summit...*, pp. 22-24; and Valentine, "PrepCom 4: The Road to Rio is Paved with Good Intentions", p. 3.

³¹ Centre for Our Common Future, "Preparing an Earth Charter", p. 1; UN, "The '92 Process: The United Nations Prepares for the Earth Summit", pp. 5-6; UN, "Rio Declaration on Environment and Development", p. 7.

³² See Centre for Our Common Future, "Preparing an Earth Charter", p. 1.

(NGOs) are sceptical that the Rio Declaration will assume the same level of significance as the Stockholm Declaration.³³

2.4 CONCLUSIONS

Interpretations of the Rio Declaration have varied enormously. It is clearly not the guiding statement of environmental ethics it was intended to be,³⁴ and much of the visionary quality of the original Earth Charter has been lost in its transition. Indeed, some of the principles simply support the status quo, and some are interpreted as retrogressing from principles accepted at Stockholm.³⁵

However, the document is a product of long and difficult consensus building and, as such, symbolises cooperation and partnership. This accounts for much of the significance attributed to the Declaration, which has been lauded as "an expression of a more balanced power relationship between industrialised and developing countries".³⁶ The Declaration partially succeeds in integrating environment and development and provides a political framework for Agenda 21, the action plan for change.³⁷

Effective implementation of the Declaration is now required, together with close monitoring of its application in the follow-up to UNCED. Action at an individual and NGO level is likely to be inspired by the brief, but universal NGO Earth Charter signed at the Global Forum.³⁸ There is broad consensus - amongst both governments and NGOs - that the principles enshrined in the Rio Declaration should serve as a basis for

³³ See for example, WWF, "Action Points for UNCED", May 1992.

³⁴ See for example, J. Freeman, "'Ecumenical Response' to Summit is off the Press", *Earth Summit Times*, 11 June 1992, p. 16; WWF, "Action Points for UNCED".

³⁵ See Porritt, "Two Worlds, One Planet," , p. 7; D. Runnalls, "An Open Letter to the Assembled World Leaders at the Summit", *Earth Summit Times*, 12 June 1992, p. 1; and WWF, "Action Points for UNCED".

³⁶ Harkavy, *The Earth Summit...*, p. 24.

³⁷ See M. Khor, "Decks Cleared for Adoption of Rio Declaration", *SUNS 5* (12 June 1992), p. 1; Khor & Raghavan, "Prepcom IV Ends in Agreement on Draft Rio Declaration but Other Key Issues Remain Deadlocked", p. 3; UN Secretary-General Boutros Boutros-Ghali, opening address at the Earth Summit, in "Boutros-Ghali: 'Planetary Development'", *Earth Summit Times*, 3 June 1992, p. 4; UNCED Secretary-General Maurice Strong, opening address at the Earth Summit, in "Strong Starts Delegates on a Journey to Save the World", *Earth Summit Times*, 4 June 1992, p. 6.

³⁸ See Annex 3.

the future negotiation of an Earth Charter.³⁹ This could be approved in 1995 - the 50th anniversary of the United Nations.

This concludes Chapter 2 which has described the history of the Rio Declaration and evaluated its success. The following eight chapters consider different aspects of Agenda 21. □

³⁹ See for example, D. Runnalls, "Successes and Failures from Rio", *Earth Summit Times*, 15 June 1992, p. 7; Valentine, "PrepCom 4: The Road to Rio is Paved with Good Intentions", p.3; and "Strong Starts Delegates on a Journey to Save the World", p. 6.

AGENDA 21



AGENDA 21

INTRODUCTION TO AGENDA 21

Agenda 21 forms the core of the United Nations Conference on Environment and Development and is a comprehensive plan of action which seeks to integrate developmental and environmental issues.¹ Although it recognises that responsibilities and priorities differ between countries, it is based on the premise that all nations share responsibility for the environment.² Each country is thus supposed to adjust its national policies to be in line with the commitments of Agenda 21.³ As stated in its preamble, Agenda 21 reflects a "global consensus and political commitment at the highest level on development and environment cooperation."⁴ Its successful implementation is thus primarily the responsibility of governments. In calling for a "global partnership for sustainable development",⁵ Agenda 21 recognises the importance of international cooperation, broad public participation and the active involvement of non-governmental organisations and other groups.⁶

Covering 40 chapters, 115 programme areas and several hundred pages, Agenda 21 is voluminous and formidable. The programme areas are described in terms of the basis for action, objectives, activities and means of implementation. Agenda 21 is divided into the following four sections: Social and Economic Dimensions; Conservation and Management of Resources for Development; Strengthening the Role of Major Groups; and Means of Implementation. A prosperous, just, habitable, fertile, clean, shared, cooperative and secure world is the fundamental basis of Agenda 21 and it is under these themes that the plan of action is discussed in the following eight

¹ See N. Desai [Deputy Secretary-General of UNCED], "The Outcome of Rio", *Network '92*, no. 18 (June/July 1992), pp. 1, 18-19.

² Agenda 21, chapter 1, para. 1.

³ See C.Y. Ling, "Unequal Negotiations in an Unequal World", *Third World Resurgence*, no. 25/25 (August/September 1992), p. 8.

⁴ Agenda 21, chapter 1, para. 3.

⁵ Agenda 21, chapter 1, para. 1.

⁶ Agenda 21, chapter 1, para. 3.

chapters of this dissertation. The next chapter examines trade systems and the integration of development and environment in decision-making. □

Chapter 3

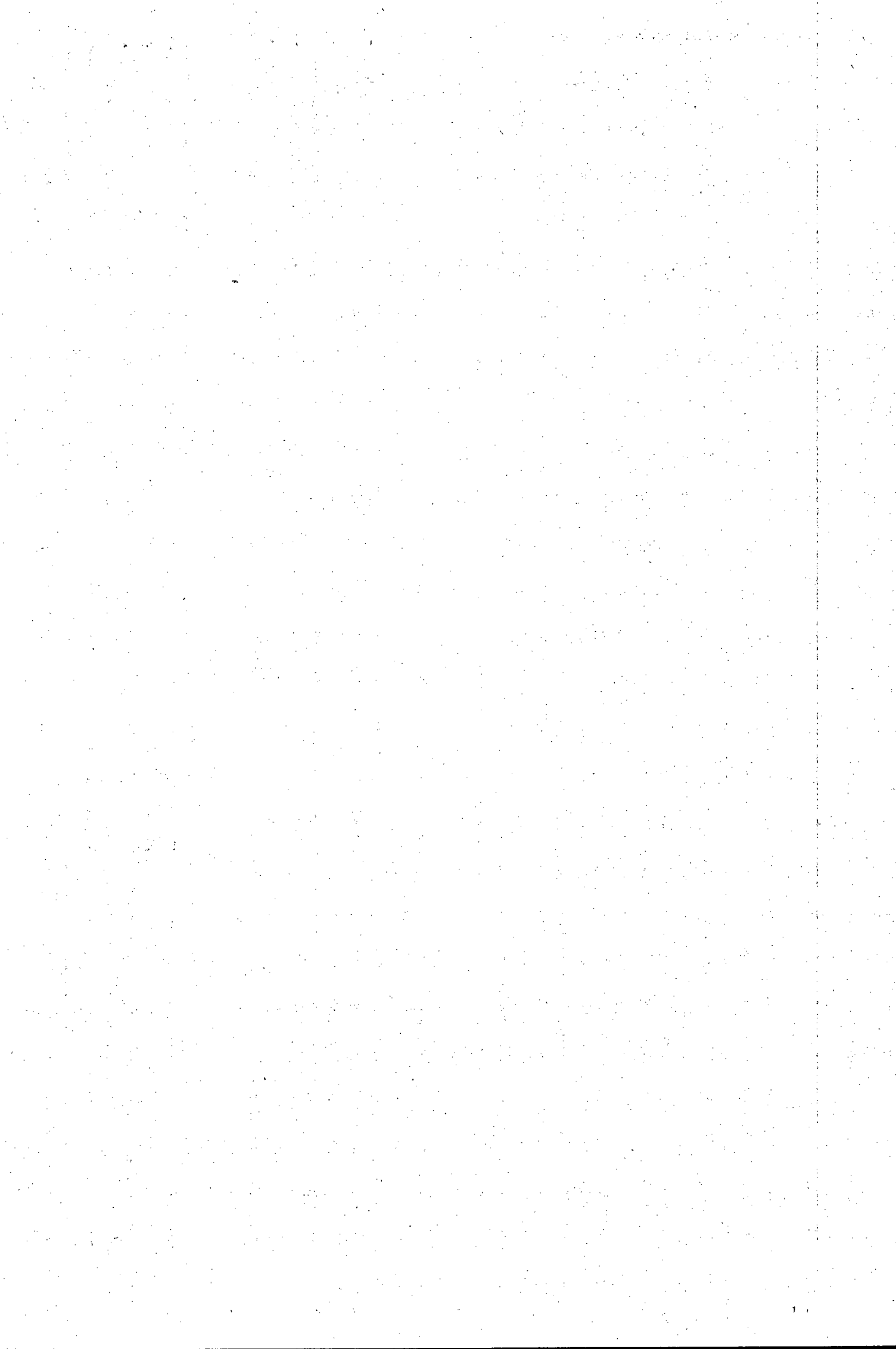
THE PROSPERING WORLD:

TRADE SYSTEMS AND THE INTEGRATION OF ENVIRONMENT
AND DEVELOPMENT IN DECISION-MAKING



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Chapter 3

THE PROSPERING WORLD: TRADE SYSTEMS AND THE INTEGRATION OF ENVIRONMENT AND DEVELOPMENT IN DECISION- MAKING

3.1 BACKGROUND

Attaining sustainable development requires three basic changes in our socio-economic framework.¹ Essentially, humankind needs to move from a society oriented to satisfying the wants of a few, to one committed to satisfying the basic needs of all; from an externally dependent society to one which is endogenous and self-sufficient; and from a society obsessed with economic growth to one which is sustainable and aware of its limits. Attaining sustainable development will thus, above all, require fundamental changes in current economic structures. For this to occur, environment and economics need to be integrated in all major institutions of decision-making.

Three bodies - the so-called Bretton Woods Institutions - effectively control the global economy²: the World Bank, the International Monetary Fund (IMF) and the General Agreement on Trade and Tariffs (GATT). They form an integrated structure which is dominated by the interests of the United States (US) and, in particular,

¹ A plethora of papers include these requirements. See for example, H. Henderson, "Beyond the New Paradigm: Living Earth's Epistemology", in *The Green Fuse*, ed. J. Button (London: Quartet Books, 1990); M. Khor, "Democratising Global Economic Relations is the Key to Resolving the Environment Crisis", *Earth Summit Briefings*, no. 13 (1992); J. MacNeill, P. Winsemius & T. Yakushiji, *Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology* (New York: Oxford University Press, 1991), pp. 3-28; W.E. Rees, "The Ecology of Sustainable Development", *The Ecologist* 20(1) (January/February 1990), pp. 18-23; W. Sachs, "Environment and Development: The Story of a Dangerous Liaison", *The Ecologist* 21 (6) (November/December 1991), pp. 252-257; B. Schneider, *The Barefoot Revolution: A Report to the Club of Rome* (London: Intermediate Technology Publications, 1988), 245 pp.; F.E. Trainer, "Environmental significance of development theory", *Ecological Economics* 2 (1990), pp. 277-286; and "Sustainable Development: Ten Points to Clarify the Concept", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 32-33.

² Environmental News Network, "Gatt Background", in *GATT: The Environment and the Third World* (n.p., 1992), p. 1; E. Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", *The Ecologist* 20(6) (November/December 1990), p. 203; Khor, "Democratising Global Economic Relations..."; C. Raghavan, "Recolonisation: GATT in its Historical Context", *The Ecologist* 20(6) (November/December 1990), p. 205.

transnational corporations (TNCs).³ Through GATT - which pursues a policy of free trade - markets have opened up to TNCs. At present, 20 corporations control 94% of the world's \$3 trillion annual trade.⁴

The policies of the Bretton Woods institutions have often been to the detriment of developing countries which have little say in their functioning.⁵ This has been aggravated by "structural adjustment programmes" imposed by the IMF as conditions for loans to developing countries.⁶ Conditionalities are typically GATT related, preventing developing countries from protecting their own industries against competition from the industrialised world, devaluing local currencies to make exports more attractive to developed countries, and cutting expenditure on social welfare to build up the country's industrial infrastructure.⁷ The overall effect is a transfer of economic wealth and decision-making away from local communities, and a weakening of environmental protection.⁸

Current trade practices are not only inequitable but unsustainable.⁹ Escalating tariffs currently prevent developing countries from adding value to their natural resources, which are consequently priced well below the full environmental and social

³ Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 203; N. Thrift, "The Geography of International Economic Disorder", in *A World in Crisis*, eds R.J. Johnston & P.J. Taylor (Oxford: Blackwell, 1986), pp. 21-31; United Nations Centre on Transnational Corporations, *Environmental Aspects of the Activities of Transnational Corporations: A Survey* (New York: UN, 1985).

⁴ K. Dawkins, "Food Self-Reliance and the Concept of Subsidiarity: Alternative Approaches to Trade", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa", Pietermaritzburg, 14-18 September 1992; C.Y. Ling, "Unequal Negotiations in an Unequal World", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 9-10; P. McCully, "GATT: A Brief History", *The Ecologist* 20(6) (November/December 1990), p. 206.

⁵ Environmental News Network, "GATT and the Third World", in *GATT: The Environment and the Third World*, pp. 1-3; Raghavan, "Recolonisation: GATT in its Historical Context", p. 206; S. Ramphal, *Our Country, The Planet* (Washington D.C.: Island Press, 1992), pp. 177-190.

⁶ Environmental News Network, "GATT and the Third World", pp. 1-3; Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 203; Ramphal, *Our Country, The Planet*, p. 190; N. Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, report prepared by Greenpeace International (n.p., 1992), p. 1.

⁷ Environmental News Network, "GATT and the Third World", pp. 1-3; Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 203.

⁸ K. Dawkins, *Balancing: Policies for Just and Sustainable Trade* (Minneapolis: Institute for Agriculture and Trade Policy, February 1992), pp. 5-18; Raghavan, "Recolonisation: GATT in its Historical Context", pp. 205-207.

⁹ Dawkins, *Balancing: Policies for Just and Sustainable Trade*, pp. 5-18; D. Runnalls, "Trade, the Missing Money Link", *Earth Summit Times*, 14 June 1992, p. 7; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, pp. 1-12.

cost of production.¹⁰ This encourages wasteful patterns of consumption in developed countries, and deprives developing countries of the financial resources necessary to build their economies sustainably.¹¹ Furthermore, foreign debt servicing obligations force developing nations to grow cash crops for exports, often to the detriment of both the environment and local needs.¹²

Existing rules of international trade do not permit the internalisation of environmental and social costs. Environmental "goods and services" are regarded as free and as a result, the environmental base upon which the economy depends has been ignored and consequently eroded.¹³ Current methods for measuring Gross National Product (GNP), for instance, disregard social and environmental costs, and value income flows only.¹⁴

High interest rates, debt, and market barriers are estimated by the United Nations Development Programme to cost developing countries \$500 billion of lost opportunities per year.¹⁵ Freer access to the markets of industrialised nations, together with the removal of subsidies in developed countries, would thus liberate substantial resources

¹⁰ C. Arden-Clarke, *South-North Terms of Trade, Environmental Protection and Sustainable Development*, World Wide Fund For Nature International Discussion Paper (Gland: WWF, 1992), pp. 7-9; C. Arden-Clarke, *International Trade, GATT and the Environment*, World Wide Fund For Nature International Position Paper (Gland: WWF, 1992), p. 13; Dawkins, *Balancing: Policies for Just and Sustainable Trade*, p. 10; Ramphal, *Our Country, The Planet*, pp. 178-180; Runnalls, "Trade, the Missing Money Link", p. 7; World Commission on Environment and Development (hereafter cited as the WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), p. 81.

¹¹ WCED, *Our Common Future*, p. 84.

¹² E.B. Barbier, "Alternative Approaches to Economic-Environmental Interactions", *Ecological Economics* 2 (1990), pp. 7-26; P.N. Bradley & S.E. Carter, "Food Production and Distribution - and Hunger", in *A World in Crisis*, pp. 101-124; Ramphal, *Our Country, The Planet*, pp. 180-182; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, p. 2; Ramphal, *Our Country, The Planet*, pp. 180-182; WCED, *Our Common Future*, p. 79-81.

¹³ Arden-Clarke, *International Trade, GATT and the Environment*, pp. 7-8; Dawkins, *Balancing: Policies for Just and Sustainable Trade*, pp. 13-14; Ramphal, *Our Country, The Planet*, p. 179; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, p. 2.

¹⁴ A. Randall, *Resource Economics: An Economic Approach to Natural Resource and Environmental Policy* (Columbus: Grid, 1981); The World Conservation Union, the United Nations Environment Programme & World Wide Fund For Nature, *Caring for the Earth* (Gland, 1991), p. 74.

¹⁵ United Nations (hereafter cited as the UN) Development Programme, *Human Development Report* (1992), summarised in *Earth Summit Times*, Special Supplement, 27 April 1992; and in M. ul Haq, "Now is the Time for Courage, not Empty Political Grandstanding", *Earth Summit Times*, 10 June 1992, p. 16. See also, Runnalls, "Trade, the Missing Money Link", p. 7.

for developing countries.¹⁶ Reforming the terms of trade is consequently crucial to achieve sustainable development.

Yet trade is controlled and effected between large corporations not between people or governments.¹⁷ Efforts thus need to be focused on these corporations. At present, TNCs are neither monitored nor regulated and those wishing to operate in an environmentally sound way are undercut by competitors.¹⁸ There is clearly a need for international regulation of TNCs, yet recent trends in GATT and the closure of the UN Centre on TNCs point towards deregulation and ever-greater freedom for TNCs in their relations with states.¹⁹

Nowhere is this more evident than in the recent (and ongoing) Uruguay Round of GATT negotiations. These entail extending the free trade principle to include services, foreign investments, and intellectual property rights.²⁰ Furthermore, nations will be prohibited from limiting the amount and type of agricultural products entering their borders.²¹ If implemented, the new rules could have far-reaching implications. Briefly, incorporating these factors would increase monopoly powers among fewer TNCs, undermine environmental standards, and reduce control of local businesses and

¹⁶ Statement of the Second Ministerial Conference of Developing Countries on Environment and Development, reported in D.R. Abbasi, "Developing Nations Firm on Funding", *Earth Summit Times*, 13 May 1992, p. 5. See also WCED, *Our Common Future*, p. 81.

¹⁷ Dawkins, *Balancing: Policies for Just and Sustainable Trade*, p. 3; M. Khor, "Transnational Corporations: The Interests Behind GATT", *The Ecologist* 20(6) (November/December 1990), p. 209; Ling, "Unequal Negotiations in an Unequal World", pp. 9-10.

¹⁸ M. Khor, "Refusing to Regulate TNCs: UNCED's Biggest Failure?", *Earth Summit Briefings*, no. 7 (1992); World Wide Fund For Nature (hereafter cited as WWF), "Action Points for UNCED", May 1992.

¹⁹ See Arden-Clarke, *International Trade, GATT and the Environment*, pp. 5-6; M. Khor, "The Uruguay Round and the Third World", *The Ecologist* 20(6) (November/December 1990), p. 208; M. Khor, "Regulating Transnational Corporations: The Biggest Gap in UNCED's Agenda", *Third World Economics*, no. 39 (16-30 April 1992), pp. 18-20; Ling, "Unequal Negotiations in an Unequal World", pp. 9-10; "Role of TNCs Enhanced as Controls Removed from Agenda 21", *Third World Economics*, no. 39 (16-30 April 1992), p. 7; and "GATT Will Undo UNCED's Gains", *Third World Resurgence*, no. 24/15 (August/September 1992), p. 25.

²⁰ Environmental News Network, "GATT: The Final Accord", in *GATT: The Environment and the Third World*, pp. 1-3; Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 204; Khor, "The Uruguay Round and the Third World", pp. 208-213; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, pp. 3-12.

²¹ Environmental News Network, "GATT and Agriculture", in *GATT: The Environment and the Third World*, p. 1; Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 204; M. Ritchie, "GATT, Agriculture and the Environment", *The Ecologist* 20(6) (November/December 1990), pp. 214-220.

communities over their livelihoods.²² Sustainable development would thus be contradicted in every respect.

Since GATT negotiations are conducted behind closed doors and do not allow input from non-governmental organisations (NGOs), the United Nations Conference on Environment and Development (UNCED) was regarded as a unique opportunity to secure environmental objectives for GATT.²³ In addition, it was hoped that UNCED would address the fundamental reform of existing trade and financial institutions, the need for international regulations governing the behaviour of TNCs, and the internalisation of environmental and social costs into decision-making procedures.²⁴

3.2 AGENDA 21: TRADE SYSTEMS AND THE INTEGRATION OF ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Agenda 21 attempts to address issues relating to the global economy in two chapters: the first deals with accelerating sustainable development in developing countries, the second with integrating environment and development in decision-making. Summaries of these chapters are presented in Boxes 1 and 2. An appraisal of them follows.

²² See Goldsmith, "The Uruguay Round: Gunboat Diplomacy by Another Name", p. 204; Khor, "The Uruguay Round and the Third World", pp. 208-213; and M. Ritchie, "GATT, Agriculture and the Environment", *The Ecologist* 20(6) (November/December 1990), pp. 214-220. See also J. Camerson & H. Ward, *The Multilateral Trade Organisation: A Legal and Environmental Assessment*, WWF International Research Report (Gland: WWF, 1992), pp. 2-16.

²³ See Dawkins, *Balancing: Policies for Just and Sustainable Trade*, p. 16; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, pp. 10-11; F.M. Strong, "Stop GATT Train, a World Wants to Get in", *Earth Summit Times*, 11 June 1992, p. 7; WWF, "Action Points for UNCED", 17 December 1991; WWF, "Action Points for UNCED", May 1992; and "The Great Debate - 'GATT vs UNCED'", Press Release no. 223, Global Forum, Rio de Janeiro, 10 June 1992.

²⁴ See Arden-Clarke, *International Trade, GATT and the Environment*, p. 13; E. Kufour, "G77: The Trade & Finance Issues UNCED Must Address", *Third World Resurgence*, no. 14/15 (October/November 1991), p.33; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, p. 11; and WWF, "Promoting Sustainable Development Through Trade", May 1992.

BOX 1. INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES²⁵

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>PROMOTING SUSTAINABLE DEVELOPMENT THROUGH TRADE LIBERALISATION</p> <p>\$8.8 billion from the international community on grant or concessional terms</p>	<p>In promoting an international trading system that improves developing country access to markets, the international community should:</p> <ul style="list-style-type: none"> ● provide for an equitable, secure, non-discriminatory and predictable international trading system; ● halt and reverse protectionism, expand market access, remove barriers restricting import, reduce "types of support that induce uncompetitive production" (eg export subsidies); and ● ensure that environment and trade policies are mutually supportive. <p>To facilitate trade liberalisation, developing countries are called on to develop national policies which:</p> <ul style="list-style-type: none"> ● diversify their economies to reduce dependence on commodity exports; ● remove biases against exports and discourage inefficient import-substitution; and ● expand processing and improve marketing practices.
<p>MAKING TRADE AND ENVIRONMENT MUTUALLY SUPPORTIVE</p> <p>No cost estimate</p>	<p>In developing an environment, trade and development agenda, governments are called on to "encourage GATT, UNCTAD and other relevant economic institutions" to:</p> <ul style="list-style-type: none"> ● promote studies and dialogue between trade, development and environment; ● deal with the root causes of environment and development problems; ● minimise or avoid the use of trade restrictions and environmental standards in developing countries; ● clarify the relationship between GATT provisions and multilateral measures adopted in environmental areas; ● ensure public input, and hence increased transparency, in the formation, negotiation and implementation of trade policies; and ● avoid unilateral actions to deal with environmental problems outside the jurisdiction of the importing country.
<p>PROVIDING ADEQUATE FINANCIAL RESOURCES TO DEVELOPING COUNTRIES</p>	<p>See Chapter 10 of this dissertation.</p>

²⁵ Agenda 21, chapter 2.

**ENCOURAGING
MACROECONOMIC
POLICIES CON-
DUCIVE TO
SUSTAINABLE
DEVELOPMENT**

\$50 million from the international community on grant or concessional terms

Industrialised countries and others in a position to do so should strengthen efforts to:

- encourage a stable and predictable international economic environment, stimulate savings and reduce fiscal deficits, undertake appropriate structural policies, and support efforts by developing countries to halt their marginalisation in the world economy.

For their part, developing countries are called on to promote policies which:

- support price stability and external balance, raise domestic savings and investment, and result in realistic exchange rates.

All countries should develop policies that:

- improve efficiency in the allocation of resources, promote transparency in decision-making and administration, and remove bureaucratic barriers which hinder entrepreneurship;
- provide the scope for "appropriate economic instruments to achieve sustainable development";
- provide opportunities for small-scale enterprises to contribute to the attainment of sustainable development.
- remove biases against exports, allow countries to benefit from foreign investment, and create a domestic economic environment balancing domestic and export markets.

BOX 2. INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING²⁶

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>INTEGRATING ENVIRONMENT AND DEVELOPMENT AT THE POLICY, PLANNING AND MANAGEMENT LEVELS</p> <p>\$50 million from the international community on grant or concessional terms</p>	<p>To improve decision-making processes, countries should:</p> <ul style="list-style-type: none"> ● integrate economic, social and environmental issues at all levels and in all ministries; ● adopt a long-term perspective and cross-sectoral approach; ● ensure transparency of, and accountability for, the environmental implications of economic and sectoral policies as well as public access to information. ● improve data systems, and adopt flexible and integrative planning approaches; ● delegate planning and management responsibilities to the lowest levels of public authority; and ● adopt a national strategy for sustainable development which harmonises various sectoral, economic, social and environmental policies and plans.
<p>PROVIDING AN EFFECTIVE LEGAL AND REGULATORY FRAMEWORK</p> <p>\$6 million from the international community on grant or concessional terms</p>	<p>Governments, with the support of international organisations should:</p> <ul style="list-style-type: none"> ● regularly assess national environmental laws to render them effective; ● cooperate to provide to developing countries an integrated programme of environment and development law services and training facilities; and ● develop strategies to improve compliance with national laws and regulations.
<p>MAKING EFFECTIVE USE OF ECONOMIC INSTRUMENTS AND MARKET AND OTHER INCENTIVES</p> <p>\$5 million from the international community on grant or concessional terms</p>	<p>Governments should:</p> <ul style="list-style-type: none"> ● incorporate environmental costs in the decisions of producers and consumers to reverse the tendency to treat the environment as a "free good"; ● reduce or remove subsidies which do not conform with sustainable development objectives; ● promote new markets in the area of pollution control and resource management; ● increase understanding of the role of economic instruments, and the use of pricing policies, taxation and market-oriented incentives in addressing environmental issues.
<p>ESTABLISHING SYSTEMS FOR INTEGRATED ENVIRONMENTAL AND ECONOMIC ACCOUNTING (IEEA)</p> <p>\$2 million from the international community on grant or concessional terms</p>	<p>Governments should:</p> <ul style="list-style-type: none"> ● establish systems of environmental accounting "at the earliest date"; ● expand national accounts to accommodate IEEA (eg include unpaid productive work such as child care and domestic chores); ● identify and consider measures for measuring the value of natural resources; ● encourage corporations to develop and implement methods for IEEA, and to provide relevant environmental information through transparent reporting to all interested parties.

²⁶ Agenda 21, chapter 8.

3.3 APPRAISAL OF AGENDA 21

There is broad consensus that Agenda 21 and UNCED have failed on virtually every account to reform economic structures, regulate TNCs, tackle the debt crisis and the South's falling terms of trade, and address the environmental impacts of free trade.²⁷ Indeed, the four largest NGOs at the Rio meetings - namely Friends of the Earth, Greenpeace, the World Wide Fund for Nature and Third World Network - unanimously included economic reform, TNCs, and trade, as three of the ten critical issues remaining "unsaid at UNCED".²⁸

In the first instance, Agenda 21 fails to recognise that economic growth and sustainable development are incompatible. Instead, trade liberalisation is promoted as an engine for growth to yield additional resources for environmental improvement.²⁹ No attention is given to the contradictions between free trade and sustainable development or to the need to impose limits on trade liberalisation and expansion to attain sustainable development. Nor is attention given to alternative development models. The result is an unbalanced approach, biased in favour of trade liberalisation at the cost of environmental protection and relative self-sufficiency.³⁰

Secondly, Agenda 21 does not adequately deal with the inequitable and environmentally destructive rules of trade, including those which deter countries from internalising environmental and social costs.³¹ In particular, no attention has been given to the agricultural subsidies used by the industrialised world which undercut the

²⁷ See for example, M. Khor, "Losers and Winners at Rio", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 3; Third World Network, The Forum of Brazilian NGOs, Greenpeace & Friends of the Earth International, "UNCED Ignores Ten Critical Issues", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 11-12; and "Much Goes 'Unsaid at UNCED'", Press Release no. 230, Global Forum, Rio de Janeiro, 11 June 1992.

²⁸ See Canihuante, "NGOs: Free Trade Won't Save Planet", *Terra Viva*, 4 June 1992, p. 3; and Third World Network, The Forum of Brazilian NGOs, Greenpeace & Friends of the Earth International, "UNCED Ignores Ten Critical Issues", pp. 11-12.

²⁹ Agenda 21, chapter 2, para. 9(d).

³⁰ Statement by Friends of the Earth, Greenpeace, Third World Network and the World Wide Fund for Nature, reported in Canihuante, "NGOs: Free Trade Won't Save Planet", p. 3. See also H.E. Daly, "Hidden Agendas: No. 1 Trade", *Guardian*, 10 April 1992, Environment Supplement, p. 31; H. Greijn, "UNCED Weak on Trade", *Ecoforum* 16(2) (1992), p. 8; A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 5; M.E. Hurtado, "Agenda 21 Fails to Give a Lead on Trade", *Terra Viva*, 10 June 1992, p. 22; WWF, "NGOs Call for Amendment of UNCED Trade Agreement", Press Release, Rio de Janeiro, 3 June 1992.

³¹ WWF, "WWF Says UNCED Falls Short of its Vision", Press Release, Rio de Janeiro, 13 June 1992.

ability of products from developing countries to compete on world markets. Nor does the text recognise that the current flow of under-priced natural resources to industrialised nations encourages wasteful and unsustainable patterns of consumption in these countries.³²

The text on trade is very general and negotiations have been diverted to the GATT Uruguay Round.³³ This is likely to be ineffective, since Agenda 21 fails to address reform of the Bretton Woods Institutions and instead endorses the Uruguay Round.³⁴ GATT is given no specific directive to address environmental concerns, and recommendations for action to rectify the detrimental effects of IMF structural adjustment programmes are lacking.³⁵ These omissions severely weaken Agenda 21's programme for sustainable development although may be offset to a limited extent by the newly-formed Commission on Sustainable Development.³⁶ If vested with the right powers, the Commission could provide an important step in making financial organisations such as the World Bank and the IMF accountable for the environmental impacts of their lending.³⁷

The exclusion of any recommendations to regulate the activity of TNCs has been one of UNCED's greatest failings.³⁸ Instead, self-regulation was promoted by the "Business Council for Sustainable Development".³⁹ All references to the environmental responsibilities of TNCs were systematically deleted by industrialised countries at PrepCom 4.⁴⁰

³² See WWF, "Promoting Sustainable Development Through Trade".

³³ Agenda 21, chapter 2, paras 9, 10(e).

³⁴ See M.E. Hurtado, "Shattered Hopes on Development", *Terra Viva*, 9 June 1992, p. 22; and WWF, "NGOs Call for Amendment of UNCED Trade Agreement".

³⁵ See Arden-Clarke, *International Trade, GATT and the Environment*, p. 3.

³⁶ See Chapter 10 of this dissertation.

³⁷ "After UNCED Who Controls the World?", *SUNS*, no. 6 (14 June 1992), p. 5.

³⁸ Khor, "Regulating Transnational Corporations: The Biggest Gap in UNCED's Agenda", pp. 18-20; WWF, "WWF Says UNCED Falls Short of its Vision".

³⁹ See Chapter 9 of this dissertation.

⁴⁰ This included an entire section, comprising five programme areas, on the roles and responsibilities of transnational corporations in effecting sustainable development. See UN, Commission on Transnational Corporations, 18th Session, *Report of the Secretary-General on Transnational Corporations and Sustainable Development: Recommendations of the Executive Director (E/C.10/1992/2)*, 16 December 1991. See also Harkavy, *The Earth Summit...*, p. 6; WWF, "PrepCom Update no. 4", 2 April 1992; and "Role of TNCs Enhanced as Controls Removed from Agenda 21", p. 7.

Finally, Agenda 21 does not translate its recognition of the need for full pricing of natural resources into specific policy proposals. A proposal for a section on full cost environmental accounting was withdrawn,⁴¹ and was replaced by weak references to removing price distortions on natural resources.⁴² Corporations are merely "encouraged" to develop environmental accounting methods.⁴³ UNCED has thus largely failed to internalise environmental and social costs and restructure the decision-making process.

Some improvements have, however been made in the text since PrepCom 4. Previously, any trade measures to back environmental policy were curbed. The final text leaves open this possibility⁴⁴ and has included principles and rules to be taken into consideration when environment-related trade policy measures are taken.⁴⁵ Nevertheless, these decisions, together with the treaties negotiated at UNCED and other environmental treaties, could well be rendered moot by GATT policy.⁴⁶

Agenda ya Wananchi - the NGO plan of action for sustainable development - together with three NGO treaties adopted at the Global Forum, redress the imbalances contained in the UNCED texts. Common recommendations in these documents⁴⁷ regarding trade include opening the world trade system to fair rather than free trade, making implementation of the GATT rounds conditional on a full assessment of

⁴¹ See UN, Commission on Transnational Corporations, *Report of the Secretary-General on Transnational Corporations and Sustainable Development...*, chapter 5, paras 45-52. See also Harkavy, *The Earth Summit...*, p. 6; WWF, "PrepCom Update no. 4"; and "Role of TNCs Enhanced as Controls Removed from Agenda 21", p. 7.

⁴² See Agenda 21, chapter 8, para. 47.

⁴³ Agenda 21, chapter 8, para. 48(b).

⁴⁴ Greijn, "UNCED Weak on Trade", p. 8. But see also WWF, "The GATT Report on Trade and Environment: A Critique by the WWF", March 1992, 8 pp.

⁴⁵ Agenda 21, chapter 2, para. 22.

⁴⁶ See H. Greijn, "GATT, Environment and Development", *Earth Island Journal*, Special Earth Summit Edition, June 1992, pp. 11-12; C. Hines, "The Need for Green Protectionism", *The Ecologist* 21(3) (May/June 1991), p. 151; F. Pearce, "No Southern Comfort at Rio?", *New Scientist*, 16 May 1992, pp. 38-41; Roht-Arriaza, *UNCED Undermined: Why Free Trade Won't Save the Planet*, pp. 8-9; and "GATT Will Undo UNCED's Gains", p. 25.

⁴⁷ *Agenda ya Wananchi: Citizen's Action Plan for the 1990s*, Roots for the Future Conference, Paris (1991); International Non-Governmental Organisations (hereafter cited as NGOs) and Social Movements Forum, "Treaty on Alternative Economic Models", Global Forum, Rio de Janeiro, June 1992; International NGOs and Social Movements Forum, "Alternative Treaty on Trade and Sustainable Development", Global Forum, Rio de Janeiro, June 1992; International NGOs and Social Movements Forum, "NGOs Treaty on TNCs: Democratic Regulation of TNC Conduct", Global Forum, Rio de Janeiro, June 1992. See also "Group Calls for Fair Trade Over Free Trade", *Ecoforum* 16(1) (1992), p. 5; and Chapter 9 of this dissertation for further details of the NGO treaty-making process.

environmental and social impacts, and renegotiating or replacing GATT with a structure which ensures transparency, accountability, environmental sensitivity and equitable decision-making. The NGO treaty on Alternative Economic Models requires "mobilisation to counter and make democratically accountable the operations of the World Bank, the IMF and the so-called economic development models dominated by TNCs".⁴⁸ The NGO treaty on TNCs proposes a number of actions which aim to "democratically regulate" TNC conduct.⁴⁹

3.4 IMPLICATIONS FOR SOUTH AFRICA

The inadequacies of these Agenda 21 chapters make it difficult to extract meaningful implications. UNCED has however highlighted areas in which we need to tread carefully. Firstly, South Africa's enforced isolation from the international community has precluded it from IMF-imposed structural adjustment programmes and the GATT debate, despite it being a founder member.⁵⁰ This may well be to our advantage since a policy of self-sufficiency in food and raw materials has been followed, allowing for relative independence within the global economy.⁵¹

Present economic restructuring in the country aims to change the orientation of the industrial sector from one of import replacement to a more outward looking and internationally competitive approach.⁵² There are many advantages to an export-oriented economy; in terms of attaining sustainable development and relative self-reliance, however, it may be prudent to look to our own resources and neighbours first. To this end, self-sufficiency, diminished dependence on international financial

⁴⁸ International NGOs and Social Movements Forum, "Treaty on Alternative Economic Models", Action Plan, para. 1.

⁴⁹ International NGOs and Social Movements Forum, "NGOs Treaty on TNCs: Democratic Regulation of TNC Conduct", Action Components, paras 1-8.

⁵⁰ Republic of South Africa, Board of Trade and Industry, *Manual on the Policy and Procedure Relative to Customs Tariff Protection and Tariff Relief* (Pretoria, 1988), p. 3.

⁵¹ D. Cooper, "Present Land Use in South Africa", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa"; Dawkins, "Food Self-Reliance and the Concept of Subsidiarity..."; Industrial Development Corporation of South Africa Limited, *Modification of the Application of Protection Policy*, Policy Document (n.p., 1990), p. 2.

⁵² Industrial Development Corporation of South Africa Limited, *Modification of the Application of Protection Policy*, pp. 9-10.

institutions, and regional cooperation are African National Congress (ANC) economic policy.⁵³

Secondly, present and future foreign investment in South Africa should be subject to careful scrutiny and be in accordance with agreed codes of conduct.⁵⁴ In this regard, NGOs and trade unions have an important monitoring and investigative role to play.

Thirdly, steps which have recently been taken by the Department of Environment Affairs regarding environmental auditing and the internalisation of environmental and social costs⁵⁵ need to be carefully examined, as do proposed institutional changes and decision-making structures. This is covered in more detail in Chapter 10 of this dissertation.

Finally, we need to be conscious of the diverse definitions of sustainable development, and wary of its use for political and industrial expediency. It is worth noting that the President's Council Report on a National Environmental Management System,⁵⁶ ANC economic policy⁵⁷ and the Business Council for Sustainable Development⁵⁸ all subscribe to the notion of "sustainable economic growth".

⁵³ African National Congress (hereafter cited as the ANC), *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, pp. 19-25.

⁵⁴ See also, S. Barber, "IMF Report Lays Down Strict Ground Rules for Aid to SA", *Business Day*, 11 February 1992; P. Bond, "The Tina-Themba Debate: There Is No Alternative... There Must Be an Alternative", *New Ground*, no. 8 (Winter 1992), pp. 21-24; R. Drew, "Huge World Bank Aid for SA on Cards", *Star*, 12 February 1992; V. Padayachee, "Apartheid, South Africa and the International Monetary Fund", *Transformation* 3 (1987), pp. 31-57; C. Ryan, "World Bank Opens Gates", *Sunday Times*, 12 April 1992; M. Swilling & P. Bond, "Can the Bank be Stopped?", *Work in Progress* (June 1992), p. 31; B. Turok, "World Bank Aid for Africa Hurts Those it would Rather Help", *Business Day*, 29 May 1992; and N. Vink & J. van Rooyen, "Funding Development in South Africa", *New Ground*, no. 8 (Winter 1992), pp. 25-26.

⁵⁵ These steps were mentioned in a paper presented by the then Minister of the Environment, Louis Pienaar, entitled "The Role of Government in a New South Africa", presented at the Earthlife Africa Conference "What it Means to be Green in South Africa", Pietermaritzburg, 14-18 September 1992.

⁵⁶ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 130.

⁵⁷ ANC, *Ready to Govern...*, p. 19.

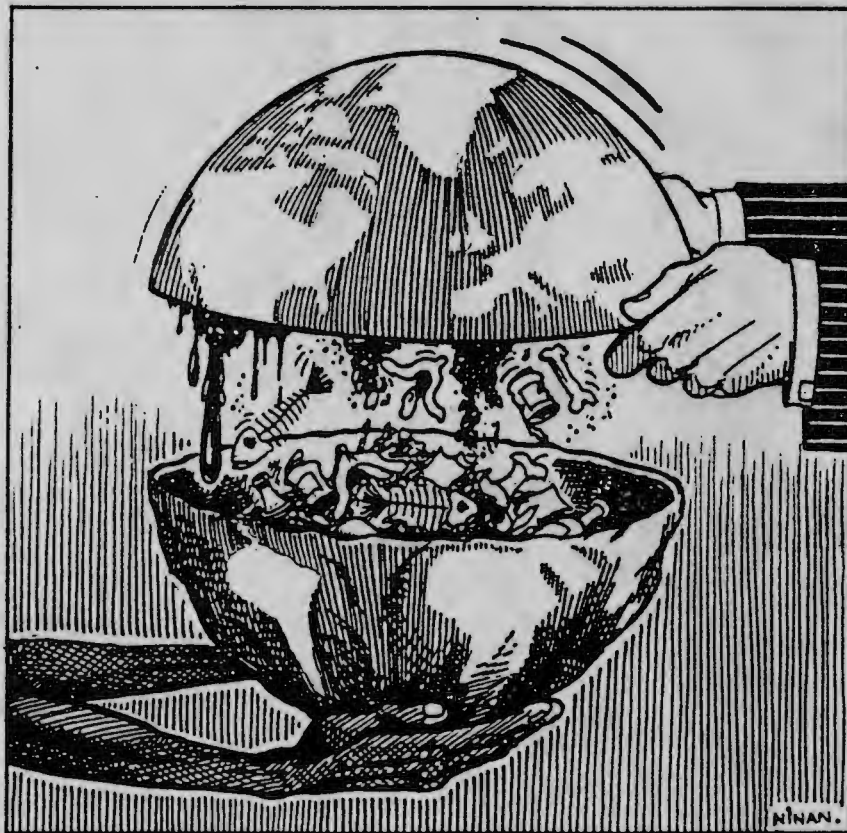
⁵⁸ S. Schmidheiny, *Changing Course: A Global Business Perspective on Development and the Environment* (Cambridge, Mass: MIT Press, 1992), 374 pp.

This concludes Chapter 3 which has provided background information on trade systems, and has evaluated Agenda 21 proposals and their implications for South Africa. Chapter 4 considers Agenda 21 proposals concerning population, poverty and consumption. □

Chapter 4

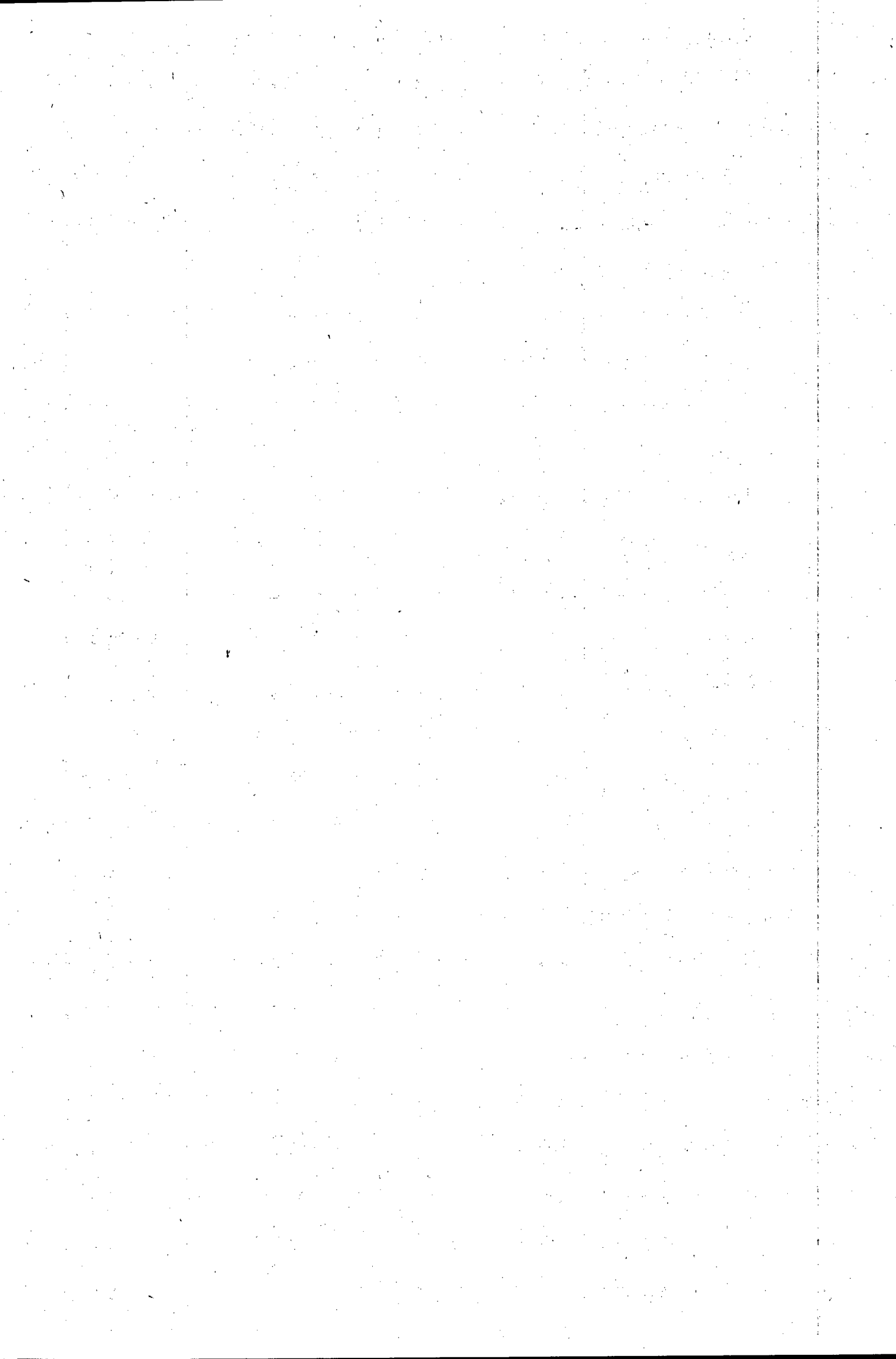
THE JUST WORLD:

POPULATION, POVERTY AND CONSUMPTION



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Chapter 4

THE JUST WORLD: POPULATION, POVERTY AND CONSUMPTION

4.1 THE BASIS FOR ACTION: ATTAINING GLOBAL SUSTAINABILITY

Achieving sustainable living for all requires changes in three key agents, all directly responsible for human impact on the environment: population, consumption/production and technology.¹ Few would deny that each of these factors plays a major role in environmental degradation. The relative significance of each factor, however, has given rise to a highly controversial debate. For the so-called Malthusians, population is the central component, overriding all other contributing factors.² A more progressive contingent highlights poverty, inequality, overconsumption by the North and technology as comprising the roots of the problem.³ The technocrats downplay the crisis, focusing on the capacity of human ingenuity, technology and free-market systems as problem-solving mechanisms.⁴ In reality, it seems that each of these groups is partially right, with all factors contributing to a highly complex interaction.

4.1.1 Population

Firstly, there is little doubt that population growth is of overwhelming concern. World population, which now stands at 5.5 billion, is growing faster than ever before: three people are born every second, more than 250 000 every day, 93 million every

¹ See for example, P. Harrison, *The Third Revolution: Environment, Population and a Sustainable World* (London: I.B. Tauris, 1992), 359 pp; and statement issued by the international conference on *Population, Natural Resources and Development*, 11 November 1991.

² See for example, P.R. Ehrlich & A. Ehrlich, *The Population Bomb* (New York: Ballantine, 1969); D.H. Meadows et al., *The Limits to Growth* (New York: Universe Books, 1972).

³ See for example, D. Harvey, "Population, Resources and the Ideology of Science", in *Radical Geography* (London: Methuen, 1977); and P. Blaikie, *The Political Economy of Soil Erosion* (London: Longman, 1985).

⁴ See for example, J. Simon, *Theory of Population and Economic Growth* (Oxford: Blackwell, 1986).

year.⁵ At this rate a billion more people will be added to the global population by the year 2001.⁶ The "medium" projection of the United Nations Population Fund (UNFPA) is that by the year 2050, 10 billion people will inhabit the Earth, almost twice today's population.⁷ Growth will continue for another century to 11.6 billion before the population starts to fall.⁸ A more pessimistic "high" projection assumes that immediate action will not be taken to slow population. If this is so, world population will swell to 12.5 billion by 2050, with continued growth to 20.7 billion.⁹ As much as 97% of this growth will occur in Africa, Asia and Latin America,¹⁰ with more than 80% of the expansion taking place in urban areas.¹¹

A recent study¹² on the relationship between population and environmental degradation shows clear trends between population increase and environmental degradation. In developing countries, which represent 80% of the world's population, population growth between 1973 and 1988 was responsible for 79% of deforestation, 46% of arable land expansion and 59% of the growth in livestock numbers. Close links can thus be demonstrated between population growth, loss of wildlife habitat and biodiversity, accelerated soil erosion and increased methane (a so-called greenhouse gas) emissions.

In many instances, high population growth is also associated with poverty, both as a supposed result and cause. Certainly, population growth rates and income levels are negatively correlated: where population growth is high, income levels are low, and vice versa.¹³ There is also little doubt that several aspects of poverty lead to higher fertility: high infant mortality; lack of education; absence of security in old age; and the

⁵ United Nations Fund for Population Activities (hereafter cited as UNFPA), *State of the World Population, 1992* (New York, 1992). See also, L. Cordova, "How to Guarantee Well-Being for a Population Growing by the Second?", *Terra Viva*, 10 June 1992, p. 9; and "Greed is Greatest Threat to Planet", *New Scientist*, 2 May 1992, p. 7.

⁶ UNFPA, *State of the World Population, 1992*.

⁷ *Ibid.*

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ *Ibid.*

¹¹ *Ibid.* See also "People that on Earth do Dwell", *Guardian Weekly*, 12-18 June 1992.

¹² Harrison, *The Third Revolution*.

¹³ *Ibid.*, pp. 236-254.

inability to afford family planning.¹⁴ In addition, larger families generally have less land per capita than smaller families and are thus more likely to become agents of environmental destruction.¹⁵ Therefore, it is argued,¹⁶ there is little chance of stabilising world population or retarding environmental degradation until poverty is alleviated. But whilst population expands at the present rate, the chance of reducing poverty diminishes rapidly.

4.1.2 Poverty

Of the 4.2 billion people in the developing world, about 1.2 billion or roughly one-quarter live in conditions of extreme poverty, deprived of adequate food, basic education and health care.¹⁷ Every day, over 800 million people go hungry, many of them children.¹⁸ According to a recent World Health Organisation document,¹⁹ the greatest health problems in the world are illnesses brought on by environmental factors: in water, air, soil and food. Some one and a half billion people do not have primary health care and are threatened by a host of diseases, with four million children dying every year from diarrhoeal diseases. Two and a half billion people suffer from illnesses linked to insufficient or contaminated water and lack of sanitation. Making primary health care available to all is thus a key aspect to combating poverty.

Alleviating poverty in the long term requires addressing the root causes of the issue. Chief amongst these are the inequalities between developed and developing countries: 77% of the world's people earn 15% of total income, with per capita incomes of rich nations being 65 times those of the poorest nations.²⁰ These disparities

¹⁴ Ibid., p. 260.

¹⁵ Ibid., pp. 126-130.

¹⁶ See for example, Reconvened World Commission on Environment and Development (hereafter cited as the Reconvened WCED), *Our Common Future*, London, 22-24 April 1992 (Geneva: Centre for Our Common Future, 1992), p. 12. See also Keynote Address by His Royal Highness The Prince of Wales to the World Commission on Environment and Development, in Reconvened WCED, *Our Common Future*, pp. 22-23.

¹⁷ A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 6; S. Ramphal, *Our Country, The Planet* (Washington D.C: Island Press, 1992), pp. 123-124.

¹⁸ World Health Organisation, *Our Planet, Our Health* (n.p., 1992).

¹⁹ Ibid. See also W. Novaes, "The Worst of Poverty", *Terra Viva*, 12 June 1992, p. 11.

²⁰ Ramphal, *Our Country, The Planet*, p. 124; "Too Many People", *New Scientist*, 2 May 1992, p. 3.

have, moreover, doubled in the past 30 years,²¹ a fact which adds weight to the argument that the wealth of developed countries derives directly from their use of developing country resources, unfair trade systems and international debt.²² Indeed, many of the debates regarding economic development and population growth rates fail to account for these factors.²³

4.1.3 Consumption

As affluence increases, so too does resource consumption, waste generation and resultant environmental degradation. Thus while poverty results in local environmental stresses, unsustainable patterns of consumption and production are the major cause of global environmental deterioration.²⁴ This holds true both for industrialised countries and for industries and wealthy people in developing countries. Industrialised countries, although comprising only 24% of the total world population, account for over 75% of consumption of commercial energy, metals and mineral resources.²⁵ Even regarding basic nutrition, the developed world consumes more than half of the world's food commodities (see Box 3 for examples of the disparity in per capita consumption patterns between South and North).

Although the finite availability of resources is of enormous concern, what is more pressing is the limited capacity of the Earth to absorb the output of waste generated by these consumption patterns. Over 90% of all industrial waste, hazardous waste and industrial effluent is generated by developed countries.²⁶ These countries are further responsible for 87% of the world's chlorofluorocarbon emissions and 74% of carbon

²¹ "Too Many People", p. 3.

²² See Chapters 3 and 10 of this dissertation.

²³ For a discussion of the narrow vision which has typified population debates see Harrison, *The Third Revolution*; and B. Klugman, "Victims or Villains? Overpopulation and Environmental Degradation", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), pp. 66-77.

²⁴ M. Campbell, "Progress on Population", *Earth Summit Times*, 15 June 1992, p. 13; Harrison, *The Third Revolution*, pp. 236-269; Ramphal, *Our Country, The Planet*, pp. 90-143.

²⁵ Ramphal, *Our Country, The Planet*, pp. 91-104.

²⁶ WCED, *Our Common Future* (Oxford: Oxford University Press, 1987), p. 226.

dioxide emissions from fossil fuels.²⁷ An average North American produces 4 000 times their own bodyweight in municipal and industrial waste in a lifetime, compared to 150 times the bodyweight of a person in a developing country.²⁸

BOX 3. PER CAPITA ANNUAL CONSUMPTION STATISTICS (1991) ²⁹			
ITEM	SOUTH	NORTH	RATIO
CEREALS	247 kg	717 kg	15.3
MILK	39 kg	320 kg	8.2
MEAT	11 kg	61 kg	5.5
SAWN WOOD	19 sq m	213 sq m	11.2
PAPER	11 sq m	148 sq m	13.5
FERTILISERS	15 kg	70 kg	4.7
CEMENT	130 kg	451 kg	3.5
IRON & STEEL	36 kg	469 kg	78.2
INORGANIC CHEMICALS	8 kg	163 kg	20.4
PRIVATE VEHICLES	0.012	0.283	23.6
COMMERCIAL VEHICLES	0.0006	0.075	125

Because of these inequalities, continued population growth in industrialised countries is more of a threat to global resources than is population growth in the developing world. There is some indication, however, that the balance is changing.³⁰ Many developing nations are rapidly industrialising and adopting consumer patterns which emulate those in the North. There is no doubt that a continuous expansion of these patterns of consumption will critically threaten the planet's viability.³¹

²⁷ UN Conference on Trade and Development (hereafter cited as UNCTAD), *Combating Global Warming. Study on a Global System of Tradeable Carbon Emission Entitlements*, (UNCTAD/RDP/DFP/1), 1992, pp. 96-97.

²⁸ Ramphal, *Our Country, The Planet*, pp. 97-100.

²⁹ These figures are extracted from a report prepared for the UN Conference on Environment and Development (hereafter cited as UNCED) by the Indira Gandhi Institute of Development Research. See *Consumption Patterns: The Driving Force of Environmental Stress* (Bombay: IGIDR, 1991).

³⁰ See Ramphal, *Our Country, The Planet*, pp. 144-168; and UN, "Population Pressures: A Complex Equation", *Earth Summit in Focus*, no. 6, 1992, pp. 4-5.

³¹ For a description of future scenarios, see D.H. Meadows, D.L. Meadows & J. Randers, *Beyond the Limits* (London: Earthscan, 1992).

4.1.4 Technology

But, the technocrats argue, rises in population density and consumption lead to changes in technology.³² Technological adjustments of the Industrial and ongoing Agricultural Revolutions resulted from a scarcity of resources and increase in population density. Surely technology will resolve this crisis in a similar fashion? Certainly, it has a role to play. For example, environmentally sound technology will be extremely important in setting the world on a more sustainable and less polluting path. Technology is, however, a double-edged sword. When applied inappropriately (eg The Green Revolution) the social and environmental impacts can be severe.³³ When used to reduce environmental impacts it can similarly have detrimental effects: chemical fertilisers reduced the area of land needed to grow food, but increased the pollution of waterways.³⁴ Thus technological change, although important, is not the panacea which some make it out to be.

4.1.5 Finding solutions

In short, population growth rates will have to be reduced and the pattern of human activities changed if ecological catastrophe is to be averted. A number of conditions are well-known to be conducive to stabilising population growth.³⁵ First, a high level of female education and literacy. Second, a decent status for women, including equal access to land, jobs and health facilities. These two factors are the surest route towards empowering women to participate in decisions about themselves and about family size. Thirdly, adequate mother and child health care to increase child survival rates so that parents will have confidence that their children will survive to adulthood. Finally, easy access to a wide and free choice of safe and effective family planning methods, with good counselling and medical back-up.

³² See for example, Simon, *Theory of Population and Economic Growth*.

³³ Harrison, *The Third Revolution*, pp. 236-239; UN, "Population Pressures: A Complex Equation", p. 2.

³⁴ Harrison, *The Third Revolution*, p. 236.

³⁵ See, for example Harrison, *The Third Revolution*, pp. 286-291; S. Kottary, "Sadik Says Population Issues Not Overlooked", *Earth Summit Times*, 12 June 1992, p. 4; The World Conservation Union, the United Nations Environment Programme & the World Wide Fund For Nature (hereafter cited as the IUCN, UNEP & WWF respectively), *Caring for the Earth* (Gland, 1991), pp. 49-51; E. Thompson & B. Wilkinson, "Women will not be Coerced", *Terra Viva*, 8 June 1992, p. 8; and UN, "Population Pressures: A Complex Equation", pp. 6-8.

Changing consumption and production patterns is more intractable. A shift to sustainable technologies is part of the solution.³⁶ Incorporating the real ecological prices of environmental goods and services is another important part of changing behaviour patterns.³⁷ Environmental education, focusing on basic needs and the shortcomings of present Northern lifestyles is a third.³⁸ These factors, reinforced by a growing "green consumer" movement and rigorous standards for business and industry, could go a long way to changing the basic values of industrial society.

4.2 THE BASIS FOR ACTION: ATTAINING SUSTAINABILITY IN SOUTH AFRICA

In South Africa, both Northern consumption patterns and Southern poverty coexist, paralleling global trends whilst producing one of the most inequitable societies in the world. This dichotomy exists in a number of other countries - notably India and Brazil - but in South Africa, apartheid has added a complex dimension to the issues.

4.2.1 Population

Population growth is certainly a concern in South Africa, although it is questionable as to whether it is "indisputably the biggest threat to the South African environment",³⁹ as advocated by the President's Council and many others. The total population in South Africa was estimated at 37.5 million in 1990, with growth rates of 2.5% per year between 1985 and 1990.⁴⁰ Economic growth, now at -2%,⁴¹ lags far

³⁶ See for example, Harrison, *The Third Revolution*, pp. 287-280; IUCN, UNEP & WWF, *Caring for the Earth*, pp. 47-48.

³⁷ See for example, IUCN, UNEP & WWF, *Caring for the Earth*, pp. 48-49; and "Consumers and Sustainable Development", Press Release no. 75, Global Forum, Rio de Janeiro, 4 June 1992.

³⁸ See for example, "Lester Brown Calls for an 'Environmental Revolution'", Press Release no. 90, Global Forum, Rio de Janeiro, 4 June 1992.

³⁹ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 9. See also B. Huntley, R. Siegfried & C. Sunter, *South African Environments into the 21st Century* (Cape Town: Human & Rousseau Tafelberg, 1989), pp. 25, 47-50.

⁴⁰ J. Sadie, "A Reconstruction and Projection of Demographic Movements in the RSA and TBVC Countries", Research Report 148 (Pretoria: Bureau of Market Research, University of South Africa, 1988).

⁴¹ L. Pienaar [Then Minister of the Environment], "The Role of Government in a New South Africa", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa", Pietermaritzburg, 14-18 September 1992.

behind this population increase.⁴² High levels of African fertility are the main factor driving population growth in South Africa.⁴³ Recent trends, however, indicate that the total fertility rate (the number of children born in the lifetime of a woman) is declining: between 1985-1990, the rate was 5.12, predicted to drop to 4.32 during the period 2000-2005.⁴⁴ Much of this reduction will occur among urban Africans,⁴⁵ the trends in rural areas not being clear. Accounting for a reduction in fertility but excluding the impacts of AIDS, projections are that the population will begin stabilising at 75 million, fifteen times that at the beginning of the century.⁴⁶ Accounting for both a reduction in fertility and AIDS lowers the estimation to 50 million.

There is little doubt that high population densities have resulted in environmental degradation, particularly in the "homelands". Severe rates of soil erosion, overgrazing and extensive deforestation are three obvious effects.⁴⁷ Yet overcrowding in the "homelands" has been the direct result of apartheid policy. The Land Acts, Group Areas Act, "betterment" programmes, influx control and forced removals have played key roles in orchestrating the removal of some 3.5 million people from their land,⁴⁸ preventing people from moving to urban areas⁴⁹ and forcing 42% of the total population onto 13% of the land, only 15% of which is arable.⁵⁰ Environmental degradation has consequently resulted from enforced high population densities, combined with the inadequate provision of sanitation and water facilities as well as energy sources.⁵¹

⁴² C. Simkins, "Population Pressures", in *Restoring the Land*, eds M. Ramphela & C. McDowell (London: Panos, 1991), p. 25.

⁴³ Ibid.

⁴⁴ Sadie, "A Reconstruction and Projection of Demographic Movements...", p. 48.

⁴⁵ Simkins, "Population Pressures", p. 22.

⁴⁶ Ibid., p. 23.

⁴⁷ See Chapter 6 of this dissertation.

⁴⁸ L. Platzky & C. Walker, *The Surplus People: Forced Removals in South Africa* (Braamfontein: Ravan Press, 1985), p. 9. PUBLISHER???

⁴⁹ F. Wilson & M. Ramphela, *Uprooting Poverty* (Cape Town: David Philip, 1989), pp. 216-220.

⁵⁰ Huntley et al., *South African Environments into the 21st Century*, pp. 52-53.

⁵¹ See Chapters 5 and 11 of this dissertation for more detail.

Apartheid policies have further contributed to a high population growth rate in undermining educational and job opportunities, disrupting family and community structures and consequently thwarting people's access to resources and security.⁵² And where people are deprived of security children act as the replacement, both to share the domestic burden of women and to provide income.⁵³

Poverty is another contributing factor to population growth in South Africa, although the causal links between the two are not well-defined: large families certainly have fewer resources, but whether or not poverty results in high population growth is more questionable. Contrary to popular belief, evidence points towards responsible parenthood being practiced by many poor people in South Africa.⁵⁴ In particularly impoverished areas or in communities with broken social structures, however, the birth-rate is likely to be higher, especially among teenagers.⁵⁵

4.2.2 Poverty

Poverty in South Africa is widespread, but is distinct from other countries in that it has been a result of direct policy. Consequently, the inequality which exists in the country is higher than any other country for which statistics have been kept:⁵⁶ 5% of the population own 80% of the wealth,⁵⁷ four corporations control 80% of the shares traded on the Johannesburg Stock Exchange,⁵⁸ 38% of the population are formally unemployed.⁵⁹ In 1980, whites, constituting less than one sixth of the population, earned about two-thirds of the total income of South Africa.⁶⁰ In the same year, half

⁵² Klugman, "Victims or Villains? Overpopulation and Environmental Degradation", pp. 70-77.

⁵³ Ibid., p. 76.

⁵⁴ Wilson & Ramphele, *Uprooting Poverty*, p. 247.

⁵⁵ Ibid., B. Klugman, Untitled paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa".

⁵⁶ These studies are reported in Wilson & Ramphele, *Uprooting Poverty*, pp. 4, 18, 31.

⁵⁷ B. Turok, "South Africa's Skyscraper Economy", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa".

⁵⁸ Ibid.

⁵⁹ President's Council, *Report of the Three Committees...*, p. 131.

⁶⁰ M. Ramphele, "New Day Rising", in *Restoring the Land*, p. 1.

of the total South African population was found to be living below subsistence levels⁶¹ (that income required for basic needs): among African people, two-thirds lived in conditions of poverty.⁶² Access to health care is similarly unbalanced. One doctor attends to an average of 12 000 Africans, as compared to one doctor for every 330 whites.⁶³ Infant mortality rates are 8-10 times higher among African than among white children.⁶⁴ In a country which exports food, thousands of babies die from malnutrition and associated diseases, whilst an estimated two million children grow up malnourished.⁶⁵

4.2.3 Consumption

Clearly then, population issues in South Africa need to be placed in a broader context to be addressed effectively. In particular, they need to be considered together with the inequitable and unsustainable patterns of production and consumption in South Africa among the industrial sector and the more affluent. For example, while only one-third of South Africans have access to electricity,⁶⁶ the country produces some of the highest per capita emissions of greenhouse gases in the world.⁶⁷ The amount of waste generated per capita is similarly exceedingly high.⁶⁸ Air and water pollution, acid rain, climate change and considerable resource depletion are some of the consequences of this lifestyle. How one ranks these wider effects against the more local effects resulting from high population densities is debatable.

⁶¹ These studies are reported in Wilson & Ramphele, *Uprooting Poverty*, pp. 16-17. More recent studies estimate that 45% of the total South African population live below subsistence levels. See South African Institute of Race Relations, *Race Relations Survey 1991/92* (Johannesburg, 1992).

⁶² Wilson & Ramphele, *Uprooting Poverty*, pp. 16-17.

⁶³ Klugman, "Victims or Villains? Overpopulation and Environmental Degradation", p. 75.

⁶⁴ Wilson & Ramphele, *Uprooting Poverty*, p. 107.

⁶⁵ *Ibid.*, pp. 100-120.

⁶⁶ K. de Selincourt, "South Africa takes the Apartheid out of Power", *New Scientist*, 7 September 1991, pp. 25-26; P. Theron, A.A. Eberhard & C. Dingley, "The Provision of Electricity in Urban Areas of South Africa: Towards a New Policy Framework", *Urban Forum* 2(2) (1992), p. 1.

⁶⁷ UNCTAD, *Combating Global Warming...*, pp. 96-97.

⁶⁸ See for example, E. Koch, D. Cooper & H. Coetzee, *Water, Waste and Wildlife* (London: Penguin, 1990), p. 49.

4.3 AGENDA 21: POPULATION, POVERTY AND CONSUMPTION

Four chapters of Agenda 21 directly address these issues, although there are several other chapters which deal either with the results of population growth, poverty and consumption, or the factors affecting these concerns. The chapter most directly related to population issues is entitled "Demographic Dynamics and Sustainability" - Box 4 summarises the three programme areas contained in this section. Proposals to enable the poor to achieve sustainable livelihoods are included in the chapter on combating poverty, considered in Box 5. Box 6 examines three programme areas concerned with the protection of human health. Box 12 in Chapter 5 of this dissertation should also be referred to with regard to urban health issues. Finally, Agenda 21's proposals regarding consumption patterns are summarised in Box 7.

BOX 4. DEMOGRAPHICS DYNAMICS AND SUSTAINABILITY ⁶⁹	
PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
ADDRESSING THE LINKS BETWEEN POPULATION DYNAMICS AND SUSTAINABLE DEVELOPMENT \$10 million from the international community on grant or concessional terms	Relevant institutions should: <ul style="list-style-type: none"> ● identify the interactions between population processes, natural resources and life support systems; and ● integrate population trends and factors into studies of environmental change, identifying priority areas for action to mitigate adverse effects.

⁶⁹ Agenda 21, chapter 5.

FORMULATING INTEGRATED NATIONAL POLICIES FOR POPULATION, ENVIRONMENT AND DEVELOPMENT

\$90 million from the international community on grant or concessional terms

Governments, with assistance from relevant agencies, should:

- integrate population concerns into national planning, policy and decision-making processes, with full recognition of women's rights;
- analyse the relationships between population dynamics, environmental change and environmental degradation;
- assess the national population carrying capacity with respect to satisfying basic needs and attaining sustainable development;
- assess the impact of population on the traditional livelihoods of indigenous groups and local communities;
- establish national databases on population dynamics and environment;
- establish and implement national population policy goals and programmes in keeping with the freedom, dignity and personally held values of individuals;
- develop programmes for managing environmental migrants and appropriate socio-economic policies for the young and elderly;
- conduct national reviews and monitor the integration of population policies in national environment and development strategies; and
- raise awareness of population and sustainable development interactions, stressing linkages between primary health and environmental care.

IMPLEMENTING INTEGRATED POPULATION, ENVIRONMENT AND DEVELOPMENT PROGRAMMES AT THE LOCAL LEVEL

\$7 billion (\$3.5 billion from the international community on grant or concessional terms)

Governments, local communities, Community-Based Organisations and NGOs, with the assistance of international organisations, should:

- establish a nationwide consultative process to ensure that the needs and constraints of all, in particularly the poor and underprivileged, are reflected in programme designs;
 - ensure that special attention is given to the role of women in population/environment programmes and in achieving sustainable development;
 - develop reproductive health programmes and services to reduce maternal and infant mortality and enable women and men to fulfil their aspirations in terms of family size;
 - ensure that women and men have the same right to decide freely and responsibly on the number and spacing of their children and have access to the information, education and means to enable them to exercise this right;
 - establish and strengthen preventive and curative health facilities that include women-centred, women-managed reproductive health care and affordable, accessible family planning services. Programmes should provide the opportunity for all women to breast-feed fully, at least during the first four months after birth;
 - develop culturally-based information and education programmes that transmit easily understood reproductive health messages; and
 - foster institutional conditions to facilitate the implementation of population programmes and improve coordination at all levels. The established national machinery for women should be closely involved in developing these conditions.
- It is suggested that governments could share their experience in the implementation of Agenda 21 at the International Conference on Population and Development to be held in 1994.

BOX 5. COMBATING POVERTY: ENABLING THE POOR TO ACHIEVE SUSTAINABLE LIVELIHOODS⁷⁰

Governments, in cooperation with international and non-governmental organisations, should support a community-driven approach to sustainable development through, among other things:

- advancing and empowering women through full participation in decision-making;
- respecting the cultural integrity and rights of indigenous peoples and their communities;
- promoting grassroots mechanisms to allow for the sharing of knowledge and experience between communities and the management of local natural resources; and
- delegating authority, accountability and resources to the most appropriate level.

Governments, with the assistance of appropriate organisations, should establish measures that will:

- promote adequate levels of funding and create a focus in national development plans and budgets on investment in human capital, particularly in rural areas and impoverished urban communities;
 - ensure the immediate alleviation of extreme poverty as well as the development of a long-term multifaceted and integrated strategy which targets the causes of poverty, reduces inequalities between various population groups and secures the sound and sustainable management of the environment;
 - generate employment opportunities and remunerative activities (eg through the development of adequate infrastructure and marketing, technology and credit systems and by giving high priority to basic education and professional training);
 - set up an effective and accessible primary and maternal health care system;
 - strengthen legal frameworks for the management, access and ownership of land and land resources, particularly for women;
 - rehabilitate degraded resources and promote the sustainable use of resources for basic human needs;
 - strengthen and establish community-based mechanisms to enable communities to gain access to resources needed by the poor;
 - implement mechanisms for popular participation, particularly by poor people and women, in local community groups;
 - promote food security and food self-sufficiency within the context of sustainable agriculture;
 - recognise and integrate informal-sector activities into the economy by removing regulations which discriminate against such activities;
 - make available lines of credit and other facilities for the informal sector and improved access to land for the landless poor; and
 - provide the poor with access to fresh water, sanitation and primary education.
- A review of the progress made in eradicating poverty through the implementation of the above activities should be given high priority in the follow-up of Agenda 21.
- The total annual cost of implementing these activities is averaged at \$30 billion, including \$15 billion from the international community on grant or concessional terms.

⁷⁰ Agenda 21, chapter 3.

BOX 6. PROTECTION AND PROMOTION OF HUMAN HEALTH ⁷¹

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>MEETING PRIMARY HEALTH CARE NEEDS, PARTICULARLY IN RURAL AREAS</p> <p>\$40 billion (\$5 billion from the international community on grant or concessional terms)</p>	<p>Governments and local authorities, with the support of NGOs and international organisations, should:</p> <ul style="list-style-type: none"> ● build basic health infrastructure and develop and strengthen primary health care systems which are practical, scientifically sound and geared towards basic health needs for clean water, safe food and sanitation; ● strengthen coordination among public health, environmental protection and development planning sectors; ● establish, maintain and monitor the effectiveness of health programmes; ● promote health education and support initiatives for self-management of services; ● extend health service coverage to population groups in greatest need, particularly those living in rural areas; ● conduct research on traditional knowledge in health practices and integrate these into national health systems, as appropriate; ● promote rehabilitation activities for the rural handicapped; and ● support community involvement in environmental health activities and research into environmental health.
<p>CONTROL OF COMMUNICABLE DISEASES</p> <p>\$4 billion (\$900 million from the international community on grant or concessional terms)</p>	<p>Governments should consider developing a national health action plan including, at a minimum, the following components:</p> <ul style="list-style-type: none"> ● programmes to identify environmental hazards resulting in communicable diseases, to forecast the spread of the disease, and to prevent diseases through vaccines; ● health education and public information programmes to control communicable diseases; ● intersectoral cooperation and coordination; ● methods for the prevention and control of environmental factors influencing the spread of diseases; ● primary health care systems which strengthen prevention mechanisms and early diagnostic programmes and reduce the vulnerability to HIV infection of women and their offspring; ● multidisciplinary research programmes; and ● technology development and dissemination. <ul style="list-style-type: none"> ● By the year 2000, guineaworm disease and polio should be eradicated, and river blindness and leprosy controlled. ● By the year 2000, universal access to safe water and sanitation should be ensured, thus reducing waterborne diseases and childhood diarrhoea. ● By the year 2000, 95% of the world's child population should have access to care for acute respiratory infections. ● By the year 2000, anti-malaria programmes should be instituted in relevant countries as well as control programmes for other human parasites. The resurgence of tuberculosis should be contained, with particular emphasis on multiple antibiotic resistant forms.
<p>PROTECTING VULNERABLE GROUPS</p> <p>\$3.7 billion (\$400 million from the international community on grant or concessional terms)</p>	<p>Governments, in cooperation with relevant organisations, should:</p> <ul style="list-style-type: none"> ● strengthen basic health care services for children, youth, women and indigenous peoples and their communities; ● undertake widespread adult education on treating and preventing ailments; ● involve women's groups in identifying health risks and in decision-making and national action programmes on women and development; and ● provide concrete incentives to encourage attendance of women of all ages at school and adult education courses.

⁷¹ Agenda 21, chapter 6.

BOX 7. CHANGING CONSUMPTION PATTERNS⁷²

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>FOCUSING ON UN-SUSTAINABLE PATTERNS OF PRODUCTION AND CONSUMPTION</p> <p>Not likely to require significant new financial resources</p>	<ul style="list-style-type: none"> ● All countries, with developed countries taking the lead, should strive to attain sustainable consumption patterns. ● Developing countries should seek to guarantee the provision of basic needs whilst avoiding the unsustainable consumption patterns of industrialised countries. ● The review of progress made in achieving sustainable consumption patterns should be given high priority in the follow-up of Agenda 21. ● Governments, organisations and policy institutes should make concerted efforts to compile basic data on consumption patterns and analyse the relationship between production, consumption, technological adaptation and innovation, economic growth and development and population dynamics. They should further assess how modern economies can grow and prosper while reducing energy, material use and waste. ● Consideration should be given to the need for new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles, and are less dependent on the Earth's finite resources and more in harmony with the Earth's carrying capacity.
<p>DEVELOPING NATIONAL POLICIES AND STRATEGIES TO ENCOURAGE CHANGES IN UNSUSTAINABLE CONSUMPTION PATTERNS</p> <p>Not likely to require significant new financial resources</p>	<p>Governments, in cooperation with industry and the public should:</p> <ul style="list-style-type: none"> ● encourage greater efficiency in the use of energy and resources by disseminating existing environmentally sound technologies (ESTs), promoting research and development in ESTs, assisting developing countries to use appropriate ESTs and encouraging the environmentally sound use of renewable sources of energy; ● minimise the generation of wastes by encouraging recycling, reducing wasteful packaging and encouraging the introduction of environmentally sound products; ● assist consumers to make environmentally sound purchasing decisions through the development of criteria which assess the environmental impacts of products and processes throughout the full life cycle, and by subsequently developing clear indicators and labels for products; ● design and implement market signals and environmental pricing that take into account the costs and consequences of consumption and waste generation; and ● promote education, public awareness campaigns and positive advertising to promote sustainable consumption and production patterns. <p>● Governments should review the purchasing policies of their own agencies and departments to promote more sustainable consumption patterns.</p>

⁷² Agenda 21, chapter 4.

4.4 APPRAISAL OF AGENDA 21

4.4.1 Population

Discussion of population at the UN Conference on Environment and Development (UNCED) and its preparatory meetings was mired in confusion and controversy. In fact, many have criticised the lack of attention it was accorded in the environment and development debate.⁷³ For example, the sole mention of population in the Rio Declaration is a deliberately ambiguous reference to "appropriate demographic policies".⁷⁴ There are a number of reasons for population not being adequately addressed at UNCED, chief amongst them the North/South division, opposition from the Catholic Church as well as the sensitivity to matters pertaining to population control among women's groups.

In their background reports to UNCED, many developing countries referred to population growth as a leading cause of environmental degradation.⁷⁵ Despite this concern, there was a marked reluctance among developing countries to bring population into the debate. This was linked to a fear that the focus of discussion would shift to population growth in the South - and away from the North's contribution to global environmental degradation and its exploitation of the South.⁷⁶

This position was further complicated by opposition from the Vatican (the so-called Holy See) to references in Agenda 21 concerning family planning and

⁷³ See P. Gupte, "Fornos: Population Growth is Dangerous", *Earth Summit Times*, 15 June 1992, p. 16; J. Mathews, "A World Evading the Challenge", *Guardian Weekly*, 30 April-7 May 1992, p. 22; V. Menezes, "Cousteau's Warning: 'Demographic Tsunami'", *Earth Summit Times*, 6 June 1992, p. 3; J.D. Oliver, "World Leaders Stress Population Growth", *Earth Summit Times*, 6 June 1992, p. 13; F. Pearce, "How Green was Our Summit?", *New Scientist*, 27 July 1992, p. 13; G. Piel, "Population Growth Not a Fringe Issue", *Earth Summit Times*, 6 June 1992, p. 4; WWF, "Consumption and Population", 8 June 1992; "Much Goes 'Unsaid at UNCED'", Press Release no. 230, 11 June 1992; and "A Population Plan", *Washington Post*, 12-18 June 1992, p. 17.

⁷⁴ The Rio Declaration on Environment and Development, Principle 8.

⁷⁵ See UN, *Nations of the Earth Report*, 2 vols (Geneva, 1992) for summaries of National Reports submitted to UNCED. See also, J.D. Oliver, "Population Issues Threaten to Explode", *Earth Summit Times*, 4 June 1992, p. 10.

⁷⁶ See Pearce, "How Green was Our Summit?", p. 13; C. Raghavan, "UNCED Debates South Population vs North Lifestyle as Main Cause of Crisis", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 40-41; and UN, "Population Pressures: A Complex Equation", p. 7.

contraceptives.⁷⁷ Wording referring to these issues was consequently removed from the text at PrepCom 4 and replaced by "the responsible planning of family size, in keeping with freedom, dignity and personally held values and taking into account ethical and cultural considerations."⁷⁸ Whilst this language has been criticised since it differs from well-recognised wording on family planning,⁷⁹ it is thought that the compromise implies recognition by the Holy See of the importance of population factors in environment and development.⁸⁰

The most articulate opposition to population issues at UNCED derived from women's groups.⁸¹ In a non-governmental treaty,⁸² women emphasised that the right to control their own lives "is the basis of all action on population, environment and development". The treaty expressed women's rejection of all forms of control over their bodies by governments and international institutions and emphasised their reproduction rights, including the right to abortion in the case of unwanted pregnancies. They demanded greater sensitivity to their needs, among which is access to family planning within a framework of broader health and educational services to improve quality of life.

There are some groups who find the Agenda 21 text on population acceptable. The UNFPA, for instance regards the final text as "satisfactory, given the intensity of the debate".⁸³ It points to Agenda 21's emphasis of the role and status of women and the inclusion of the freedom to choose and the right to information and services. To

⁷⁷ C.A. Fernandez, "Vatican Delegate: The Feminist 'Kissling is Totally Wrong on the Church'", *Terra Viva*, 11 June 1992, pp. 12-13; Harkavy, *The Earth Summit...*, pp. 8-9; J.T. McHugh [Bishop of Camden], "Population is Not the Only Issue, Says Bishop", *Terra Viva*, 12 June 1992, p. 13. See also Oliver, "Population Issues Threaten to Explode", p. 10; and I. Villar, "Frances Kissling: The Decision on Motherhood is up to Women, it is not up to the Vatican", *Terra Viva*, 10 June 1992, pp. 12-13.

⁷⁸ Chapter 5, paras 50, 51.

⁷⁹ Oliver, "Population Issues Threaten to Explode", p. 10; N. Sadik [Executive Director of UNFPA], "Family Planning has Place on Agenda", *Earth Summit Times*, 14 June 1992, p. 6.

⁸⁰ L. Bianchi, "Balancing Population Issues", *Terra Viva*, 6 June 1992, p. 10; Campbell, "Progress on Population", p. 13.

⁸¹ See for example, Thompson & Wilkinson, "Women will not be Coerced", p. 8; and "Women Agree Treaties on 'Issues UNCED Ignored'", *Terra Viva*, 12 June 1992, p. 10.

⁸² International Non-Governmental Organisations (hereafter cited as NGOs) and Social Movements Forum, "NGO Treaty on Population, Environment and Development", Global Forum, Rio de Janeiro, June 1992. See also, L. Cordova, "Planeta Femea Opens Up to Population and Environment", *Terra Viva*, 10 June 1992, p. 9; and "Women Agree Treaties on 'Issues UNCED Ignored'", p. 10.

⁸³ Sadik, "Family Planning has Place on Agenda", p. 6. See also Kottary, "Sadik Says Population Issues Not Overlooked", p. 4; and J. Wheeler, "People, Poverty and the Earth Summit", *People & the Planet* 1(1/2) (1992), pp. 8-9.

give a sharper focus to the question of population, UNFPA is planning a Population and Sustainable Development Conference in 1994.⁸⁴ This may serve to compensate for UNCED's general failure to emphasise population concerns.

4.4.2 Poverty

There are several programme areas in Agenda 21 which deal with the causes and effects of poverty and it is thus difficult to draw conclusions about this particular section. Agenda 21 describes poverty as "a complex multidimensional problem with its origins in both the national and international domains".⁸⁵ It regards the struggle against poverty as a "shared responsibility of all countries",⁸⁶ with solutions to the problem being country-specific. The success of these proposals will thus ultimately be determined by the political will and resources of individual governments.⁸⁷

A common criticism directed at the text of Agenda 21 is that it identifies poverty, rather than affluence, as the chief cause of environmental degradation.⁸⁸ The "Global Forum on Environment and Poverty", a group comprised of some 50 non-governmental organisations (NGOs), mostly from developing countries, called for a convention on poverty and a system in which excessive consumerism would be taxed to fund sustainable development initiatives in poorer countries.⁸⁹

⁸⁴ Agenda 21, chapter 5, para. 18. See also Kottary, "Sadik Says Population Issues Not Overlooked", p. 4.

⁸⁵ Agenda 21, chapter 3, para. 1.

⁸⁶ Ibid.

⁸⁷ See Chapter 10 of this dissertation.

⁸⁸ See for example, M. Khor, "Nine Key Tests of UNCED Success", *Terra Viva*, 6 June 1992, p. 6; J.K. Nyerere, "Consumption Must Also be Sustainable", *Earth Summit Times*, 13 June 1992, p. 6; C. Raghavan, "Poverty and Ecology: 'A Dialogue of the Deaf'", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 36-37; "Lifestyle of the North Under Attack", *Terra Viva*, 5 June 1992, p. 9; and "NGOs Address the Issue of Poverty", Press Release no. 171, 8 June 1992.

⁸⁹ "Call for a Poverty Convention", *Terra Viva*, 10 June 1992, p. 23; "NGOs Address the Issue of Poverty".

4.4.3 Consumption

One of the most dispiriting factors at UNCED was the lack of willingness of several governments to seriously address consumption issues.⁹⁰ At PrepCom 4, 19 paragraphs on consumption and lifestyles were systematically deleted by the US and Canada, leaving only two paragraphs referring to unsustainable patterns of consumption.⁹¹ The final text is thus weak, addressing unsustainable lifestyles in industrialised countries and parts of developing countries only indirectly.⁹² It focuses on developing environmentally sound technologies,⁹³ on minimising the generation of wastes⁹⁴ and on implementing environmental pricing.⁹⁵ A NGO treaty on Consumption and Lifestyle⁹⁶ redresses the failings of this chapter to a certain extent, although clearly cannot compensate for the lack of political will.

4.5 IMPLICATIONS FOR SOUTH AFRICA

Despite inadequacies in the Agenda 21 text on population, poverty and consumption, the debate at UNCED concerning these issues provides some general pointers for South Africa. Firstly, effective solutions to population growth, poverty and overconsumption will only be found if we confront these issues in an integrated fashion. For each one is inextricably interwoven with the other. The fragmented, narrow vision which has typified thinking on these matters, both globally and in South Africa, needs to be fundamentally challenged.

⁹⁰ See J. Bernstein, P. Chasek & L.J. Goree VI, "PrepCom IV: The Final Stop on the Road to Rio", *Network '92*, no. 16 (April 1992), p. 2, 10; and "Lifestyle of the North Needed by the South", *Terra Viva*, 5 June 1992, p. 3.

⁹¹ Harkavy, *The Earth Summit...*, p. 8; J. Vidal & P. Chatterjee, *Guardian*, Environment Supplement, 10 April 1992, p. 31; WWF, "PrepCom Update no. 4", 2 April 1992.

⁹² See Third World Network, The Forum of Brazilian NGOs, Greenpeace & Friends of the Earth International, "UNCED Ignores Ten Critical Issues", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 11; "Lifestyle of the North Under Attack", p. 9; "A Summary of the Proceedings of the UN Conference on Environment and Development 3-14 June 1992", *Earth Summit Bulletin* 2(13) (16 June 1992), p. 2; and "Much Goes 'Unsaid at UNCED'".

⁹³ Agenda 21, chapter 4, para. 18.

⁹⁴ Agenda 21, chapter 4, para. 19.

⁹⁵ Agenda 21, chapter 4, paras 24, 25.

⁹⁶ International NGOs and Social Movements Forum, "Treaty on Consumption and Lifestyle", Global Forum, Rio de Janeiro, June 1992.

Secondly, empowering women by promoting appropriate educational and literacy programmes and uplifting their status is the most crucial ingredient to controlling population growth. This has particular relevance in South Africa, a society which has a history of being both sexist and economically exploitative. Yet to-date there have been few attempts to holistically embrace a women's empowerment programme. The state-controlled Population Development Programme, although progressive in its objectives, is widely distrusted by communities and family planners alike and is justifiably perceived to be politically motivated.⁹⁷ Similarly, a top-down approach to family planning characterises many state health initiatives which are further hindered by fragmented, bureaucratic and inefficient administrative structures.⁹⁸ This situation has further degenerated with the present state of political flux as well as a lack of available funds.⁹⁹ Thus family planning efforts in South Africa are viewed with suspicion and are widely perceived to be wholly inadequate. In this regard Agenda 21's population proposals, despite their deficiencies, certainly warrant consideration; particularly with the anticipated reshuffling of government health structures. Since it is unlikely that a new government will immediately allay people's suspicions about population programmes, NGOs have a key role to play in the implementation of these programmes in South Africa.¹⁰⁰

It has been estimated that an annual 10% increase in Gross Domestic Product would be required to eradicate poverty in South Africa.¹⁰¹ Likewise, a 5% increase in economic growth is necessary to provide full employment.¹⁰² Given the present state of economic decline in the country it is doubtful as to whether these aims will be realised. Long-term efforts to reduce poverty are thus likely to depend upon effective, low-cost initiatives which promote self-reliance among communities and are focused on basic needs. Agenda 21 describes a number of mechanisms to facilitate this process including the strengthening of legal frameworks for access and ownership of land,

⁹⁷ E. Greathead, ex-Director of the Cape Town office of the Planned Parenthood association, pers. comm.; Klugman, Untitled paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa".

⁹⁸ In 1989, there were 14 Ministers of Health in South Africa. See Wilson & Ramphela, *Uprooting Poverty*, p. 338.

⁹⁹ E. Greathead, pers. comm.

¹⁰⁰ Ibid.

¹⁰¹ Huntley et al., *South African Environments into the 21st Century*, p. 73.

¹⁰² Ibid.

integrating informal sector activities into the economy and making lines of credit available, promoting coordination structures within communities and implementing mechanisms for popular participation. These recommendations have enormous relevance in South Africa, where initiatives to alleviate poverty have typically induced dependency rather than self-reliance.

Finally, Agenda 21's recommendations on changing consumption patterns, although weak, are still pertinent to South Africa. The basic needs approach advocated by Agenda 21 is intrinsically tied to reducing inequalities between population groups, and thus directly contradicts the luxury consumption patterns evident among wealthy South Africans. Even among less affluent South Africans, white families typically have two to three cars, a "holiday" home, and a range of superfluous gadgets. Thus, while these same consumers may purchase "environment-friendly products" the wider connections to lifestyle patterns are often not made. This is aggravated by lax labelling laws on consumer products in South Africa and a largely unaware and apathetic public.¹⁰³ Among poorer South Africans, aspirations tend towards luxury consumption patterns and a lifestyle which is largely unrealistic and unattainable. Challenging these aspirations whilst avoiding antagonism will require environmentalists to become allied with mass-, worker- and community-based organisations to demonstrate the links between basic needs and environmental issues.¹⁰⁴

There is thus enormous scope in Agenda 21's proposals for public awareness campaigns, positive advertising, data compilation on consumption patterns, comprehensive environmental assessments of products and processes, clear labelling and the implementation of market pricing that takes the full environmental costs of products into account. For it is only through a consumer-conscious public that industries will be compelled to reassess their strategies and processes.

This concludes Chapter 4 which has described the interactions between population, poverty, consumption and technology, both globally and in South Africa. Chapter 4 has

¹⁰³ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), p. 52.

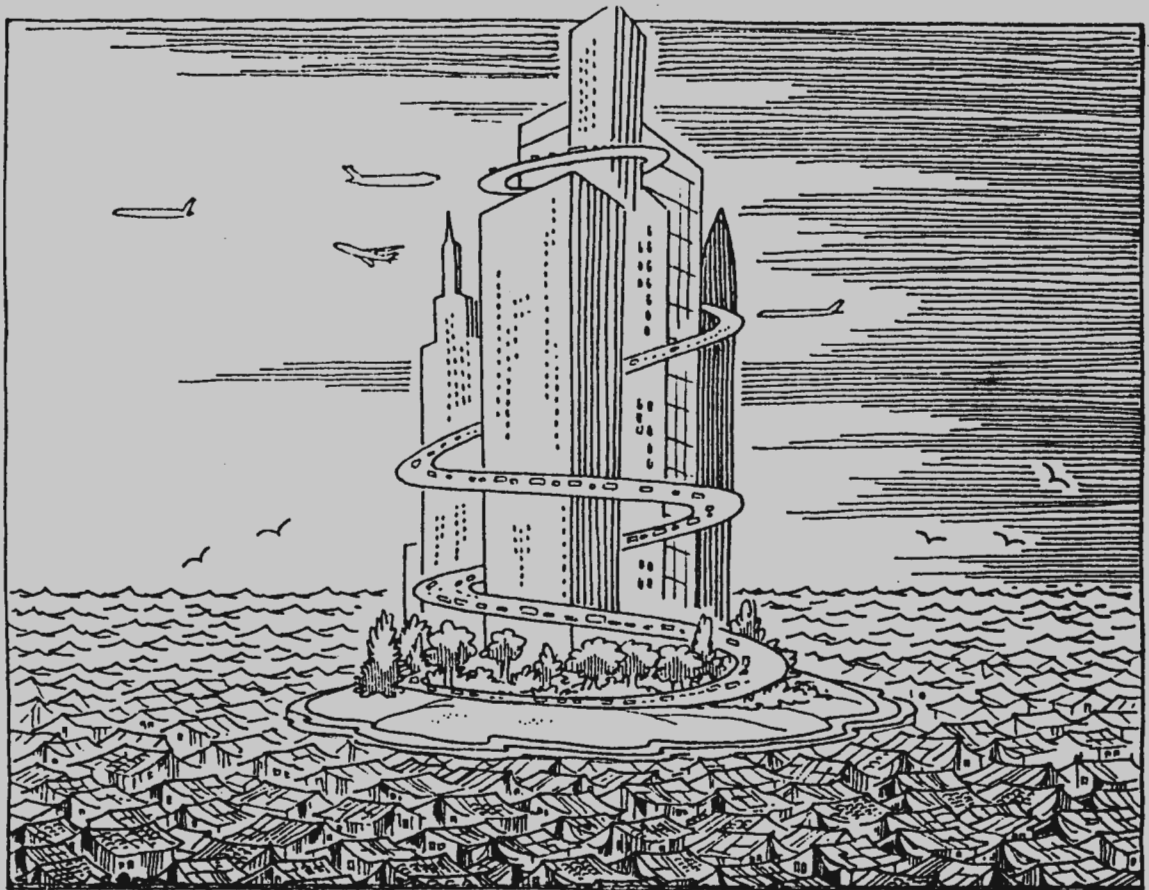
¹⁰⁴ F. Khan, Coordinator of the Environmental Advisory Unit, University of Cape Town, pers. comm.

assessed Agenda 21 proposals concerning these issues as well as the implications of these proposals for South Africa. The following chapter examines Agenda 21 proposals regarding urbanisation. □

Chapter 5

THE HABITABLE WORLD:

HUMAN SETTLEMENTS, URBAN WATER SUPPLIES, SOLID
WASTE, URBAN POLLUTION AND HEALTH

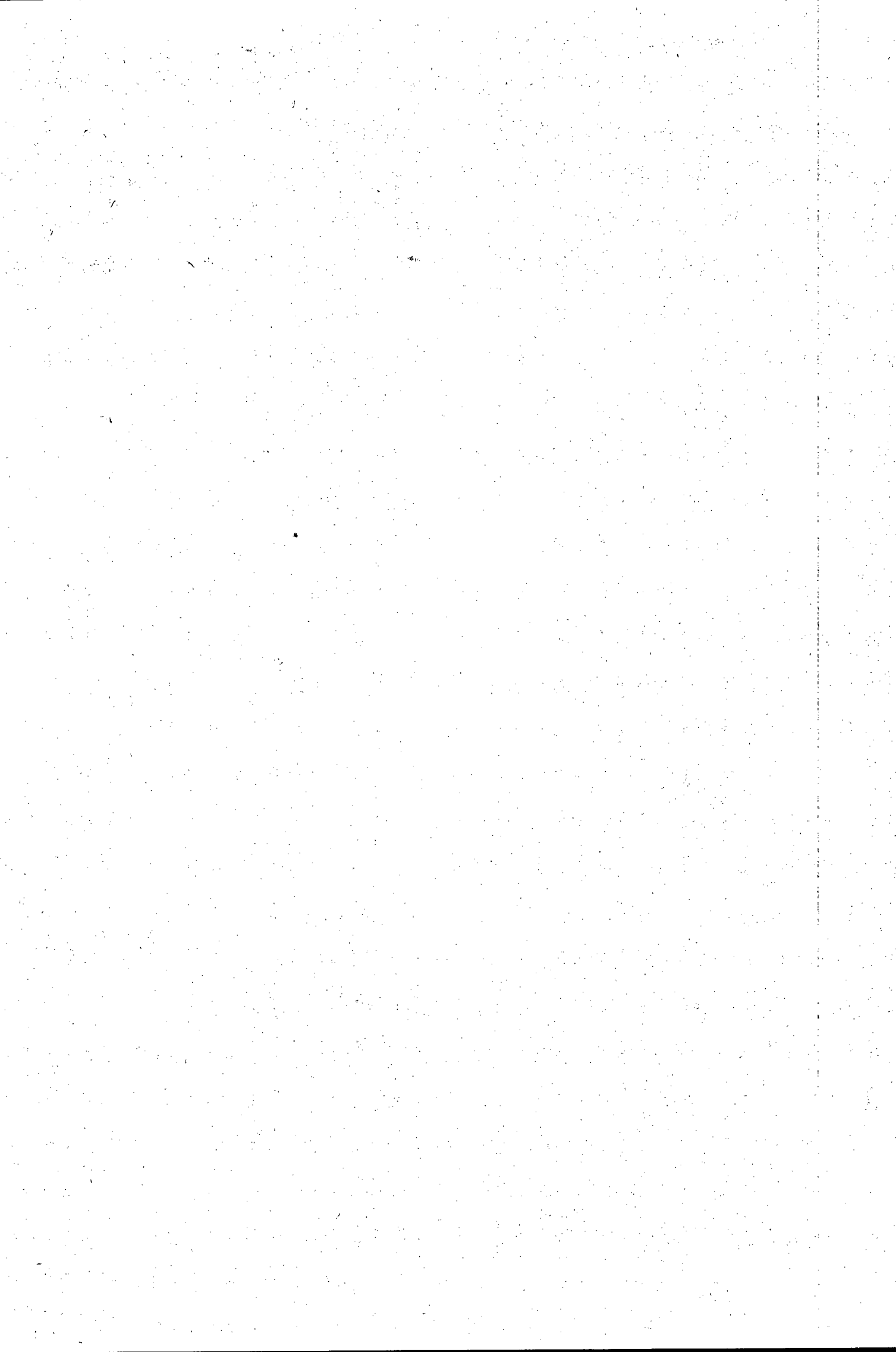


Island of wealth in a sea of poverty

NINAN.

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Chapter 5

THE HABITABLE WORLD:

HUMAN SETTLEMENTS, URBAN WATER SUPPLIES, SOLID WASTE, URBAN POLLUTION AND HEALTH

5.1 THE BASIS FOR ACTION: THE GLOBAL URBAN CRISIS

By the end of this decade, half of the world's population will be living in cities.¹ This represents a doubling of the world's urban population since mid-century, and a tripling since the turn of the century.² Most of this increase has occurred in the developing world.³ Unlike urbanisation in developed countries, which has been coupled to rapid industrial expansion, urbanisation in developing nations has outpaced industrial expansion.⁴ The consequences of this are universal and can, in many instances, be equally applied to cities in the developed world: squatter settlements; overcrowding; inadequate shelter, water and sanitation facilities; growing amounts of uncollected waste; deteriorating air quality; and throngs of unemployed and underemployed people.⁵ In 1988, one quarter of the total urban population lived in poverty.⁶ By the next century, the World Bank predicts that urban poverty will be the most significant and politically explosive problem.⁷

¹ The World Conservation Union, the United Nations Environment Programme & World Wide Fund For Nature (hereafter cited as the IUCN, UNEP, WWF respectively), *Caring for the Earth* (Gland, 1991), p. 104; United Nations (hereafter cited as the UN) Population Division, *World Urbanisation Prospects 1990* (New York, 1991).

² S. Ramphal, *Our Country, The Planet* (Washington D.C: Island Press, 1992), p. 160; UN Population Division, *World Urbanisation Prospects 1990*.

³ Ibid.

⁴ Ramphal, *Our Country, The Planet*, pp. 160-161.

⁵ P. Harrison, *The Third Revolution: Environment, Population and a Sustainable World* (London: I.B. Tauris, 1992), pp. 167-185; Ramphal, *Our Country, The Planet*, pp. 160-163.

⁶ World Bank, *Urban Policy and Economic Development: An Agenda for the 1990s* (Washington, 1992), p. 2.

⁷ Ibid. In light of this concern, it is disturbing to note that urban non-governmental organisations at the UN Conference on Environment and Development highlighted urban poverty as an issue which was "totally inadequately covered" in Agenda 21. See Third World Network, the Forum of Brazilian NGOs, Greenpeace & Friends of the Earth International, "UNCED Ignores Ten Critical Issues", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 11-12.

The bleakness of this reality is heightened by the impacts which urban systems have on the natural environment. Cities are massive consumers of resources. They require large quantities of water, food, energy and raw materials. They generate immense amounts of waste which pollute the environment. And they sprawl over vast tracts of land, destroying the natural vegetation, biota and soil quality. In doing so, the poverty spiral perpetuates itself as increased environmental degradation further diminishes the quality of life for those in urban settlements, particularly women and children.⁸

Urban systems nonetheless generate a substantial proportion of Gross National Product (GNP).⁹ If properly managed, productivity could be sustained, living conditions could improve, and resources could be utilised in a sustainable way. However, low levels of investment by governments and international organisations alike have resulted in mismanaged and deteriorating human settlements.¹⁰ The capabilities of cash-strapped local authorities have further been hindered through over-regulation by national governments.¹¹ In addition, solutions have been sought through individual projects without improving the urban policy and institutional framework.¹² It is this scenario which typifies the global urban crisis.

⁸ D. Dewar, "Cities Under Stress", in *Restoring the Land*, eds M. Ramphel & C. McDowell (London: Panos, 1991), pp. 92-94; Harrison, *The Third Revolution*, pp. 167-185; IUCN, UNEP & WWF, *Caring for the Earth*, p. 104.

⁹ On average, urban settlements are estimated to generate 60% of Gross National Product. See Agenda 21, chapter 7, para. 13.

¹⁰ This is despite the fact that in 1988, every dollar of United Nations Development Programme (hereafter cited as UNDP) technical cooperation expenditure on human settlements generated a follow-up investment of \$122, the highest of all UNDP sectors of assistance. See UNDP, *Reported Investment Commitments Related to UNDP-Assisted Projects* (n.p., 1988). See also Agenda 21, chapter 7, paras 1, 2; and World Bank, *Urban Policy and Economic Development*, p. 2.

¹¹ IUCN, UNEP & WWF, *Caring for the Earth*, p. 105.

¹² World Bank, *Urban Policy and Economic Development*, p. 2.

5.2 THE BASIS FOR ACTION: THE SOUTH AFRICAN URBAN CRISIS

5.2.1 Human Settlements

In virtually every respect, South Africa mirrors and magnifies the global urban crisis. In the early 1900s, less than a quarter of the South African population was classified as urban.¹³ By 1985, the proportion had risen to 57%.¹⁴ By the year 2010, an estimated 70-80% of the population will be living in cities.¹⁵ Presently, some 40-50% of the metropolitan population live below the poverty line.¹⁶

Historically, "separate development" has driven the management of South African cities, and this ideology is largely to blame for the current urban crisis.¹⁷ Through the Group Areas Act, well over three-quarters of a million people were forcibly removed from one part of an urban area to another, chiefly to fulfil schemes for racial segregation.¹⁸ The central objective of separate development was to prevent black urbanisation rather than to create healthy, viable, urban environments.¹⁹ The result is manifested in overcrowded, severely degraded, low-income urban areas and a chronic housing shortage.²⁰ The present backlog of houses is estimated at over one million units.²¹ Over seven million people have consequently established independent informal settlements, mostly without access to safe water or sanitation.²²

¹³ Department of Environment Affairs (hereafter cited as DEA), *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), p. 59.

¹⁴ Urban Foundation, "Policies for a New Urban Future", in *Policy Overview: The Urban Challenge* (Johannesburg, 1990).

¹⁵ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 20.

¹⁶ Dewar, "Cities Under Stress", p. 91.

¹⁷ Ibid. See also F. Wilson & M. Ramphela, *Uprooting Poverty* (Cape Town: David Philip, 1989), pp. 207-216.

¹⁸ Wilson & Ramphela, *Uprooting Poverty*, p. 217.

¹⁹ Dewar, "Cities Under Stress", p. 91; L. Lawson, "The Ghetto and the Greenbelt: The Environmental Crisis in the Urban Areas", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), p. 47; Wilson & Ramphela, *Uprooting Poverty*, pp. 207-216.

²⁰ Wilson & Ramphela, *Uprooting Poverty*, pp. 213-216.

²¹ Urban Foundation, "Policies for a New Urban Future".

²² Ibid. See also N. Mathiane, "Blighted Environment", in *Restoring the Land*, pp. 115-116; and T. Wulfohn & B. Walton, "No Space for Living", in *Restoring the Land*, pp. 106-114.

These problems have been compounded by the fragmented administration created by apartheid,²³ and by the failure of black local authorities to provide adequate infrastructure and services. Authorities have typically suffered from a lack of both revenue and political credibility and as a result, basic services to township areas have deteriorated.²⁴ At present, approximately 20% of the total urban population of 22 million have no access to water facilities;²⁵ 33% have minimal sanitation facilities;²⁶ and 70% of the urban black population have no direct access to electricity.²⁷

In the past decade, land transformed by urbanisation in South Africa has increased from 1.6% to 2.5%.²⁸ This is most evident in the sprawling, fragmented, amorphous cities peculiar to this country. South African cities are additionally characterised by uncontrolled low-density housing developments. As a result, valuable agricultural land is often appropriated as is natural vegetation. Little, if any, environmental input precedes these developments.²⁹

5.2.2 Urban Water Supplies³⁰

As a dry country, water scarcity is clearly one of South Africa's greatest concerns. Rapid urbanisation and industrialisation are placing increasing demands on water resources, to the extent that by the year 2020, overall demand is predicted to

²³ See for example, Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), pp. 17-18; E. Schwella & J.J. Muller, "Environmental Administration" in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 79; and Wulfsohn & Walton, "No Space for Living", p. 104.

²⁴ L. Abrams, *The Rural Development Crisis* (Johannesburg: Rural Advice Centre, 1992), pp. 6-7; Lawson, "The Ghetto and the Greenbelt", pp. 50-62; President's Council, *Report of the Three Committees...*, p. 21; Wilson & Ramphele, *Uprooting Poverty*, p. 322; Wulfsohn & Walton, "No Space for Living", p. 104.

²⁵ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 67. See also, V. Munnik, "Water for All", *New Ground*, no. 7 (Autumn 1991/92), pp. 15-17.

²⁶ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 67.

²⁷ K. de Selincourt, "South Africa takes the Apartheid out of Power", *New Scientist*, 7 September 1991, pp. 25-26; P. Theron, A.A. Eberhard & C. Dingley, "The Provision of Electricity in Urban Areas of South Africa: Towards a New Policy Framework", *Urban Forum* 2(2) (1992), p. 1.

²⁸ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 93; I.A.W. Macdonald, "Man's Role in Changing the Face of Southern Africa", in *Biotic Diversity in Southern Africa*, ed. B.J. Huntley (Cape Town: Oxford University Press, 1989), p. 58.

²⁹ Dewar, "Cities Under Stress", pp. 92-94; President's Council, *Report of the Three Committees...*, p. 21.

³⁰ See also Chapter 6 of this dissertation.

outstrip conventional supply sources.³¹ Despite the severity of this situation, there is little effective management of its use.³² Water quality is similarly declining due to industrial dumping, poor urban land management, and inadequate management of sewage disposal and stormwater run-off.³³ As a result, the health of people utilising the water as well as ecosystems providing and receiving the water, is often jeopardised.

5.2.3 Sewage and Solid Waste Management ³⁴

South Africa produces close to 420 million tons of solid waste per year³⁵. The bulk of this is generated in cities by industries, consumerist lifestyles, and rapidly expanding populations. The absence of an official policy on waste management, together with fragmented responsibilities in various government departments, has resulted in a severely inadequate waste management system.³⁶ Environmental degradation and detrimental health effects on communities living near disposal sites have been the outcome.³⁷ These effects are exaggerated in squatter communities which often have no waste removal services or basic sanitation.³⁸

5.2.4 Urban Pollution and Health ³⁹

Air pollution levels in parts of South Africa are comparable to some of the worst in the world.⁴⁰ In the cities, industrial and vehicle emissions are the greatest

³¹ President's Council, *Report of the Three Committees...*, p. 33.

³² *Ibid.*, p. 36. See also Dewar, "Cities Under Stress", p. 95.

³³ Dewar, "Cities Under Stress", pp. 95-97. See also Lawson, "The Ghetto and the Greenbelt", pp. 48-62; and Mathiane, "Blighted Environment", pp. 115-116.

³⁴ See also Chapter 8 of this dissertation.

³⁵ DEA, *Hazardous Waste in South Africa*, Vol. 1: *Situation Analysis*, ed. R.G. Noble (Pretoria: CSIR, 1992), p. 10.

³⁶ *Ibid.*, p. 81; Lawson, "The Ghetto and the Greenbelt", pp. 48-62; R. Lombard, L. Botha & M.A. Rabie, "Solid Waste", in *Environmental Management in South Africa*, pp. 493-522.

³⁷ See for example, Lawson, "The Ghetto and the Greenbelt", pp. 60-61; and V. Quinlan, "Hold Onto Your Nostrils", *New Ground*, no. 5 (1991), pp. 40-41.

³⁸ See for example, F. Khan, "Environmental Sanitation", in *Restoring the Land*, pp. 132-138.

³⁹ See also Chapter 4 of this dissertation.

⁴⁰ A. Durning, "Apartheid's Environmental Toll", *Worldwatch Paper*, no. 95 (1990); P. Tyson et al., "Atmospheric Pollution and its Implications in the Eastern Transvaal Highveld", South African National Scientific Programmes Report no. 150, 1988.

contributors, constituting serious health hazards when concentrated.⁴¹ In several urban townships and squatter camps, local pollution derives from a lack of electricity and subsequent use of coal for cooking and heating.⁴² Some of these settlements represent the most severely polluted environments in South Africa. Air pollution levels in Soweto, for example, exceed the World Health Organisation's maximum levels, with clear detrimental effects to the health of local inhabitants.⁴³ Additional health concerns in townships derive directly from the inadequate provision of services such as refuse removal.⁴⁴

5.2.5 Urban Transport

As well as consuming vast areas of land, urban development in South Africa has also resulted in highly inefficient and inequitable transport systems. The building of urban freeways has, until recently, been given priority over investments which could facilitate a more effective public transport system.⁴⁵ This has favoured those privileged enough to have private transport, whilst resulting in large numbers of motor vehicles on the roads, increased levels of air pollution, and greater use of fossil fuels. The inequity of transport systems in South Africa is further underscored by the remote siting of townships, characteristically removed from the city centre and places of employment.⁴⁶ As a result, people spend a large proportion of their income and time commuting. Added to this are the impacts on the environment levied by long-distance commuting.

⁴¹ See for example, DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 63-70, 83-86; and Y. Von Schirnding, "Environmental Lead Exposure Amongst Inner City Cape Town Children: A Study of Associated Risk Factors" (Ph.D. dissertation, University of Cape Town, 1988).

⁴² DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 67, 83-86; E. Kgomo, "Smoke Over Soweto", in *Restoring the Land*, pp. 117-123; Lawson, "The Ghetto and the Greenbelt", pp. 56-57.

⁴³ B. Bayman, "Mesoscale Air Quality Over Soweto", paper presented in the Department of Geography and Environmental Studies, University of Witwatersrand, 1990, cited by Kgomo "Smoke Over Soweto", p. 120.

⁴⁴ Lawson, "The Ghetto and the Greenbelt", pp. 48-62; Mathiane, "Blighted Environment", pp. 115-116.

⁴⁵ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 75.

⁴⁶ Dewar, "Cities Under Stress", pp. 93-94; Lawson, "The Ghetto and the Greenbelt", p. 61.

5.3 AGENDA 21: HUMAN SETTLEMENTS, URBAN WATER SUPPLIES, SOLID WASTE, URBAN POLLUTION AND HEALTH

Agenda 21 considers human settlements in eight programme areas, summaries of which are provided in Boxes 8 and 9. Urban water supplies (Box 10), solid waste management (Box 11), and urban pollution and health (Box 12) are included under separate chapters in Agenda 21 but have been incorporated here for better integration. Common themes underlying waste management in Agenda 21 are described in Chapter 8 of this dissertation (Box 26).

The "enabling approach" is the prevalent strategy upheld by Agenda 21 with regard to human settlements management.⁴⁷ This approach advocates promoting public and private sector investment to subsequently generate the internal resources needed to improve people's living and working environments. Another strong theme which underlies all programme areas is the need for cooperation, partnership and the full participation of all sectors in decision-making processes.

BOX 8. SUSTAINABLE HUMAN SETTLEMENTS ⁴⁸	
PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
PROVIDING ADEQUATE SHEL- TER FOR ALL \$75 billion (\$10 billion from the international com- munity on grant or concessional terms)	Countries should: <ul style="list-style-type: none"> ● take immediate measures to provide shelter to their homeless poor; ● adopt environmentally compatible national shelter strategies, based on the Global Strategy for Shelter to the Year 2000, and legislation to protect people against unfair eviction; ● support shelter efforts of the poor by facilitating access to land, housing and finance schemes and low-cost building materials and promoting the upgrading of informal settlements; ● implement resettlement programmes to address the problems of displaced populations and reduce the impact of rural to urban drift.

⁴⁷ See Agenda 21, chapter 7, paras 1, 2, 3.

⁴⁸ Agenda 21, chapter 7.

<p>IMPROVING HUMAN SETTLEMENT MANAGEMENT</p> <p>\$100 billion (\$15 billion from the international community on grant or concessional terms)</p>	<p>Governments, with the assistance of NGOs and local authorities should:</p> <ul style="list-style-type: none"> ● develop guidelines for urban management in the areas of land, urban environment, infrastructure and municipal finance and administration; ● accelerate efforts to reduce urban poverty through generating employment for the urban poor, supporting economic activities in the informal sector, supporting non-government and local initiatives, and by creating social infrastructure to reduce hunger and homelessness; ● adopt innovative city planning strategies which improve services and infrastructure in poorer areas and reduce subsidies on services in higher income neighbourhoods; ● implement strategies towards the development of intermediate cities that create employment opportunities in the rural areas and support rural-based economic activities. <p>Individual cities should:</p> <ul style="list-style-type: none"> ● institutionalise a participatory approach to sustainable urban development that promotes continuous dialogue between the public sector, the private sector and local communities; ● promote social organisation and environmental awareness through the participation of local communities in the identification of public services needs; ● promote the formulation of environmentally sound and culturally sensitive tourism programmes; ● mobilise resources for local initiatives to improve environmental quality and empower community groups to assume the authority and responsibility for managing and enhancing their immediate environment. <ul style="list-style-type: none"> ● The UN Urban Management Programme should be extended to all interested countries during the period 1993-2000.
<p>PROMOTING SUSTAINABLE LAND-USE PLANNING AND MANAGEMENT</p> <p>\$3 billion (\$300 million from the international community on grant or concessional terms)</p>	<p>Countries should initially undertake an inventory of their land resources, classify them according to most appropriate uses, and subsequently develop land-resource management plans which:</p> <ul style="list-style-type: none"> ● establish legislation to guide the implementation of public policies; ● create accessible land markets that meet community development needs; ● develop incentives and control measures for the environmentally sound use of land; ● establish appropriate forms of land tenure that provide security of tenure for all land-users; ● integrate conflicting land-use demands and reflect the needs of all sectors of the population, particularly the disadvantaged; ● encourage partnerships among the public, private and community sectors; and ● promote understanding among policy makers of the adverse consequences of unplanned settlements in environmentally vulnerable areas.
<p>PROMOTING SUSTAINABLE ENERGY AND TRANSPORT SYSTEMS IN HUMAN SETTLEMENTS</p> <p>(see Chapter 11 of this dissertation, Box 44 for principal activities and cost)</p>	<p>Countries should:</p> <ul style="list-style-type: none"> ● formulate national action programmes to promote reforestation and renewable energy technologies, particularly the use of solar, wind, biomass and hydro sources; ● integrate land-use and transportation planning to encourage development patterns that reduce transport demand; ● adopt urban transport programmes favouring mass-occupancy public transport; ● encourage non-motorised transport by providing safe cycle- and footways; and ● re-evaluate present consumption and production patterns to reduce the use of energy and resources.

<p>PROMOTING HUMAN SETTLEMENT PLANNING AND MANAGEMENT IN DISASTER-PRONE AREAS</p> <p>\$50 million from the international community on grant or concessional terms</p>	<p>A "culture of safety" should be promoted in countries by:</p> <ul style="list-style-type: none"> ● implementing awareness campaigns and completing studies on natural disasters and their impact on people and economic activities; ● strengthening early warning systems to alert populations to impending disasters; ● rehabilitating industrial disaster areas and restructuring economic activities which promote job opportunities in environmentally sound sectors; ● developing and enforcing strict environmental control standards; and ● promoting close collaboration between government, NGOs, local authorities and local communities. <p>Pre-disaster planning should form an integral part of human settlement planning and should include:</p> <ul style="list-style-type: none"> ● research into risk and vulnerability of human settlements and the development of tools to encourage disaster-sensitive development; ● the redirection of new developments to areas not prone to hazards; and ● the development of training programmes for contractors, builders, managers, NGOs and community groups covering aspects of disaster mitigation.
<p>PROMOTING SUSTAINABLE CONSTRUCTION INDUSTRY ACTIVITIES</p> <p>\$40 billion (\$4 billion from the international community on grant or concessional terms)</p>	<p>All countries should:</p> <ul style="list-style-type: none"> ● support industries using local materials, energy-efficient designs and technologies, and labour-intensive construction methods; ● technically and financially support small-scale operatives making use of local resources; ● formulate land-use policies and planning regulations which protect environmentally sensitive zones against physical disruption by construction; ● adopt measures which increase the affordability of building materials for the poor; ● develop and disseminate databases, on the adverse environmental effects of building materials and share technologies and experiences; ● use economic instruments to discourage the use of non-renewable resources and polluting construction materials.
<p>HUMAN RESOURCE DEVELOPMENT AND CAPACITY BUILDING</p> <p>\$65 million from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● The capacity of all actors in human settlement development, particularly indigenous people and women, should be enhanced. ● Countries should create an enabling policy environment which supports the partnership between public, private and community sectors. ● By the year 2000, there should be a substantial improvement in the efficiency of governmental activities.

BOX 9. PROMOTING THE INTEGRATED PROVISION OF ENVIRONMENTAL INFRASTRUCTURE: WATER, SANITATION, DRAINAGE AND SOLID-WASTE MANAGEMENT ⁴⁹

- All countries should assess the environmental suitability of infrastructure (water supply, sanitation, drainage, solid-waste management) and implement environmentally sound technology to ensure that the environment, human health and quality of life are protected.
- An integrated approach to the provision of these services should be adopted for all urban areas, including informal settlements. Standards and regulations should be adapted to the living conditions and resources of the communities to be served.
- Countries should integrate infrastructure and environmental planning by the year 2000 so that they can provide such facilities by the year 2025.

The following principles should underly the provision of environmental infrastructure:

- policies adopted should minimise or avoid environmental damage;
 - decisions should be preceded by environmental impact assessments; and
 - development should be promoted in accordance with indigenous practices and adapted to local conditions.
- The cost of implementing these activities is mostly covered by other programmes. The total annual cost of technical assistance is estimated at \$50 million from the international community on grant or concessional terms.

⁴⁹ Agenda 21, chapter 7, programme area (d).

BOX 10. URBAN WATER SUPPLIES⁵⁰

Governments, with the cooperation of relevant organisations, should:

- protect water resources from depletion and degradation through the protection of watersheds, control of sources of pollution, introduction of environmentally sound sanitary waste disposal facilities, stormwater runoff and drainage programmes, managing agrochemicals, and promoting the reuse and recycling of waste water and solid wastes;
 - ensure that water resources are efficiently and equitably allocated, and that basic water needs are satisfied - water tariffs could be introduced where affordable;
 - initiate institutional reforms which utilise the skills and potential of NGOs, the private sector and local people and ensure that the needs of presently unserved populations are reflected in urban development planning;
 - promote public participation and increase awareness among the public about the value of water, in order to encourage its rational use and protect its quality;
 - develop legislation to promote investments in water and waste management, and encourage the viability of autonomous water, waste and sewerage utilities;
 - enhance access of the poor to sanitation services through low-cost, upgradable water-supply and sanitation technologies;
 - ensure that all urban residents have access to at least 40 litres of safe water per person per day, and that 75% are provided with facilities for sanitation by the year 2000;
 - establish discharge standards for municipal and industrial effluent by the year 2000; and
 - ensure that 75% of urban solid waste is collected, recycled or disposed of in an environmentally safe way.
- The total annual cost of implementing these activities is estimated at \$20 billion, including \$4.5 billion from the international community on grant or concessional terms.

⁵⁰ Agenda 21, chapter 18, programme area (e).

BOX 11. ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTE⁵¹

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>MINIMISING WASTES</p> <p>1% of expenditure on solid waste and sewage disposal (approximately \$6.5 billion annually)</p>	<p>Governments, with the collaboration of NGOs and consumer groups should initiate programmes which:</p> <ul style="list-style-type: none"> ● develop plans to minimise waste generation; and ● establish targets for waste reduction that focus on changes in lifestyle and provide incentives to reduce unsustainable patterns of production and consumption. ● By the year 2000, governments should have in place the policies, capacities and programmes to access, process and monitor waste-trend information. Industrialised countries in particular should ensure waste minimisation, reduce per capita wastes and reduce the production of agrochemical wastes and packaging.
<p>MAXIMISING ENVIRONMENTALLY SOUND WASTE REUSE AND RECYCLING</p> <p>1% of waste-related municipal expenditures; total annual cost estimated at \$8 billion (\$850 million for developing countries on grant or concessional terms)</p>	<p>Governments, NGOs and concerned groups should launch programmes which:</p> <ul style="list-style-type: none"> ● demonstrate waste reuse and recycling; ● strengthen national capacities to reuse and recycle wastes; ● review existing policies to provide incentives to support reuse and recycling; ● modify existing standards to avoid discrimination against recycled materials; and ● develop public education and awareness programmes to promote the use of recycled products. ● National programmes for waste reuse and recycling should be in place by 2000 in industrialised countries, and by 2010 in developing countries.
<p>PROMOTING ENVIRONMENTALLY SOUND WASTE DISPOSAL AND TREATMENT</p> <p>\$15 billion in developing countries (including \$3.4 billion from the international community on grant or concessional terms)</p>	<p>Governments, NGOs and industries, in collaboration with the UN, should:</p> <ul style="list-style-type: none"> ● launch programmes to improve the control and management of waste disposal and treatment; ● strengthen national capacities and seek waste disposal solutions as close as possible to the source; ● elaborate criteria, objectives and standards for the treatment and disposal of solid waste by the year 2000; ● dispose of at least half of all sewage, waste waters and solid wastes according to national/international guidelines by 1995 and 2005 in industrialised and developing countries respectively; and ● dispose of all sewage, waste waters and solid wastes according to international quality guidelines by the year 2025.
<p>EXTENDING WASTE SERVICE COVERAGE</p> <p>\$7.5 billion (including \$2.6 billion from the international community on grant or concessional terms)</p>	<p>Governments and relevant organisations should:</p> <ul style="list-style-type: none"> ● establish financing mechanisms for waste management service development in deprived areas; ● apply the "polluter pays" principle where appropriate; ● institutionalise community participation in planning and implementation procedures; ● have the necessary technical, financial and human resource capacity to provide health-protecting, environmentally safe waste collection services by the year 2000; and ● provide full waste services in all urban areas and extend sanitation services to rural areas by the year 2025.

⁵¹Agenda 21, chapter 21.

BOX 12. PROTECTION AND PROMOTION OF URBAN HUMAN HEALTH⁵²	
PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>MEETING THE URBAN HEALTH CHALLENGE</p> <p>\$222 million (\$22 million from the international community on grant or concessional terms)</p>	<p>Local authorities, with the support of governments, should:</p> <ul style="list-style-type: none"> ● develop and implement local health plans and enabling strategies which emphasise "doing with" rather than "doing for"; ● ensure that public health education is provided to all and that health services are strengthened; ● establish intersectoral committees at both the political and technical level, and set up "healthy city" networks; and ● work towards achieving the global objective of a 10-40% improvement in health, housing and environmental indicators by the year 2000.
<p>REDUCING HEALTH RISKS FROM ENVIRONMENTAL POLLUTION AND HAZARDS</p> <p>\$3 billion (including \$115 million from the international community on grant or concessional terms)</p>	<p>National-determined action plans to minimise the hazards from pollution of the environment, workplace and homes should include:</p> <ul style="list-style-type: none"> ● the development of pollution control technology to improve solid waste disposal and reduce water and air pollution, including indoor pollution; ● the provision of incentives to install appropriate technologies; ● the development of air and water pollution, and solid waste disposal capacities in large cities; ● the development and implementation of health educating campaigns to reduce the health impact of domestic use of biomass and coal; ● the minimisation and control of pesticide use; ● the monitoring of noise pollution and development of criteria for safe exposure levels; ● the development of legislation for radiation standards; ● an investigation into the health effects of ultraviolet radiation; ● the establishment of health risk analyses and hygiene programmes in all industries, and introduction of environmentally sound technologies; ● an emphasis on preventive strategies to reduce occupationally derived diseases; and ● the development of new methods to assess health costs and benefits associated with different pollution control strategies. <ul style="list-style-type: none"> ● Environmental and health safeguards should be incorporated into national development programmes by the year 2000. ● Integrated programmes for tackling pollution at the source and disposal site should be established by the year 2000.

⁵² Agenda 21, chapter 6, programme area (d).

5.4 IMPLICATIONS FOR SOUTH AFRICA

Many of Agenda 21's proposals which relate to human settlements are in line with urban priorities in South Africa. Most political parties, for example, are cognisant of the critical need to redress urban planning failings, and provide housing and basic services to the urban poor.⁵³ The government's housing policy, however, is virtually non-existent. Inadequate, short-term, site-and-service settlements are provided, rather than shelter. The process is highly impersonal and mechanistic, with little community consultation as to their needs.⁵⁴ For the African National Congress (ANC), sustainability in the long term is at the core of its housing policy, as is community control and participation in the housing delivery service.⁵⁵ The Pan Africanist Congress (PAC) similarly recognises the crucial input of local communities and aims to find a balance between environmental planning and basic needs.⁵⁶ The Inkatha Freedom Party (IFP) strives to ensure that the attainment of basic needs for all is not at the expense of the natural environment.⁵⁷ Agenda 21 emphasises the need to provide shelter, and to promote the participation and empowerment of community groups in managing their immediate environment.

Without support from the state, decent housing for the vast majority is improbable.⁵⁸ To this end, Agenda 21 endorses the UN Global Strategy for Shelter to the year 2000.⁵⁹ This strategy emphasises an enabling approach, whereby governments provide a facilitating legal, institutional, regulatory and infrastructural environment to encourage people to develop their own dwellings. Agenda 21 further emphasises the

⁵³ See for example, African National Congress (hereafter cited as the ANC), *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, pp. 33-36; B. Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", *History in the Making* 3(1) (1991), p. 47; Inkatha Freedom Party (hereafter cited as the IFP), "Environmental Policy of the Inkatha Freedom Party", *History in the Making* 3(1), p. 50; and President's Council, *Report of the Three Committees...*, pp. 20-22.

⁵⁴ J. Adler & R. Viljoen, "Site and Service Settlements: Incipient Disaster or Sustainable Solution?", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa", Pietermaritzburg, 14-18 September 1992; Wilson & Ramphele, *Uprooting Poverty*, p. 334.

⁵⁵ ANC, *Ready to Govern...*, pp. 33-36.

⁵⁶ Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", p. 47.

⁵⁷ IFP, "Environmental Policy of the Inkatha Freedom Party", p. 50.

⁵⁸ Wilson & Ramphele, *Uprooting Poverty*, p. 333.

⁵⁹ Agenda 21, chapter 7, paras 7, 9(b).

need for partnerships between national and local governments to further human settlement goals. It specifically calls on local governments to undertake a consultative process with their populations and achieve consensus on a local Agenda 21 for the community.⁶⁰ These goals encapsulate the urban challenge in South Africa.

Mobilising the financial resources to attain these objectives will, above all, require innovative planning strategies. Both Agenda 21 and the ANC,⁶¹ for example, promote redistributive financial mechanisms such as the reduction of subsidies on services in higher income neighbourhoods to fund services in poorer areas. Agenda 21 proposals to support labour-intensive, energy efficient, local construction activities and cheap building materials are similarly echoed by ANC policy.⁶² ANC housing policy does not, however, specifically address the need to discourage the use of non-renewable, polluting construction materials. Agenda 21 and ANC policy⁶³ concur as to the need for governments to create accessible land markets and establish appropriate forms of land tenure. What requires attention is Agenda 21's appeal to governments to develop incentives and control measures for the environmentally sound use of land.

Agenda 21's articulation of the need to protect water resources, satisfy basic needs, and simultaneously ensure that water distribution is equitable and efficient, should be seriously heeded in South Africa. The problem is well recognised by most political groupings⁶⁴ yet little action has been taken. Better management of urban water resources and public awareness campaigns to educate people to practise water conservation are remedies which could be effected immediately.⁶⁵

Efficient, environmentally sound waste management, as promoted by Agenda 21, is another area in which practical action could be taken. Although recycling initiatives in South Africa are expanding, national capacities to reduce, reuse and recycle waste

⁶⁰ See Chapter 9, Box 36 of this dissertation.

⁶¹ ANC, *Ready to Govern...*, p. 35.

⁶² *Ibid.*

⁶³ *Ibid.*, pp. 35-36.

⁶⁴ See for example ANC, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy" (n.p., n.d.); IFP, "Environmental Policy of the Inkatha Freedom Party", p. 51; and President's Council, *Report of the Three Committees...*, p. 31-47.

⁶⁵ See Chapter 6 of this dissertation for a fuller discussion of water.

could be considerably strengthened.⁶⁶ Similarly, the provision of incentives and the removal of standards which discriminate against recycled materials would accelerate present initiatives. The declaration of a policy on waste management would support these actions and address present health and environmental concerns.⁶⁷

Many of Agenda 21's proposals concerning urban pollution and health are receiving attention in South Africa, albeit to a limited extent. For example, the electrification of all types of settlement in Soweto has been designated a priority by Eskom.⁶⁸ Simultaneous steps have not, however, been taken to remove sulphur or nitrogen oxides from power station emissions.⁶⁹ This is offset to some extent by chemical trade unions becoming better informed about the dangers of air pollution and actively seeking to improve health and safety standards within the industry.⁷⁰ Overall, however, few incentives exist to encourage a shift to renewable energy sources or to install appropriate technologies.⁷¹

Finally, Agenda 21 underscores the need for governments to integrate land-use and transportation planning and encourage mass-occupancy public transport. In doing so, South Africa will need to redirect planning strategies towards more compact and efficient cities. In addition, investment should be channelled towards public transport systems which serve the movement needs of all urban residents.

In conclusion, the actions proposed in Agenda 21, if implemented, will go a long way towards creating more sustainable urban environments. Fortunately, South Africa is better placed than most other developing countries in having strong technological and management capacities. Furthermore, many of the issues are of direct relevance to, and are indeed being addressed by, civic organisations and trade unions. Two further steps

⁶⁶ President's Council, *Report of the Three Committees...*, p. 97. See also V. Munnik, "Talking Rubbish Pays", *New Ground*, no. 5 (Spring 1991), pp. 2-5.

⁶⁷ See Chapter 8 of this dissertation for a more complete discussion of waste.

⁶⁸ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 75; P. Theron, "Electrification and the Environment", *New Ground*, no. 9 (Spring 1992), pp. 26-27.

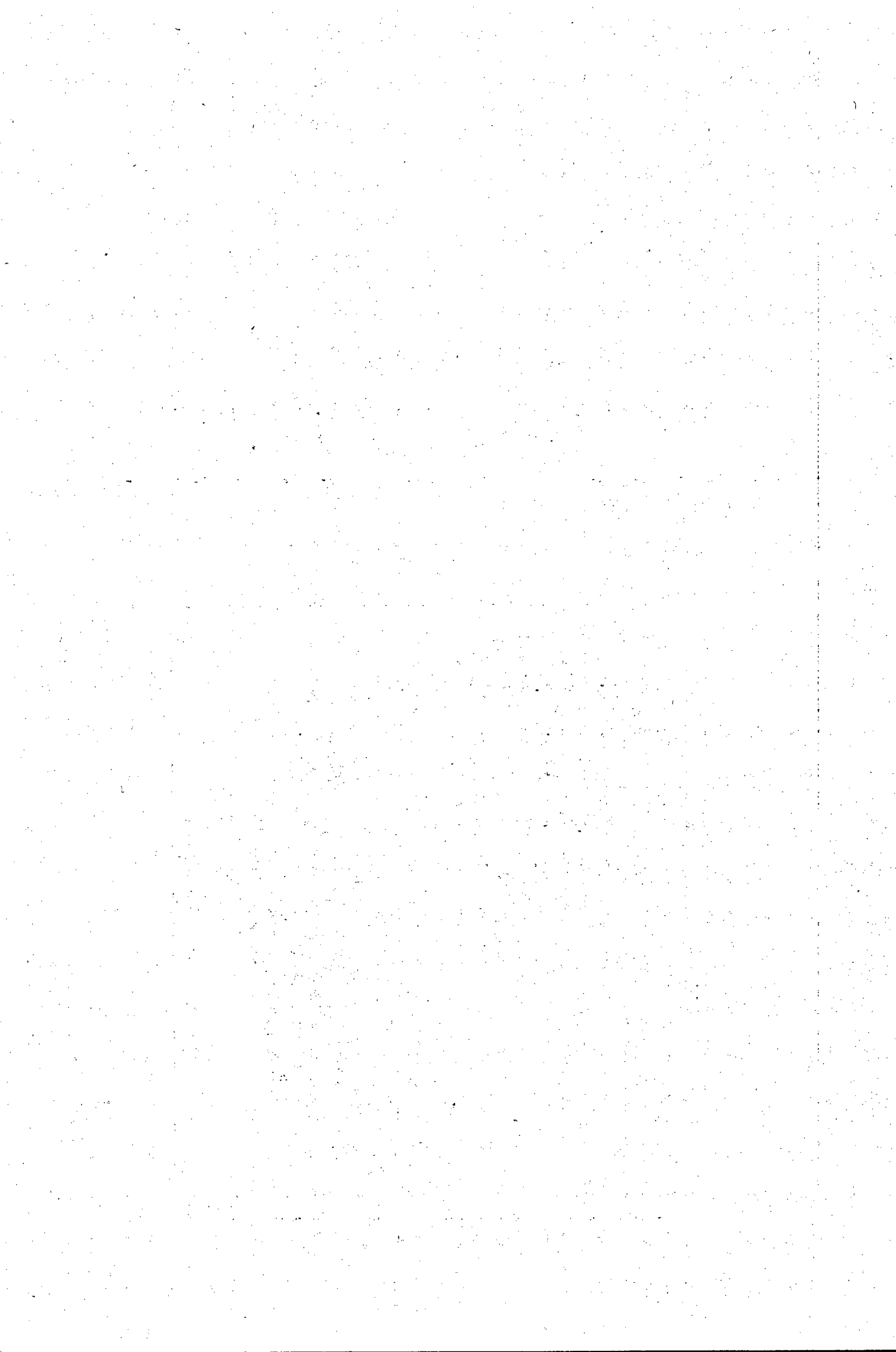
⁶⁹ Theron, "Electrification and the Environment", p. 28.

⁷⁰ See for example, R. Crompton & A. Erwin, "Reds and Greens: Labour and the Environment", in *Going Green*, p. 83.

⁷¹ See Chapter 11 of this dissertation.

are necessary. Firstly, the connection between urbanisation and a healthy, safe environment requires recognition by the general public and consequent action. Secondly, a democratic government needs to be in place so that authorities are accountable and responsive to the communities they serve.

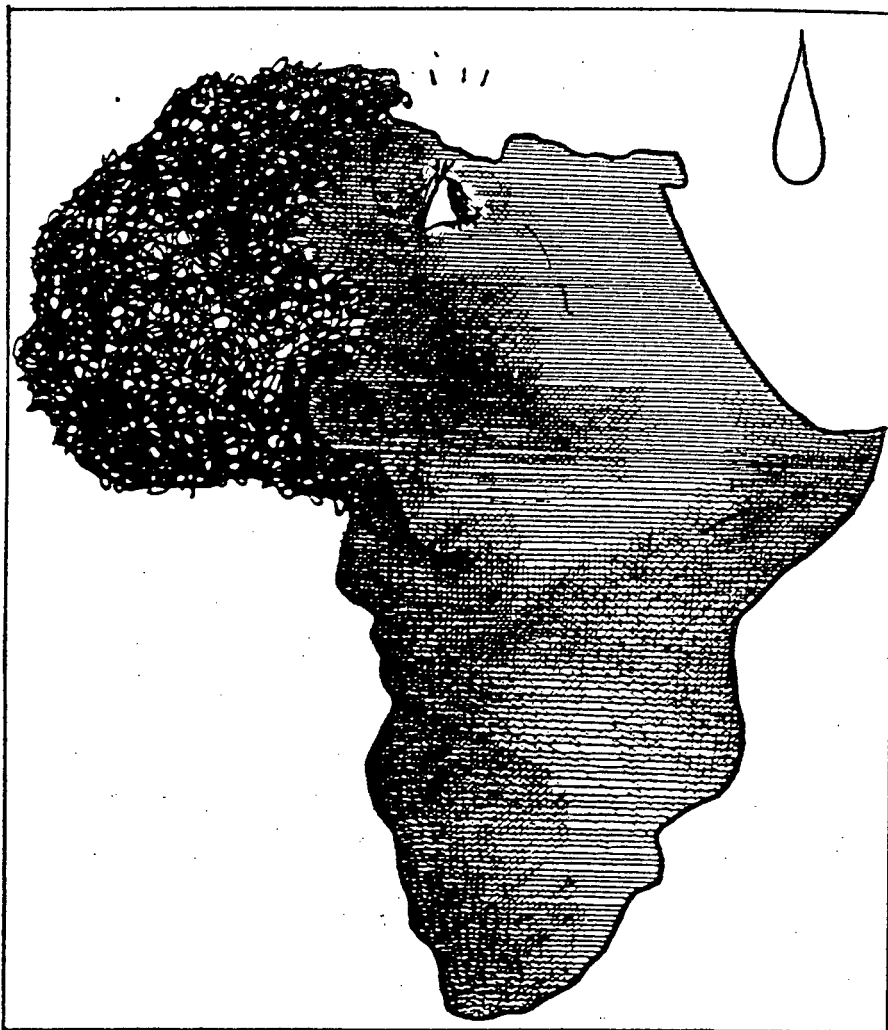
This concludes Chapter 5 which has outlined the urban crisis, described respective Agenda 21 proposals and compared these proposals to the present situation in South Africa. Chapter 6 will consider those sections of Agenda 21 which deal with patterns of land and water use. Chapter 6 additionally includes an analysis of the UNCED statement of principles for forests. □

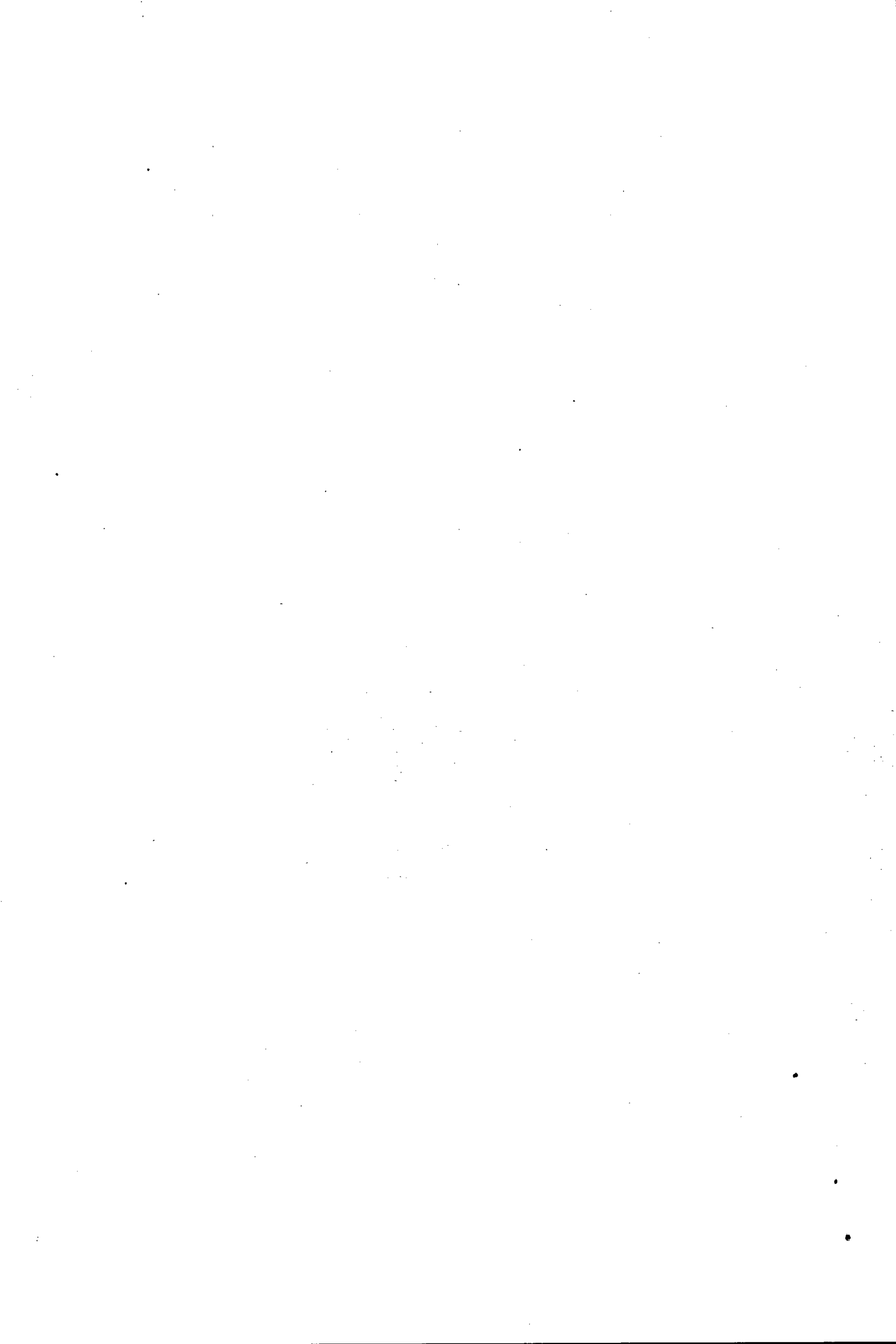


Chapter 6

THE FERTILE WORLD:

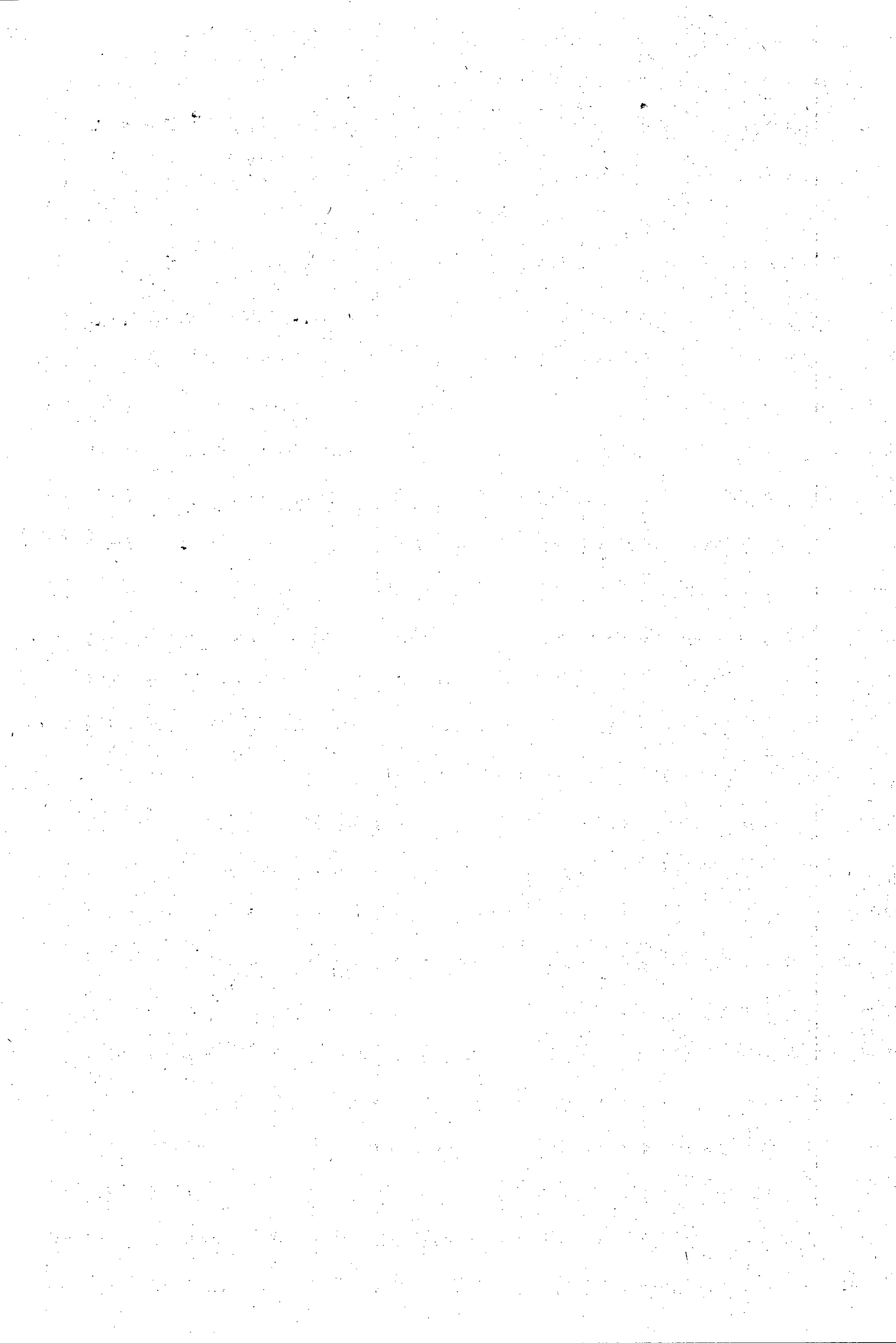
FRESHWATER RESOURCES, AGRICULTURE, FORESTS,
DESERTIFICATION AND DROUGHT





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Chapter 6

THE FERTILE WORLD:

FRESHWATER RESOURCES, AGRICULTURE, FORESTS, DESERTIFICATION AND DROUGHT

6.1 THE BASIS FOR ACTION: GLOBAL PATTERNS OF LAND AND WATER USE

Land degeneration is the most visible form of environmental degradation and perhaps the most critical. There are 15.9 billion hectares (ha) of land on earth, of which 4.1 billion ha are covered by forestland, 3.1 billion ha by grassland, 1.5 billion ha by arable land, and the remainder by ice, desert, stone or mountainous terrain.¹ Unequal resource distribution, burgeoning populations and escalating consumer demands are placing increasing stress upon existing land resources.² Deforestation, soil erosion, siltation, waterlogging, salinisation, pollution, desertification, the loss of biological diversity and a deterioration in both the quality and quantity of water are some of the consequences.³

6.1.1 Water

Water is critical both for life on earth and for socio-economic development. Its distribution, however, is extremely uneven. Two billion people in 80 countries live with water shortages and are constantly on the threshold of drought.⁴ As populations increase, similar problems of scarcity will face those countries where water is more abundant. With present patterns of use, global demand will outstrip supply when the

¹ N. Mathews, *Land Use is Becoming an Intensely Political Question* (Paris: UNESCO, 1992), p. 1.

² *Ibid.*, pp. 1-3.

³ *Ibid.*

⁴ S. Ramphal, *Our Country, The Planet* (Washington D.C: Island Press, 1992), pp. 44-45.

population doubles, possibly within 30 years.⁵ Climate change, particularly in arid and semi-arid regions, is likely to exacerbate this problem as evaporation increases and rainfall patterns change.⁶

Averaged globally, 21% of freshwater resources is utilised by industry⁷ and 6% by domestic consumption,⁸ whilst agriculture accounts for 73% of global water use.⁹ Since the turn of the century, there has been a five-fold increase in irrigated land area.¹⁰ Presently, some 270 million ha are irrigated worldwide.¹¹ Although these areas are estimated to supply one-third of the world's food,¹² much of the water supplied for irrigation is used inefficiently: often more than 60% never reaches the crops.¹³

Problems of water scarcity are aggravated by worldwide declines in water quality due to pollution and misuse of water and land.¹⁴ As well as threatening freshwater ecosystems, fouled water poses a major health hazard in many developing countries. An estimated 80% of all diseases and over one-third of all deaths in developing countries are caused by waterborne pathogens.¹⁵ Approximately half of the population of the developing world do not have safe drinking water.¹⁶ And where clean water is lacking, so too are sanitation facilities.¹⁷ Where there is no proper sanitation, human waste pollutes the sources from which people draw their water, and so the cycle continues.

⁵ D.H. Meadows, D.L. Meadows & J. Randers, *Beyond the Limits* (London: Earthscan, 1992), p. 56.

⁶ The World Conservation Union, the United Nations Environment Programme and the World Wide Fund For Nature (hereafter cited as the IUCN, UNEP and WWF respectively) estimate that a 1° to 2°C temperature increase, coupled with a 10% reduction in precipitation could reduce annual runoff by 40-70%. See *Caring for the Earth* (Gland, 1991), p. 138. See also Chapter 11 of this dissertation.

⁷ Agenda 21, chapter 18, para. 6.

⁸ *Ibid.*

⁹ *Ibid.* See also IUCN, UNEP & WWF, *Caring for the Earth*, p. 137.

¹⁰ Ramphal, *Our Country, The Planet*, pp. 45-46.

¹¹ *Ibid.*, p. 46.

¹² IUCN, UNEP & WWF, *Caring for the Earth*, p. 137.

¹³ *Ibid.*

¹⁴ *Ibid.*, p. 138. See also Ramphal, *Our Country, The Planet*, pp. 49-52.

¹⁵ Agenda 21, chapter 18, para. 47.

¹⁶ Ramphal, *Our Country, The Planet*, pp. 51-52.

¹⁷ *Ibid.*

6.1.2 Agriculture

In 1980, UNICEF estimated that 730 million people (16% of the world population) were "chronically deprived of the food necessary to enjoy an active life".¹⁸ By 1990, the numbers had increased to 950 million, or 19%.¹⁹ Yet the total amount of global food produced, although currently declining,²⁰ is thought to be sufficient to adequately feed the present world population.²¹ Why then are people starving?

The crisis stems from a complex web of factors. Corporate-based agriculture, as a major contributor to export earnings in developing countries, is often the backbone of their national economies.²² As a result, there is an increased emphasis on export crops and a concurrent diversion of agricultural activity away from the production of locally needed food crops.²³ Subsistence farming is consequently declining on a wide scale, whilst dependence on imported foods is increasing.²⁴ Food has thus become a commodity which people are often too poor to afford.²⁵

Where subsistence farming does occur, it is often in the more fragile regions of the Earth where the great majority of the poor exist.²⁶ Frequently, this is because more fertile areas are utilised for cash crops.²⁷ Poorer people are thus pushed to more

¹⁸ Cited in E. Goldsmith & N. Hildyard, "World Agriculture: Toward 2000", *The Ecologist* 21(2) (March/April 1991), p. 82. See also IUCN, UNEP & WWF, *Caring for the Earth*, p. 110.

¹⁹ IUCN, UNEP & WWF, *Caring for the Earth*, p. 110.

²⁰ *Ibid.*

²¹ P.N. Bradley & S.E. Carter, "Food Production and Distribution - and Hunger", in *A World in Crisis*, eds R.J. Johnston & P.J. Taylor (Oxford: Blackwell, 1986), p. 101; Goldsmith & Hildyard, "World Agriculture: Toward 2000", pp. 81-82; G. Lean, D. Hinrichsen & A. Markham, "Food Production and Consumption", *Terra Viva*, 10 June 1992, pp. 20-21.

²² Bradley & Carter, "Food Production and Distribution - and Hunger", pp. 109-122.

²³ *Ibid.* See also Lean et al., "Food Production and Consumption", pp. 20-21; D. Lessing, "The Scorched Earth of an African Paradise", *Guardian Weekly*, 26 June - 2 July 1992, p. 9.

²⁴ Bradley & Carter, "Food Production and Distribution - and Hunger", pp. 109-122; Lean et al., "Food Production and Consumption", p. 21.

²⁵ Bradley & Carter, "Food Production and Distribution - and Hunger", p. 122; Lean et al., "Food Production and Consumption", p. 21.

²⁶ Ramphal, *Our Country, The Planet*, p. 127.

²⁷ Bradley & Carter, "Food Production and Distribution - and Hunger", pp. 109-122; N. Hildyard, "An Open Letter to Edouard Saouma, Director-General of the Food and Agriculture Organisation of the United Nations", *The Ecologist* 21(2) (March/April 1991), pp. 43-46; N. Hildyard, "Sustaining the Hunger Machine: A Critique of FAO's Sustainable Agriculture and Rural Development Strategy", *The Ecologist* 21(6) (November/December 1991), pp. 239-243.

marginal areas, whilst richer soils are degraded through the excessive use of fertilisers and pesticides for cash crops.²⁸ Eighty percent of Latin America's poorest people, 60% of Asia's and 50% of Africa's live in areas that are infertile or prone to erosion, floods and drought.²⁹ Farming these marginal lands inevitably leads to further widespread land degradation. As populations increase and land is rendered unproductive, forests are cleared to make room to plant more crops.³⁰ The cycle perpetuates itself leading, in arid areas, to desertification.³¹

In industrialised countries, the environmental impacts of agriculture are quite different. Here, agriculture is largely controlled by a small number of giant corporations which ensure a highly productive yield.³² This is effected through the use of high-yield crop varieties, copious amounts of water, fertilisers, pesticides and large farms and mechanisation. Each input has a different impact. Briefly, fertilisers deteriorate soil structure and pollute water courses.³³ Pesticides contaminate the environment and have adverse effects on human health and on natural predator-prey interactions.³⁴ Mechanisation leads to the loss of job opportunities and may compact the soil.³⁵ Irrigation is typically inefficient, often resulting in waterlogging or salinisation.³⁶ In sum, land is degraded through excessive use of inappropriate and inefficient inputs.³⁷

²⁸ Hildyard, "Sustaining the Hunger Machine...", pp. 239-243.

²⁹ Ramphal, *Our Country, The Planet*, p. 129.

³⁰ Goldsmith & Hildyard, "World Agriculture: Toward 2000", pp. 81-92; P. Harrison, *The Third Revolution: Environment, Population and a Sustainable World* (London: I.B. Tauris, 1992), pp. 88-114; Ramphal, *Our Country, The Planet*, p. 129.

³¹ Goldsmith & Hildyard, "World Agriculture: Toward 2000", pp. 81-92; Harrison, *The Third Revolution*, pp. 116-121.

³² Bradley & Carter, "Food Production and Distribution - and Hunger", pp. 109-122; Hildyard, "An Open Letter to Edouard Saouma, Director-General of the Food and Agriculture Organisation of the United Nations", p. 44.

³³ Ramphal, *Our Country, The Planet*, pp. 106-107.

³⁴ G. Lean, D. Hinrichsen & A. Markham, "The Spread of Agrochemicals", *Terra Viva*, 9 June 1992, pp. 20-21.

³⁵ Goldsmith & Hildyard, "World Agriculture: Toward 2000", p. 87.

³⁶ According to the Food and Agricultural Organisation (hereafter cited as the FAO), 20% of the world's irrigated land suffers from waterlogging or salinisation - see *World Agriculture: Toward 2000, An FAO Study*, ed. N. Alexandratos (London: Belhaven Press, 1988). Lester Brown, Executive Director of Worldwatch Institute, estimates that one fourth of the world's irrigated cropland is lowered by waterlogging and salinity - see "The Illusion of Progress" in *State of the World, 1990*, eds L. Brown et al. (n.p.: Norton, 1990), p. 4.

³⁷ According to the IUCN, UNEP and the WWF, 15% of the Earth's total land surface is affected by human-induced processes of soil degradation. See *Caring for the Earth*, p. 110.

6.1.3 Forests

Forests, as an integral part of planetary life-support systems, play a crucial role in regulating climate and atmosphere. Since they act as carbon sinks, forests are invaluable in keeping carbon levels in the atmosphere stable.³⁸ This is particularly critical in the face of climate change and increased greenhouse gas emissions.³⁹ Forests also play an important role in soil conservation and in regulating local hydrological cycles.⁴⁰ As highly diverse ecosystems, they are home to most of the world's species, as well as to hundreds of thousands of forest peoples whose lives depend on their resources.⁴¹ Their high diversity further yields rich and varied commercial products: timber, pulpwood, fuelwood, medicines, and a range of non-wood products and genetic resources.⁴²

Contrary to popular belief, the greatest destruction of forests has taken place in the temperate regions of the developed world, where few natural forests remain.⁴³ The clearing of tropical forests began in the 1950s, and has since proceeded at an ever-increasing rate.⁴⁴ Recent estimates place tropical deforestation at 17 million ha (almost 2%) per year⁴⁵ - the equivalent of one football field per second!⁴⁶ The chief causes of deforestation have been shifting cultivation, colonisation, cash-crop agriculture, fuelwood cutting, ranching and road building.⁴⁷

³⁸ IUCN, UNEP & WWF, *Caring for the Earth*, p. 122; Ramphal, *Our Country, The Planet*, p. 67; UN, "Saving the Forests: Forging a Global Compact", *Earth Summit in Focus*, no. 5 (1992).

³⁹ See Chapter 11 of this dissertation. See also D.J. Dudek & A. LeBlanc, "Preserving Tropical Forests and Climate: The Role of Trees in Greenhouse Gas Emissions Trading", Paper presented at the United Nations Conference on Trade and Development (hereafter cited as UNCTAD) workshop on sustainable development, Global Forum, Rio de Janeiro, 1-4 June 1992.

⁴⁰ IUCN, UNEP & WWF, *Caring for the Earth*, p. 122; United Nations (hereafter cited as the UN), "Saving the Forests: Forging a Global Compact".

⁴¹ International Development Bank, "Amazon Without Myths: Global Environmental Treasure, Climate Regulator and Vital Resource for Development of the Region", *Terra Viva*, 10 June 1992, pp. 18-19; Ramphal, *Our Country, The Planet*, pp. 65-70; UN, "Saving the Forests: Forging a Global Compact".

⁴² IUCN, UNEP & WWF, *Caring for the Earth*, pp. 122-123; UN, "Saving the Forests: Forging a Global Compact".

⁴³ Ramphal, *Our Country, The Planet*, pp. 66-67; UN, "Saving the Forests: Forging a Global Compact".

⁴⁴ Ramphal, *Our Country, The Planet*, p. 66.

⁴⁵ IUCN, UNEP & WWF, *Caring for the Earth*, p. 124.

⁴⁶ UN Environment Programme (hereafter cited as UNEP), "About Deforestation", in *Only One Earth* (n.p., 1991).

⁴⁷ IUCN, UNEP & WWF, *Caring for the Earth*, p. 124; UN, "Saving the Forests: Forging a Global Compact"; UNEP, "About Deforestation".

In addition to species extinctions and the loss of biodiversity, the destruction of tropical forests has triggered widespread flooding and the loss of topsoil.⁴⁸ Moreover, deforestation and the burning of forests and pastures are significant contributors to global warming. Some 25% of all carbon dioxide emissions are estimated to emanate from these activities.⁴⁹ This, together with the concurrent loss of potential carbon sinks and biodiversity, is primarily the reason for deforestation being projected as a global concern.⁵⁰

6.1.4 Desertification

One-sixth of the human population live in the arid and semi-arid lands that constitute 25% of the planet's land surface.⁵¹ Of these drylands, more than 80% are in three continents: Africa, Asia and Australia.⁵² People have occupied these harsh, fragile lands for millennia, adapting the land and their habits to ensure survival. In Africa, this has largely been achieved through the continued migration of pastoralists and by maintaining cycles of fallow land.⁵³ These methods, however, depend on the existence of open migration routes and sufficient land to ensure the regeneration of cultivated tracts. With no tenure rights, pastoralists have been cornered into areas too small for their flocks to graze on sustainably. With increasing population and poverty, fallow time has been reduced. As a result, fragile rangelands have been overgrazed, poor soil overcultivated and watersheds deforested. Aggravated by climatic variability, desertification has rapidly followed.⁵⁴ Of the total land area of the world, the United Nations Environment Programme (UNEP) estimates 35% is threatened by

⁴⁸ W. Novaes, "Every Man's Jungle: A Burning Issue", *Terra Viva*, 13 June 1992, p. 11; UN, "Saving the Forests: Forging a Global Compact".

⁴⁹ Novaes, "Every Man's Jungle: A Burning Issue", p. 11. See also R.A. Houghton, "A Blueprint for Monitoring the Emissions of Carbon Dioxide and other Greenhouse Gases from Tropical Deforestation", Paper presented at the UNCTAD workshop on sustainable development, Global Forum, Rio de Janeiro, 1-4 June 1992.

⁵⁰ Summaries of the debate can be found in Ramphal, *Our Country, The Planet*, pp. 68-70; O. Ullsten, "Urgent Need for Forest Commission", *Earth Summit Times*, 7 June 1992, p. 6; and UN, "Saving the Forests: Forging a Global Compact".

⁵¹ Agenda 21, chapter 12, para. 2. See also M.O. Gaouth, "Arrest the Spread of African Desert", *Earth Summit Times*, 10 June 1992, p. 6.

⁵² Ramphal, *Our Country, The Planet*, p. 59.

⁵³ Gaouth, "Arrest the Spread of African Desert", p. 6; A. Rwegayura, "Africa Seeks Development Partnership", *Terra Viva*, 8 June 1992, p. 10.

⁵⁴ See for example, Gaouth, "Arrest the Spread of African Desert", p. 6; and Ramphal, *Our Country, The Planet*, pp. 61 - 64.

desertification.⁵⁵ In Africa, 1.5 billion ha, representing 80% of sub-Saharan dry- and rangelands, already show significant signs of desertification.⁵⁶

6.2 THE BASIS FOR ACTION: SOUTH AFRICAN PATTERNS OF LAND AND WATER USE

6.2.1 Water⁵⁷

Water scarcity is quite likely to be the limiting factor to South Africa's future development. If present trends continue, demand will outstrip supply by 2020.⁵⁸ This could be accelerated by climate change and increasingly dry conditions in the region.⁵⁹ Classified as a semi-arid country, South Africa receives on average less than 500 mm rainfall per year, compared to a global average of 860 mm.⁶⁰ Such water as there is is unevenly distributed. In the subtropical east, up to 2 000 mm of rain may occur per annum whilst in the arid deserts of the west, annual rainfall is less than 100 mm.⁶¹ As well as being spatially variable, the rainfall is temporally variable. Eighteen year cycles (nine wet and nine dry) typify rainfall patterns, although the duration, intensity and distribution of such spells vary widely.⁶² Long periods of drought are commonly followed by periods of flooding.⁶³

⁵⁵ UNEP, "About Desertification" in *Only One Earth* (n.p., 1991).

⁵⁶ UNEP estimate cited in Rwegayura, "Africa Seeks Development Partnership", p. 10.

⁵⁷ See also Chapter 5 of this dissertation.

⁵⁸ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 33.

⁵⁹ Department of Environment Affairs (hereafter cited as DEA), *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), p. 79; P.D. Tyson, "Modelling Climatic Change in Southern Africa: A Review of Available Methods", *South African Journal of Science* 86 (1990), pp. 318-330.

⁶⁰ B. Huntley, R. Siegfried & C. Sunter, *South African Environments into the 21st Century* (Cape Town: Human & Rousseau Tafelberg, 1989), p. 45.

⁶¹ DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 28-29; Huntley et al., *South African Environments into the 21st Century*, p. 46; President's Council, *Report of the Three Committees...*, p. 31.

⁶² DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 29; Huntley et al., *South African Environments into the 21st Century*, p. 47; R.A. Preston-Whyte & P.D. Tyson, *The Atmosphere and Weather of Southern Africa* (Cape Town: Oxford University Press, 1988), p. 260.

⁶³ *Ibid.*, pp. 259-262.

River systems, as the primary source of water for agricultural, industrial and domestic consumption, receive only 8% of rainfall runoff.⁶⁴ Average annual river runoff is approximately 53 500 million m³, or 19% of the global average on a per capita basis.⁶⁵ Some 60% of this is estimated to be available for use from storage dams.⁶⁶ Groundwater reserves, although substantial, are likely to constitute not more than 15% or 5 400 million m³ of the supply from conventional sources in the future.⁶⁷ This is largely due to its brackish quality and to extraction expenses.⁶⁸

Global patterns of water use are paralleled in South Africa: 70-75% is used for agriculture,⁶⁹ 12% is utilised by industry,⁷⁰ whilst domestic consumption accounts for approximately 8%.⁷¹ Each one of these sectors utilises water inefficiently, albeit to different extents.⁷² Agriculture is certainly the worst offender, utilising the bulk of the country's water to irrigate only 0.7% of South Africa's total surface area.⁷³ Less than a third of this water contributes to the growth of crops.⁷⁴

Water use in South Africa is not only inefficient, but highly inequitable. Agricultural water, for example, has been heavily subsidised by the state and in some cases is charged at less than five cents per cubic metre to commercial farmers.⁷⁵ In contrast, domestic and industrial rates are more than R1.00 per cubic metre whilst in rural areas, people may pay up to R25.00 per cubic metre from informal water sellers.⁷⁶ These inequalities extend to the domestic sector where water is readily

⁶⁴ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 29.

⁶⁵ *Ibid.*, p. 30. See also, Huntley et al., *South African Environments into the 21st Century*, pp. 61-62.

⁶⁶ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 30.

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ President's Council, *Report of the Three Committees...*, p. 34.

⁷⁰ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), p. 66.

⁷¹ *Ibid.*

⁷² *Ibid.*, pp. 65-66.

⁷³ President's Council, *Report of the Three Committees...*, p. 34.

⁷⁴ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 65.

⁷⁵ V. Munnik, "Water for All", *New Ground*, no. 7 (Autumn 1991/92), p. 17.

⁷⁶ D. Hanekom, "Drought Crisis Looming", *Mayibuye* (July 1992), p. 22; Munnik, "Water for All", pp. 15-17; F. Wilson & M. Ramphela, *Uprooting Poverty* (Cape Town: David Philip, 1989), pp. 49-50.

supplied to a minority of usually white households, but is less accessible to black communities.⁷⁷ Amounts of water consumed vary considerably between these households. In rural communities, as little as 9 litres per person per day may be utilised, well below the recommended per capita World Health Organisation standard of 50 litres per day.⁷⁸

There is additionally enormous variation in the quality of water available.⁷⁹ Adequate supplies of clean drinking water are a major problem facing black communities throughout South Africa.⁸⁰ As in other developing nations, water-related diseases are endemic, particularly in rural areas.⁸¹ These health concerns are aggravated by the harmful effects of carrying heavy waterloads over long distances.⁸²

6.2.2 Agriculture

The global inequalities of land and water allocation are matched in South Africa, although here the disparities are more glaring. Of the 106 million ha which constitute the total land area, 90% is classified as "agricultural".⁸³ Of this amount, 87% is owned by 50 000 white farmers.⁸⁴ The remaining 13% is held by 14 million rural blacks - 42% of the total population.⁸⁵ Enforced high population densities, combined with the inappropriate land-use practices of commercial farming, have resulted in what

⁷⁷ H. Coetzee & D. Cooper, "Wasting Water: Squandering a Precious Resource", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), pp. 136-138; Munnik, "Water for All", pp. 15-17; Wilson & Ramphele, *Uprooting Poverty*, pp. 50-51.

⁷⁸ Coetzee & Cooper, "Wasting Water: Squandering a Precious Resource", p. 137; Huntley et al., *South African Environments into the 21st Century*, p. 70; Wilson & Ramphele, *Uprooting Poverty*, pp. 50-51.

⁷⁹ In fact, South Africa has no legislated standard for drinking water. See Coetzee & Cooper, "Wasting Water: Squandering a Precious Resource", p. 138.

⁸⁰ Coetzee & Cooper, "Wasting Water: Squandering a Precious Resource", p. 136; Wilson & Ramphele, *Uprooting Poverty*, pp. 48-50.

⁸¹ Huntley et al., *South African Environments into the 21st Century*, p. 71; Wilson & Ramphele, *Uprooting Poverty*, pp. 48-50.

⁸² Wilson and Ramphele refer to a community in Mseleni, KwaZulu, where at the time of the study 60% of women over the age of 30 suffered from a crippling form of arthritis. Two-thirds of the households in this area were more than a one-hour round trip from water. See *Uprooting Poverty*, pp. 49-50.

⁸³ President's Council, *Report of the Three Committees...*, p. 13.

⁸⁴ D. Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", in *Going Green*, p. 187; Huntley et al., *South African Environments into the 21st Century*, p. 57.

⁸⁵ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 187; Huntley et al., *South African Environments into the 21st Century*, p. 53.

may arguably be considered the most serious environmental concern in the country. Soil erosion, overgrazing, siltation, waterlogging, salinisation and the loss of soil fertility are some of the contributing factors to widespread land degradation in South Africa.⁸⁶

South African agriculture contributes only 6.2% of Gross Domestic Product,⁸⁷ but has long been regarded as a strategic area in light of the government's policy of self-sufficiency.⁸⁸ This is despite the fact that only 13.5% of the total land area is regarded as suitable for dryland crop production.⁸⁹ Although 70% of South Africa's land is classified as suitable for grazing,⁹⁰ overgrazing combined with the fragility of the arid environment render two-thirds of this land unviable for pastoral production.⁹¹

Enormous differentiation exists in South African agriculture, even amongst the white farmers. There are essentially three distinct sub-sectors:⁹²

- a small group of large, productive white-owned commercial farms, representing 30% of white farms and producing 80% of the retailed output;⁹³
- a second sector made up of smaller, less productive farms, comprising 70% of white farms and often surviving on loans, overdrafts and government subsidies;⁹⁴
and

⁸⁶ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 176-192; DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 96-101.

⁸⁷ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 54.

⁸⁸ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 54; Huntley et al., *South African Environments into the 21st Century*, p. 59. See also Chapter 3 of this dissertation.

⁸⁹ Huntley et al., *South African Environments into the 21st Century*, p. 52.

⁹⁰ President's Council, *Report of the Three Committees...*, p. 15.

⁹¹ *Ibid.*

⁹² As identified by D. Cooper, *Working the Land: A Review of Agriculture in South Africa* (Johannesburg: Environmental and Development Agency, 1988).

⁹³ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 178, 183.

⁹⁴ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 26-27.

- a third agricultural group consisting of communally owned land in the "homelands", farming chiefly on a subsistence basis, and producing 16% of local food needs and 7% of marketed output.⁹⁵

Farming methods similar to those described for industrialised countries are employed by the richer farmers. On these farms, the use of pesticides, fertilisers, mechanisation, monocultures and extensive amounts of water is prevalent.⁹⁶ Many of these inputs are heavily subsidised by the state which has had an extremely lax attitude both to the overuse of chemicals and to the ill effects of pesticides on the environment and on farm labourers.⁹⁷ These farmers are, however, more likely to maintain sustainable stocking rates than the less productive white farms where bad management practices are more common.⁹⁸

Overstocking and inappropriate ploughing are two of the predominant concerns on these less productive farms,⁹⁹ particularly in the drier western half of the country. Part of the problem rests with government subsidies provided to tide farmers over dry spells.¹⁰⁰ As a result, farmers do not reduce stock numbers or abandon marginal lands when they should. Overgrazing and soil erosion consequently exhaust the land, often leading to desertification and the loss of thousands of hectares of pastoral land.¹⁰¹

The situation in the "homelands" is perhaps the most critical. Overcrowding, poverty and poor land, combined with grossly inadequate advisory services and

⁹⁵ Huntley et al., *South African Environments into the 21st Century*, p. 54; President's Council, *Report of the Three Committees...*, p. 14.

⁹⁶ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 183-186; Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 25-26.

⁹⁷ The International Labour Organisation (hereafter cited as the ILO) estimates that 1 600 South Africans die from pesticide-related events each year. See ILO, "The 'Aggro' Chemicals", *Critical Health*, no. 33 (November 1990), p. 76; and Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 184-186. See also K. Emanuel, "The Pesticide Trade: Paying the Price for Profits", *New Ground*, no. 6 (Summer 1991/92), pp. 28-30.

⁹⁸ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 183; President's Council, *Report of the Three Committees...*, p. 19.

⁹⁹ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 183; D. Cooper, "Reaping a Different Harvest", in *Restoring the Land*, eds M. Ramphela & C. McDowell (London: Panos, 1991), p. 56; Huntley et al., *South African Environments into the 21st Century*, p. 47.

¹⁰⁰ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 26-27; Huntley et al., *South African Environments into the 21st Century*, p. 58.

¹⁰¹ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 26-27.

financial aid, have resulted in severe rates of soil erosion, overgrazing, overcropping and siltation.¹⁰² Added to this is the increasing destruction of vegetation for use as fuelwood.¹⁰³ With plant cover removed, erosion increases, riverbeds silt up, and clean drinking water becomes more scarce.¹⁰⁴ As vegetation becomes more sparse, women have to spend more time gathering wood, and walk further carrying heavy loads.¹⁰⁵ By the year 2000, it is expected that rural South Africa will experience a fuelwood deficit of 4 million tonnes.¹⁰⁶

Combining all agricultural sectors, up to 400 million tonnes of topsoil are washed annually into South African rivers, dams and to a limited extent into the sea.¹⁰⁷ Three million hectares of bushveld have already been rendered useless for livestock grazing as a result of veld mismanagement.¹⁰⁸ The carrying capacity of a further 14 million ha of savanna is diminishing due to bush encroachment.¹⁰⁹ One-third of the country is overstocked.¹¹⁰ Desertification, although disputed by some,¹¹¹ is estimated by the President's Council Report on a National Environmental Management System to have

¹⁰² Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 177; Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 27-28; Huntley et al., *South African Environments into the 21st Century*, p. 55; F. Krüger, "The Ciskei: Dumping Ground of the Eastern Cape", in *Restoring the Land*, pp. 42-44; F. Wilson, "A Land Out of Balance", in *Restoring the Land*, pp. 34-36.

¹⁰³ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 179; Huntley et al., *South African Environments into the 21st Century*, p. 70; N. Ndhlovu, "A Desert for the Deserted", in *Restoring the Land*, pp. 50-51; President's Council, *Report of the Three Committees...*, p. 23; R. Viljoen, "Going up in Smoke", *New Ground*, no. 5 (Spring 1991), pp. 10-11; Wilson & Ramphele, *Uprooting Poverty*, pp. 44-46.

¹⁰⁴ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 182; Krüger, "The Ciskei: Dumping Ground of the Eastern Cape", p. 43; Viljoen, "Going up in Smoke", pp. 10-11; Wilson, "A Land Out of Balance", pp. 35-36; Wilson & Ramphele, *Uprooting Poverty*, pp. 47-48.

¹⁰⁵ P. Matlala, "Burning Energy", *New Ground*, no. 10 (Summer 1992/93), pp. 2-3; Viljoen, "Going up in Smoke", pp. 10-11; Wilson & Ramphele, *Uprooting Poverty*, p. 44.

¹⁰⁶ M. Gandar, "One Hundred Years of Woodlots", *New Ground*, no. 5 (Spring 1991), p. 13. According to the University of Cape Town's Energy Research Institute, at present levels of consumption and in the absence of a policy of efficient, affordable energy provision, natural woodlands in South Africa will be entirely denuded by the year 2020. See J. Aron, A. Eberhard & M. Gandar, "Demand and Supply of Firewood in the Homelands of South Africa", Second Carnegie Inquiry into Poverty and Development in Southern Africa, Post Conference Paper no. 21, Cape Town, 1989.

¹⁰⁷ Huntley et al., *South African Environments into the 21st Century*, p. 38; President's Council, *Report of the Three Committees...*, p. 14.

¹⁰⁸ Huntley et al., *South African Environments into the 21st Century*, p. 40.

¹⁰⁹ Ibid.

¹¹⁰ Cooper, "Reaping a Different Harvest", p. 56.

¹¹¹ See for example M.T. Hoffman & R.M. Cowling, "Vegetation Change in the Semi-Arid Eastern Karoo Over the Last 200 Years: An Expanding Karoo - Fact or Fiction?", *South African Journal of Science* 86 (1990), pp. 286-294. These researchers contest the view that the karoo is changing from a perennial grassland to a dwarf shrubland. They maintain that the phenomenon is attributable to natural fluctuations in vegetative cover which are directly linked to drought and high rainfall episodes.

claimed 250 000 ha of South African land, and to be threatening 55% of South Africa's total surface.¹¹² These factors, compounded by hunger,¹¹³ malnutrition,¹¹⁴ the current R17 billion agricultural debt¹¹⁵ and the lack of a coordinated, land-use planning strategy,¹¹⁶ depict the agricultural crisis in South Africa.

The present drought in southern Africa has highlighted many of these concerns and has pointed to the crisis being a result of ineffectual policy, poor management, bad economic conditions and poverty more than low rainfall.¹¹⁷ It has, moreover, raised questions as to the suitability of farming imported crops such as maize and exotic cattle as opposed to drought-resistant indigenous varieties.¹¹⁸

6.2.3 Forests

Indigenous forests constitute less than 0.25%¹¹⁹ (164 000 ha)¹²⁰ of South Africa's surface area. This low proportion is largely due to climatic and topographical factors,¹²¹ although mismanagement and overexploitation have resulted in extensive

¹¹² President's Council, *Report of the Three Committees...*, p. 16. See also B. Downing, "Environmental Consequences of Agricultural Expansion in South Africa Since 1850", *South African Journal of Science* 74 (1978), pp. 420-422.

¹¹³ Wilson & Ramphela, *Uprooting Poverty*, 100-106. See also, G. Dor, "The Politics of Food: Monopoly Profits and Hunger", *New Ground*, no. 8 (Winter 1992), pp. 27-29.

¹¹⁴ Wilson and Ramphela estimate that approximately one-third of black, coloured and Asian children below the age of 14 years are underweight and stunted for their age. See *Uprooting Poverty*, pp. 100-105. According to government figures, 2.3 million people show physical signs of malnutrition. See D. Husy & G. Dor, "More Than Enough Food", *New Ground*, no. 8 (Winter 1992), Supplement.

¹¹⁵ See J.H. Giliomee, "Agriculture", in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 746; D. Husy & G. Dor, "Victims of the Food Economy", *New Ground*, no. 8 (Winter 1992), Supplement; and M. Johns, "Next Year will be a Good Year ... Southern Africa's Dreadful Dryland Farming Disaster", *New Ground*, no. 8 (Winter 1992), p. 32.

¹¹⁶ President's Council, *Report of the Three Committees...*, p. 13.

¹¹⁷ Consultative Forum on Drought, "Root Cause and Relief Constraint Report", October 1992; Hanekom, "Drought Crisis Looming", p. 22; Johns, "Next Year will be a Good Year ... Southern Africa's Dreadful Dryland Farming Disaster", pp. 31-33; "State of Chaos: Government Response to Drought is Inadequate and Misdirected", *Finance Week*, 9 July 1992, pp. 29-30.

¹¹⁸ See for example, A. Ferreira, "Drought: Farmers Have to 'Blame Themselves'", *Pretoria News*, 17 February 1992; Johns, "Next Year Will be a Good Year ... All You Need are Drought-Busting Solutions", *New Ground*, no. 9 (Spring 1992), pp. 38-41; A. Meldrum, "Southern Africa's Drought Scorches Beyond Maize Fields", *Weekly Mail*, 10 April 1992; and A. Meldrum, "Drought Withers Southern Africa", *New Ground*, no. 8 (Winter 1992), pp. 33-34.

¹¹⁹ Cooper, "Reaping a Different Harvest", p. 54.

¹²⁰ President's Council, *Report of the Three Committees...*, p. 22.

¹²¹ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 38; C.J. Geldenhuys & D.R. MacDevette, "Conservation Status of Coastal and Montane Evergreen Forest", in *Biotic Diversity in Southern Africa*, ed. B.J. Huntley (Cape Town: Oxford University Press, 1989), p. 224.

depletions.¹²² Most of South Africa's indigenous forests are state-owned and are managed primarily for conservation purposes.¹²³ Over 80% of the forest biome is consequently protected,¹²⁴ although privately-owned forests in the Orange Free State, northern Transvaal, south-western Cape and particularly Natal are not afforded adequate protection.¹²⁵ For example, in KwaZulu mining concerns are deforesting extensive areas of indigenous dune forest and replanting these areas with alien species.¹²⁶

Commercial forestry utilises some one million ha of land.¹²⁷ The sector, which is expanding at a rate of 30 000 ha a year,¹²⁸ is predominantly corporate owned.¹²⁹ Roughly 17 million tons of exotic wood (mainly pines and eucalypts) are produced each year allowing for self-sufficiency in timber and wood requirements and a lucrative export market.¹³⁰ The industry plans to double its present plantation area over the next three decades.¹³¹

The environmental impacts of commercial, exotic afforestation have been severe.¹³² As well as being major water users, many plantations have been established in the water catchment areas of principal rivers.¹³³ This has had direct effects on

¹²² Ibid.

¹²³ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 38; Geldenhuys & MacDevette, "Conservation Status of Coastal and Montane Evergreen Forest", p. 235.

¹²⁴ W.R. Siegfried, "Preservation of Species in Southern African Nature Reserves", in *Biotic Diversity in Southern Africa*, p. 193.

¹²⁵ Geldenhuys & MacDevette, "Conservation Status of Coastal and Montane Evergreen Forest", p. 235.

¹²⁶ pers. obs.

¹²⁷ President's Council, *Report of the Three Committees...*, pp. 13, 22.

¹²⁸ Ibid., p. 22.

¹²⁹ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 186-187.

¹³⁰ Ibid., p. 186. See also, President's Council, *Report of the Three Committees...*, p. 22.

¹³¹ President's Council, *Report of the Three Committees...*, p. 22.

¹³² DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 88, 92; J.H. O'Keeffe et al., "The Conservation Status of Southern African Rivers", in *Biotic Diversity in Southern Africa*, p. 280.

¹³³ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 186-187; DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 92; C. Keaton, "Forests Threaten Water Resources", *Weekly Mail*, 28 June - 2 July 1992; President's Council, *Report of the Three Committees...*, p. 35.

downstream water users and river systems, particularly in drought-prone areas.¹³⁴ These effects are likely be intensified with the expansion of commercial forestry.

6.3 AGENDA 21: FRESHWATER RESOURCES, AGRICULTURE, FORESTS, DESERTIFICATION AND DROUGHT

Agenda 21 devotes ten chapters to the efficient use of natural resources, six of which are described in this section. In this dissertation, Chapter 7 examines the sustainable use of marine resources, whilst Chapters 11 and 12 discuss energy resources, biodiversity and biotechnology. Common themes which underly the protection of freshwater resources are described in Box 13, followed by a more detailed list of actions recommended for each of the six programme areas of freshwater management (Box 14). Proposals for land resources planning and management are considered in Box 15. Eleven programme areas are allotted to sustainable agriculture and rural development (Box 16). Desertification and drought, deforestation and sustainable mountain development are summarised in Boxes 17-19 respectively.

¹³⁴ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 186-187; DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 92.

**BOX 13. PROTECTION OF FRESHWATER RESOURCES:
COMMON THEMES** ¹³⁵

Governments, with the support of relevant organisations, should:

- encourage water development and management based on a participatory approach. Planners, policy makers, users, and particularly women, should be involved in decision-making at all phases of water management;
- manage water at the lowest appropriate level, involving district water committees and river catchment authorities. Government services should be decentralised to local authorities, private enterprises, and communities. Decisions should be taken at the lowest level;
- develop water resource management within a comprehensive set of policies for human health, food production, disaster mitigation plans, environmental protection and conservation of the natural resource base;
- evaluate charging mechanisms which reflect as far as possible both the true cost of water when used as an economic good, and the ability of communities to pay;
- establish appropriate institutional, legal and financial mechanisms to allow for the adequate assessment of water resources, to identify and protect potential sources of water supply, and to ensure that water policy and its implementation become "catalysts for sustainable development";
- promote schemes for rational water use through public awareness-raising, educational programmes, levying of water tariffs and other economic instruments;
- train local communities in appropriate water management techniques as well as primary and environmental health care;
- set standards for discharges and for receiving waters, and apply the "polluter pays" principle where appropriate;
- introduce the "precautionary approach" in water-quality management, focusing on pollution minimisation and prevention, pollution reduction at source, efficient reuse and recycling, and environmentally sound disposal;
- promote the application of environmental and social impact assessments for all major water resource development projects which could potentially impair water quality and aquatic ecosystems; and
- promote international scientific research cooperation on freshwater resources.

¹³⁵ Agenda 21, chapter 18.

BOX 14. PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES ¹³⁶	
PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>INTEGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT</p> <p>\$115 million from the international community on grant or concessional terms</p>	<p>Governments, with the support of international organisations, should:</p> <ul style="list-style-type: none"> ● promote a dynamic, interactive, iterative and multisectoral approach to water resources management, including the identification and protection of potential sources of fresh water supply; ● plan for the sustainable and rational utilisation, protection, conservation and management of water resources based on community needs and priorities within the framework of national economic development policy; ● integrate measures for the protection and conservation of freshwater sources with land-use planning, forest utilisation, mountain slopes and riverbanks protection; ● formulate targeted and costed national action plans, and have in place appropriate institutional structures and legal instruments by the year 2000; ● develop interactive databases, forecasting models and appropriate economic planning models to manage water resources; ● implement allocation decisions through demand management, pricing mechanisms and regulatory measures; ● develop new and alternative sources of water-supply such as sea-water desalination, artificial groundwater recharge, use of marginal quality water, waste-water reuse, and water recycling; ● integrate water quantity and quality management; ● promote water conservation through improved water-use efficiency and wastage minimisation schemes for all users, and have such programmes in place by the year 2000; ● formulate and harmonise water resources strategies for transboundary water resources and their assessment; and ● strengthen cooperation at local, national, regional and global levels.
<p>WATER RESOURCES ASSESSMENT</p> <p>\$335 million (\$145 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● strengthen institutional capacities, and establish cooperation at the national level between various agencies responsible for the collection, storage and analysis of hydrologic data. By the year 2000 the feasibility of installing water resources assessment services should be fully investigated; ● review existing data-collection networks, assess their adequacy, apply standards to ensure data compatibility, and ensure the availability of databases and forecasts to all potential users; and ● establish and strengthen research and development programmes at all levels, and monitor these activities to ensure their appropriateness.
<p>PROTECTION OF WATER RESOURCES, WATER QUALITY AND AQUATIC ECOSYSTEMS</p> <p>\$1 billion (\$340 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● prepare national plans and profiles for the rational use of water resources, their protection and conservation; ● rehabilitate degraded catchment areas and strengthen administrative and legislative measures to prevent encroachment on existing and potentially usable catchment areas; ● promote the use of adequately treated and purified waste waters in agriculture, aquaculture, industry and other sectors; ● develop agricultural practices that do not degrade groundwaters; ● prevent aquifer pollution through the regulation of toxic substances that permeate the ground, the sound design and management of landfills, and the reduced intrusion of biological pathogens and toxic chemicals at well sites; ● conserve and protect wetlands, control noxious aquatic species, and rehabilitate polluted and degraded water bodies to restore aquatic habitats and ecosystems; and ● establish networks and legal instruments to monitor and control national and transboundary pollution, and the long-range atmospheric transport of pollutants.

¹³⁶ Agenda 21, chapter 18.

<p>DRINKING-WATER SUPPLY AND SANITATION</p>	<ul style="list-style-type: none"> ● develop low-cost but adequate services and technologies which are responsive to the needs and constraints of the communities concerned, and can be implemented and sustained at the community level. Traditional and indigenous technologies should be promoted to maximise and sustain local involvement; ● establish protected areas for sources of drinking-water supply; ● establish national policies and budget priorities to increase water supply and sanitation to the rural poor; ● build sewage treatment facilities and drainage systems, and promote the sanitary disposal of sewage; ● expand urban and rural water-supply and rainwater catchment systems; ● integrate community management of water within the context of overall planning, and support and assist communities in managing their own systems on a sustainable basis; ● assist service agencies in becoming more cost-effective and responsive to consumer needs; and ● strengthen local institutions in implementing water and sanitation programmes, whilst building up national capacities at all levels.
<p>\$20 billion (\$7.4 billion from the international community on grant or concessional terms)</p>	
<p>WATER FOR SUSTAINABLE FOOD PRODUCTION AND RURAL DEVELOPMENT</p>	<ul style="list-style-type: none"> ● increase hygiene education and eliminate disease transmission foci; ● promote programmes which focus on increasing the efficiency and productivity of agricultural water, recycling wastewater, waterlogging and salinity control and drainage in irrigated areas; ● establish cost-effective water-quality monitoring systems for agricultural water uses, and prevent the adverse effects of agricultural activities on water quality through <i>inter alia</i> integrated pest management; ● develop small-scale irrigation, and promote local initiatives for water resources development; ● formulate large-scale and long-term irrigation development programmes, and plan multi-purpose hydroelectric power schemes, taking into account environmental concerns; ● develop long-term strategies for agricultural water use under conditions of scarcity; ● recognise water as a social, economic and strategic good in irrigation planning and management; ● improve the quality and increase the quantity of water sources available to livestock to prevent overgrazing and reduce the distance needed to travel for water; ● encourage multiple use of water-supplies through promotion of integrated agro-livestock-fishery systems; and ● conserve water quality and quantity for optimum production of inland fisheries, preventing aquacultural water pollution.
<p>\$13.2 billion (\$4.5 billion from the international community on grant or concessional terms)</p>	
<p>IMPACTS OF CLIMATE CHANGE ON WATER RESOURCES</p>	<ul style="list-style-type: none"> ● monitor the hydrologic regime, especially in regions most likely to suffer from the adverse effects of climate change; ● develop and apply techniques for assessing the potential adverse effects of climate change; ● assess the social, economic and environmental impacts of climate change, and develop response strategies to counter adverse effects; ● develop agricultural activities based on brackish-water use; and ● contribute to research activities under current international programmes.
<p>\$100 million (\$40 million from the international community on grant or concessional terms)</p>	

BOX 15. LAND RESOURCES PLANNING AND MANAGEMENT¹³⁷

Governments, with the support of relevant organisations, should:

- ensure that policies and policy instruments support the best possible land use and sustainable management of land resources, and take the interests of the local population into account. Such policies should be developed by 1996;
 - apply economic instruments and develop institutional mechanisms and incentives to encourage the best possible use of land;
 - delegate policy-making to the lowest level of public authority;
 - by the year 2000, revise planning and management systems to facilitate the integration of both developmental and environmental goals, and the integration of all environmental components (eg air, water, land);
 - by 1998, strengthen institutions and coordinating mechanisms for land and land resources;
 - strengthen management systems for land and natural resources by including appropriate traditional and indigenous methods;
 - compile land capability inventories to guide sustainable land resource allocation and use at local and national levels;
 - promote the development of planning and management tools such as risk assessment and cost benefit analysis, that facilitate an integrated and sustainable approach to land and resources; and
 - by 1996, create mechanisms to facilitate the active participation of all concerned, particularly local communities, in decision-making on land use and management.
- The annual cost of implementing these activities is estimated to be \$50 million from the international community on grant or concessional terms.

¹³⁷ Agenda 21, chapter 10.

BOX 16. PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT ¹³⁸

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
	Governments, with the support of relevant organisations, should:

AGRICULTURAL POLICY REVIEW, PLANNING AND INTEGRATED PROGRAMMING IN LIGHT OF THE MULTIFUNCTIONAL ASPECT OF AGRICULTURE, PARTICULARLY WITH REGARD TO FOOD SECURITY AND SUSTAINABLE DEVELOPMENT

\$3 billion (\$450 million from the international community on grant or concessional terms)

- review national and regional agricultural policies related to food security, foreign trade, pricing, exchange rates, and subsidies and taxes by the year 1995;
- establish a programme to integrate sustainable development with food and agriculture policy by 1995;
- by 1998, develop measures to enhance sustainable food production and security within the framework of sustainable development; and
- implement policies relating to land tenure, demographic trends, appropriate technologies, and trading systems to enhance rural households' access to food.

ENSURING PEOPLE'S PARTICIPATION AND PROMOTING HUMAN RESOURCE DEVELOPMENT FOR SUSTAINABLE AGRICULTURE

\$4.4 billion (\$650 million from the international community on grant or concessional terms)

- review and refocus existing measures to guarantee the equitable access of rural people, particularly women, to land, water, and forest resources, and to technologies, financing, marketing, processing and distribution;
- strengthen the capacity of rural institutions and extension services, and develop guidelines to decentralise decision-making;
- encourage investment in land resources through clear land titles and rights; and
- provide support services and training.

IMPROVING FARM PRODUCTION AND FARMING SYSTEMS THROUGH DIVERSIFICATION OF FARM AND NON-FARM EMPLOYMENT AND INFRASTRUCTURE DEVELOPMENT

\$10 billion (\$1.5 billion from the international community on grant or concessional terms)

- develop and disseminate to farming households farm management technologies such as crop rotation, organic manuring, waste recycling, and other techniques which reduce the use of agricultural chemicals;
- create non-farm employment opportunities through private, small-scale agro-processing units, cottage industries, rural infrastructure development, conservation and reclamation activities, etc.;
- provide rural infrastructure for access to agricultural inputs and services, and promote rural financial networks; and
- encourage forest management and tree growing as a farming option.

LAND-RESOURCE PLANNING INFORMATION AND EDUCATION FOR AGRICULTURE

\$1.7 billion (\$250 million from the international community on grant or concessional terms)

- systematically identify sustainable land uses and production systems for each land and climate zone, and control inappropriate land use;
- establish and strengthen agricultural land-use and land-resource planning, management, education and information at all levels; and
- initiate and maintain village agricultural land-resource planning, management and conservation groups to assist in problem identification and project implementation.

¹³⁸ Agenda 21, chapter 14.

<p>LAND CONSERVATION AND REHABILITATION</p> <p>\$5 billion (\$800 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● develop programmes to remove and resolve the physical, social and economic causes of land degradation; ● review and initiate national land-resource surveys by the year 2000; ● prepare and implement policies and programmes to reclaim degraded lands and conserve areas at risk, providing incentives and resources for the participation of local communities; and ● develop programmes for the rehabilitation of waterlogged and salinised land, and for the sustainable use of non-cultivated land with agricultural potential.
<p>CONSERVATION AND SUSTAINABLE UTILISATION OF PLANT GENETIC RESOURCES FOR FOOD AND SUSTAINABLE AGRICULTURE (PGRFA)</p> <p>\$600 million (\$300 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● develop and strengthen national capabilities, institutional capacity, plans and programmes for the conservation and use of PGRFA; ● promote crop diversification in agricultural systems, and the utilisation of potentially useful plants and crops; ● ensure that the benefits of research and development in plant breeding are fairly and equitably shared between the sources and users of the genetic resources; and ● strengthen programmes and networks for <i>in situ</i> and <i>ex situ</i> conservation and use of PGRFA by the year 2000.
<p>CONSERVATION AND SUSTAINABLE UTILISATION OF ANIMAL GENETIC RESOURCES FOR SUSTAINABLE AGRICULTURE</p> <p>\$200 million (\$100 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● describe all breeds of livestock used in animal agriculture, and begin a 10-year programme of action for specific indigenous populations; and ● draw up breed preservation plans and initiate breed development strategies for endangered populations.
<p>INTEGRATED PEST MANAGEMENT AND CONTROL IN AGRICULTURE</p> <p>\$1.9 billion (\$285 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● implement the International Code of Conduct on the Distribution and Use of Pesticides, and establish mechanisms to control the distribution and use of pesticides by the year 2000; ● review and reform national policies and mechanisms to ensure the safe and appropriate use of pesticides; ● implement programmes to put integrated pest-management practices within the reach of farmers. By the year 1998, establish networks to promote and develop integrated pest management among farmers, researchers and extension services; ● encourage research and development into pesticides that are target-specific and degrade into harmless constituents after use; and ● ensure that pesticides are well-labelled as to their safe handling, application and disposal.
<p>SUSTAINABLE PLANT NUTRITION TO INCREASE FOOD PRODUCTION</p> <p>\$3.2 billion (\$475 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● formulate and apply strategies that will maintain soil productivity, whilst enhancing soil fertility; ● determine plant nutrient requirements, and optimise the use and recycling of organic and inorganic nutrients, to increase farming efficiency and production. This "integrated plant nutrition approach" should be developed by the year 2000; ● establish institutional and human infrastructure to enhance decision-making on soil productivity by the year 2000; and ● ensure that environmentally sound technologies and management strategies are made available to all farmers, extension agents, planners and policy makers.

<p>RURAL ENERGY TRANSITION TO ENHANCE PRODUCTIVITY</p> <p>\$1.8 billion (\$265 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● initiate and encourage a process of environmentally sound energy transition in rural communities, from unsustainable energy sources, to structured and diversified energy sources. This process should be in motion, and alternative new and renewable sources of energy made available, by the year 2000; and ● initiate and promote rural energy programmes supported by technical training, banking and related infrastructure.
<p>EVALUATION OF THE EFFECTS OF ULTRAVIOLET RADIATION ON PLANTS AND ANIMALS CAUSED BY THE DEPLETION OF THE STRATOSPHERIC OZONE LAYER</p> <p>No cost estimate</p>	<ul style="list-style-type: none"> ● facilitate research regarding the effects of ultraviolet radiation on plant and animal life and on agricultural activities, and consider taking appropriate remedial measures.

<p>BOX 17. COMBATING DESERTIFICATION AND DROUGHT¹³⁹</p>	
<p>PROGRAMME AREA & cost per annum (1993-2000)</p>	<p>ACTIVITIES Governments, with the support of relevant organisations, should:</p>
<p>STRENGTHENING THE KNOWLEDGE BASE AND DEVELOPING INFORMATION AND MONITORING SYSTEMS FOR REGIONS PRONE TO DESERTIFICATION AND DROUGHT</p> <p>\$350 million (\$175 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● establish regional and global information and observation systems for monitoring desertification and land degradation; ● take into account socio-economic causes and their interactions with climatic cycles and drought, when assessing the rate and status of desertification; and ● strengthen regional programmes and international cooperation such as the Intergovernmental Authority for Drought and Development (IGADD) and the Southern African Development Coordination Conference (SADCC).
<p>COMBATING LAND DEGRADATION THROUGH, <i>INTER ALIA</i> INTENSIFIED SOIL AND WATER CONSERVATION, AFFORESTATION AND REFORESTATION ACTIVITIES</p> <p>\$6 billion (\$3 billion from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● implement preventive measures in areas not yet affected or only slightly affected by desertification; ● implement corrective measures to sustain the productivity of moderately to severely desertified land; ● undertake rehabilitative measures to recover severely desertified drylands; ● promote land management systems which combat salinisation in irrigated croplands; ● encourage investment in drylands forestry development through various incentives; and ● promote the use of energy sources which reduce dependence on wood.

¹³⁹ Agenda 21, chapter 12.

<p>DEVELOPING AND STRENGTHENING INTEGRATED DEVELOPMENT PROGRAMMES TO ERADICATE POVERTY AND PROMOTE ALTERNATIVE LIVELIHOOD OPPORTUNITIES IN AREAS PRONE TO DESERTIFICATION</p>	<ul style="list-style-type: none"> ● adopt policies which decentralise decision-making and delegate responsibility to rural organisations; ● create or strengthen rural organisations and village associations focused on economic activities of common pastoral interest; ● create rural banking systems to facilitate access to credit, particularly for women; and ● facilitate the establishment of cottage industries.
<p>See Chapter 4 and Box 16 of this dissertation</p>	
<p>DEVELOPING COMPREHENSIVE ANTI-DESERTIFICATION PROGRAMMES AND INTEGRATING THEM INTO NATIONAL DEVELOPMENTAL AND ENVIRONMENTAL PLANNING</p>	<ul style="list-style-type: none"> ● strengthen national and local anti-desertification authorities and develop national plans of action to combat desertification. ● An intergovernmental negotiating committee is to be set up at the 47th meeting of the UN General Assembly to elaborate an international convention to combat desertification. The convention is to be finalised by June 1994.
<p>\$180 million (\$90 million from the international community on grant or concessional terms)</p>	
<p>DEVELOPING DROUGHT PREPAREDNESS AND DROUGHT-RELIEF SCHEMES, INCLUDING SELF-HELP ARRANGEMENTS, FOR DROUGHT-PRONE AREAS AND DESIGNING PROGRAMMES TO COPE WITH ENVIRONMENTAL REFUGEES</p>	<ul style="list-style-type: none"> ● develop national strategies for drought preparedness in both the short and long term; ● strengthen the flow of early-warning information to decision-makers and land users; ● design strategies to deal with national food deficiencies; ● improve national and regional capacities for linking weather forecasts with crop planning; ● establish contingency arrangements for food and fodder distribution and water supply; ● prepare rural projects and safety nets to provide employment to drought-affected households; and ● establish budgetary mechanisms to provide resources for drought relief.
<p>\$1.2 billion (\$1.1 billion from the international community on grant or concessional terms)</p>	
<p>ENCOURAGING AND PROMOTING POPULAR PARTICIPATION AND ENVIRONMENTAL EDUCATION, FOCUSING ON DESERTIFICATION CONTROL AND MANAGEMENT OF THE EFFECTS OF DROUGHT</p>	<ul style="list-style-type: none"> ● establish administrative structures for more decentralised decision-making; ● promote true partnerships between government authorities, other agencies, non-governmental organisations (NGOs) and land users; ● develop training programmes to increase the level of education and participation of people, particularly women and indigenous groups; and ● define specific objectives and management plans in cooperation with local communities.
<p>\$1 billion (\$500 million from the international community on grant or concessional terms)</p>	

BOX 18. COMBATING DEFORESTATION ¹⁴⁰	
PROGRAMME AREA	ACTIVITIES
& cost per annum (1993-2000)	Governments, with the support of NGOs, the private sector, forest peoples and institutions, should:
<p>SUSTAINING THE MULTIPLE ROLES OF FORESTS, FORESTLANDS AND WOODLANDS</p> <p>\$2.5 billion (\$860 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● strengthen national institutions and capabilities to secure the multiple roles of forests; ● ensure the sustainable production of forest "goods and services"; ● promote the participation of the private sector, unions, local communities, rural cooperatives, women, youth and all relevant organisations in forest-related activities; and ● enhance the scope and effectiveness of forest extension and public education.
<p>ENHANCING THE PROTECTION OF ALL FORESTS AND THE GREENING OF DEGRADED AREAS, THROUGH AFFORESTATION, REFORESTATION AND REHABILITATION ACTIVITIES</p> <p>\$10 billion (\$3.7 billion from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● establish protected forest areas in representative systems and primary old-growth forests; ● develop and strengthen national programmes for planted forests to support ecologically sound afforestation and reforestation programmes, giving emphasis to native species; and ● stimulate the development of urban forestry for the greening of urban, peri-urban and rural human settlements.
<p>PROMOTING THE EFFICIENT UTILISATION OF FORESTS, AND RECOGNISING THE SOCIAL, ECONOMIC AND ECOLOGICAL VALUES OF FORESTS, FORESTLANDS AND WOODLANDS</p> <p>\$18 billion (\$880 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● promote the efficient, rational and sustainable use of trees and forest resources; ● improve environmentally sound methods of forest harvesting, and formulate guidelines for the conservation of forests; and ● develop forest-based processing industries, small-scale forest-based enterprises, and improve methodologies to account for the economic and non-economic values of forests.
<p>ESTABLISHING AND STRENGTHENING CAPACITIES FOR ASSESSING AND EVALUATING FORESTS AND FORESTLANDS</p> <p>\$750 million (\$230 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● carry out systematic observations of the quality and extent of forest resources, the land available for afforestation, and land tenure.

¹⁴⁰ Agenda 21, chapter 11.

BOX 19. SUSTAINABLE MOUNTAIN DEVELOPMENT ¹⁴¹	
PROGRAMME AREA	ACTIVITIES
& cost per annum (1993-2000)	Governments, with the support of relevant organisations, should:
<p>IMPROVING KNOWLEDGE ABOUT THE ECOLOGY AND SUSTAINABLE DEVELOPMENT OF MOUNTAIN ECOSYSTEMS</p> <p>\$50 million from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● strengthen institutions to generate a multidisciplinary ecological knowledge base on mountain ecosystems; ● provide incentives to local people for the use and transfer of environment friendly technologies, improved farming and conservation practices; ● establish reserves in representative areas; ● identify areas most vulnerable to natural hazards; and ● identify mountain areas threatened by pollution from neighbouring areas.
<p>PROMOTING INTEGRATED WATERSHED DEVELOPMENT AND ALTERNATIVE LIVELIHOOD OPPORTUNITIES</p> <p>\$13 billion (\$1.9 billion from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● develop, by the year 2000, appropriate land-use planning and management for all land in mountain-fed watershed areas; ● undertake measures to prevent soil erosion; ● assess the environmental and social impacts of projects; ● diversify mountain economies (eg tourism); ● promote alternative livelihood opportunities in cottage and agro-processing industries; ● provide incentives to local people and farmers to undertake conservation measures; and ● promote the full participation of women and local communities.

6.4 APPRAISAL OF AGENDA 21

6.4.1 Water

Agenda 21's text on water was perceived by several non-governmental organisations (NGOs) to be weak, achieving little more than maintaining the status quo.¹⁴² The chapter was criticised for failing to discuss ways of dealing with the effects of water problems on society, environment and the economy.¹⁴³ While the institutional and legal aspects of the document point clearly to the issues, there is little indication of how to reverse worsening world water problems. Additional criticisms

¹⁴¹ Agenda 21, chapter 13.

¹⁴² See for example, A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 11; and "AILA Questions Treatment of Water Issue at Summit", *Terra Viva*, 12 June 1992, p. 16.

¹⁴³ See criticisms of the International Association for Water Legislation (AILA) in "AILA Questions Treatment of Water Issue at Summit", p. 16.

were levelled at the limited discussion on water sources other than freshwater¹⁴⁴ (eg converting saline continental water into drinkable water).

Some important principles have, however, been inserted into the Agenda 21 text.¹⁴⁵ These include the need for integrated water management,¹⁴⁶ recognition of the critical role of women in managing and supplying water,¹⁴⁷ treating water as an economic as well as a social good,¹⁴⁸ and the right to water for all users and water-dependent ecosystems.¹⁴⁹

6.4.2 Agriculture

This chapter was lauded as one of the few successful attempts of Agenda 21 to integrate environment and development.¹⁵⁰ One of the reasons for this is the clarity with which the links between environmental degradation and the problems of hunger, oversupply, and trade and price supports are made.¹⁵¹ The text is significant in that it provides a mandate for a global shift towards sustainable agriculture in all aspects of production.¹⁵²

Much of the content is based on the *Den Bosch Declaration*,¹⁵³ derived from the 1991 UN conference on sustainable agriculture and rural development. A range of NGOs were actively involved in formulating the declaration, as were a number of UN agencies including the Food and Agricultural Organisation (FAO), the UN Development

¹⁴⁴ "AILA Questions Treatment of Water Issue at Summit", p. 16.

¹⁴⁵ See Harkavy, *The Earth Summit...*, p. 11.

¹⁴⁶ See for example, Agenda 21, chapter 18, para. 6.

¹⁴⁷ See for example, Agenda 21, chapter 18, paras 12(n), 19, 50(c)(ii), 59(f)(iv), 68(d).

¹⁴⁸ Agenda 21, chapter 18, paras 8, 15-17.

¹⁴⁹ See for example, Agenda 21, chapter 18, para 38(a).

¹⁵⁰ WWF, "WWF Says UNCED Falls Short of its Vision", Press Release, Rio de Janeiro, 13 June 1992.

¹⁵¹ "Sustainable Ag at UN Earth Summit", *Manna* 9(1) (Spring 1992), p. 6; "A Summary of the Proceedings of the UN Conference on Environment and Development 3-14 June 1992", *Earth Summit Bulletin* 2(13) (16 June 1992), p. 3.

¹⁵² "Sustainable Ag at UN Earth Summit", p. 1.

¹⁵³ FAO, *The Den Bosch Declaration and Agenda for Action on Sustainable Agriculture and Rural Development*, Report of the FAO/Netherlands Conference on Agriculture and the Environment, 's-Hertogenbosch, The Netherlands, 15-19 April 1991 (Rome: FAO, 1991).

Programme and UNEP. These agencies strongly supported the incorporation of the document into Agenda 21, which partly explains the present progressive text.¹⁵⁴ A number of NGOs, however, still question the sincerity of the FAO,¹⁵⁵ given its compromised track record.

6.4.3 Desertification and Drought

If adopted, many of the actions proposed by this chapter will constitute important steps towards combating desertification and drought. Of greatest significance to African countries is the call for a UN framework convention on desertification,¹⁵⁶ to be finalised by June 1994. By and large, issues most relevant to Africa - desertification, drought and freshwater management - received minimal attention at the UN Conference on Environment and Development.¹⁵⁷ This, together with the failure of the Climate Convention to consider desertification and drought, resulted in the insistence by many African states that a convention was needed to attract international attention.¹⁵⁸

Although desertification has long been on the UN agenda, it has been perceived as a regional problem rather than a common concern.¹⁵⁹ Past international initiatives to halt desertification brought few results, and a number of reservations were voiced about the initiative at UNCED.¹⁶⁰ There was a good deal of speculation that agreement was reached on the treaty as part of a political ploy to ensure African

¹⁵⁴ "Sustainable Ag at UN Earth Summit", p. 1, 6.

¹⁵⁵ See for example, Hildyard, "Sustaining the Hunger Machine...", pp. 239-243; K. Sesmou, "The Food and Agricultural Organisation of the United Nations: An Insider's View", *The Ecologist* 21(2) (March/April 1991), pp. 47-56. See also "Sustainable Ag at UN Earth Summit", pp. 1, 6.

¹⁵⁶ Agenda 21, chapter 12, para. 40.

¹⁵⁷ O. Anyadike, "For South, Week of Frustration", *Terra Viva*, 8 June 1992, p. 5; O. Anyadike, "Africa: What Real Action will Follow the Summit?", *Terra Viva*, 10 June 1992, p. 8.

¹⁵⁸ See for example, Anyadike, "For South, Week of Frustration", p. 5; Anyadike, "Africa: What Real Action will Follow the Summit?", p. 8; F. Coutu, "'We'll Be Lynched' Without a Convention", *Terra Viva*, 8 June 1992, p. 13; J. Elliott, "Urgent Need for Convention on Deserts", *Earth Summit Times*, 4 June 1992, p. 5.

¹⁵⁹ See Coutu, "'We'll Be Lynched' Without a Convention", p. 13.

¹⁶⁰ See Coutu, "'We'll Be Lynched' Without a Convention", p. 13; J. Elliott, "Nations Agree to Draft Desert Convention", *Earth Summit Times*, 11 June 1992, p. 3; R. Milne, "US Attitude 'Flawed' says Tolba", *Terra Viva*, 13 June 1992, p. 22; "A Summary of the Proceedings of the UN Conference on Environment and Development 3-14 June 1992", p. 3; and "Desert Deadlock", *New Scientist*, 20 June 1992, p. 6.

compliance on other UNCED issues,¹⁶¹ and to weaken the cohesiveness of the G77 countries.¹⁶²

Nonetheless, an international convention on desertification will focus attention on the complexity of the problem and will mobilise finances and technology for the solutions. In addition, it will strengthen existing regional anti-desertification programmes.¹⁶³

6.4.4 Forests

The Agenda 21 text concerning forests was largely obscured at UNCED by attempts to negotiate a statement of principles on the conservation of forests. The agreement which emerged was widely acknowledged to be extremely weak.¹⁶⁴ This was chiefly due to conflict between industrialised countries and developing countries, sovereignty of forests being the divisive issue.

Industrialised countries perceive forests, and tropical forests in particular, as offering a valuable service in the form of carbon sinks, thus offsetting the greenhouse effect. They regard a legally-binding treaty as the best way to conserve existing forests and to prevent deforestation from further contributing to climate change.¹⁶⁵ Since most existing forests are situated in developing countries, developing nations have argued that the demands of the North ignore and undermine the important role which forests play in their national economies. Forests, the South have argued, should be regarded as an

¹⁶¹ For example, the United States supposedly pressurised the European Community to accept the proposal to convene a world conference on desertification, and in return demanded African support for forest initiatives. See T. Deen, "Africans Deny Trade-Off Deal with US on Desertification", *Terra Viva*, 12 June 1992, p. 9; S. Federovisky, "Pessimism is Being Reverted", *Terra Viva*, 11 June 1992, p. 3; Milne, "US Attitude 'Flawed' says Tolba", p. 22; and F. Pearce, "How Green was our Summit?", *New Scientist*, 27 July 1992, p. 12.

¹⁶² See Pearce, "How Green was our Summit?", p. 12.

¹⁶³ See Elliott, "Urgent Need for Convention on Deserts", p. 5; and Elliott, "Nations Agree to Draft Desert Convention", p. 3.

¹⁶⁴ See N.L. Gerson, "NGOs Discuss Forest Text", *Earth Summit Times*, 6 June 1992, p. 10; N.L. Gerson, "North-South Agreement on Forests", *Terra Viva*, 13 June 1992, p. 9; J. Porritt, "Two Worlds, One Planet", *BBC Wildlife Magazine* 10(8) (August 1992), p. 7; D. Runnalls, "Successes and Failures From Rio", *Earth Summit Times*, 15 June 1992, p. 6; and WWF, "WWF Says UNCED Falls Short of its Vision"; WWF, "Collapse of Forest Negotiations at UN", Press Release, 14 June 1992.

¹⁶⁵ See L. Makabenta, "Forests Become the Critical Issue on Agenda XXI Debates", *Terra Viva*, 10 June 1992, p. 10; Novaes, "Every Man's Jungle: A Burning Issue", p. 11; Ullsten, "Urgent Need for Forest Commission", p. 6; and UN, "Saving the Forests: Forging a Global Compact".

issue of national sovereignty, akin to oil resources. They fear that a legally-binding convention will constrain their capacity to use these resources.¹⁶⁶ Other issues of contention include the right to development, recognition of the rights of indigenous peoples, external debt, the valuation of forest products from developing countries, and trade in forest products.¹⁶⁷

The final statement of non-binding principles which was adopted ambiguously refers to "the need to resort to all types of international accords to promote cooperation in sustainable forest management".¹⁶⁸ The majority of NGOs at UNCED denigrated the document as retrogressing from existing international agreements, including World Bank forest policy.¹⁶⁹ There is little in the statement to halt deforestation or to protect the rights of forest dwellers.¹⁷⁰

The adopted text of Agenda 21 is far more general and thus less controversial than the statement of principles on forests. It is regarded by NGOs as a meaningful basis on which to move ahead on a work programme for the next decade.¹⁷¹ Significantly, it recognises the value of indigenous forest management and the importance of local participation in decision-making processes.¹⁷²

¹⁶⁶ See Makabenta, "Forests Become the Critical Issue on Agenda XXI Debates", p. 10; V. Menezes, "South Outraged by North's Forest Convention Ideology", *Earth Summit Times*, 11 June 1992, p. 5; Novaes, "Every Man's Jungle: A Burning Issue", p. 11; E. Salim, "Create Money Reasons to Save Forests", *Earth Summit Times*, 7 June 1992, p. 6; Third World Network, "Southern NGOs Denounce Bush Forest Initiative", *SUNS*, 10 June 1992, p. 5; Ullsten, "Urgent Need for Forest Commission", p. 6; UN, "Saving the Forests: Forging a Global Compact"; and "Controversy Over Forests Rages On", *Third World Economics*, no. 39 (16-30 April 1992), p. 11.

¹⁶⁷ See M.E. Hurtado, "Northern Obsession with Forests Boggles the Mind", *Terra Viva*, 5 June 1992, p. 12; Makabenta, "Forests Become the Critical Issue on Agenda XXI Debates", p. 10; and Salim, "Create Money Reasons to Save Forests", p. 6.

¹⁶⁸ See the preamble to the "Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests" (A/CONF.151/6/Rev.1), 13 June 1992. See also Y. Sharma, "US Drops its Plan for a Forest Convention", *Terra Viva*, 13 June 1992, p. 8.

¹⁶⁹ See Gerson, "North-South Agreement on Forests", p. 9; and WWF, "Collapse of Forest Negotiations at UN". The World Rainforest Movement has produced "An NGO Version of an Effective Forest Statement", see *Earth Summit Briefings*, no. 11 (1992). Similarly, WWF has listed proposals which they feel should form the basis for a Global Forest Convention - see WWF, "Combating Deforestation", May 1992. See also, the International NGOs and Social Movements Forum, "Treaty on Forests", Global Forum, Rio de Janeiro, June 1992; and R. Sharma, "Of People, Forests and Beliefs", *Ecoforum* 16(2), p. 9.

¹⁷⁰ See Gerson, "NGOs Discuss Forest Text", p. 10; Gerson, "North-South Agreement on Forests", p. 9; P. Vierci, "Brazilian Indians Demand Strong Statement on Forests", *Terra Viva*, 10 June 1992, p. 6; and WWF, "Collapse of Forest Negotiations at UN".

¹⁷¹ See for example, Harkavy, *The Earth Summit...*, p. 12.

¹⁷² Agenda 21, chapter 11, paras 4, 14, 31. See also Harkavy, *The Earth Summit...*, p. 12.

6.5 IMPLICATIONS FOR SOUTH AFRICA

The proposals from Agenda 21, in particular those relating to sustainable agriculture, provide valuable pointers for South Africa. Land redistribution, as well as equitable resource distribution, form cornerstones in the creation of a democratic South Africa. The challenge is thus to combine redistribution with more sustainable practices. The two are not necessarily incompatible. On the contrary, redressing the imbalances of the past could well be seized as an opportunity to promote sustainable development in South Africa.

6.5.1 Water

Many of the actions proposed by Agenda 21 regarding freshwater management match recent South African proposals aiming to redress past inadequacies in water management. For example, a national water management strategy following many of the President's Council recommendations is presently being defined by the Department of Forestry and Water Affairs.¹⁷³ The strategy is purportedly integrative and holistic, aiming to ensure the equitable and sustainable provision of water to all user groups and the involvement of these groups in decision-making processes.¹⁷⁴ Equally, the African National Congress (ANC),¹⁷⁵ Inkatha Freedom Party (IFP)¹⁷⁶ and President's Council's¹⁷⁷ viewpoints correspond to Agenda 21 in promoting the conservation and protection of wetlands and in recognising the right of the environment to water. There is a similar matching of policies as regards the "polluter pays" principle and the need for increased efficiency in water use. There are, however, a number of Agenda 21 recommendations which require attention.

¹⁷³ DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 133-134.

¹⁷⁴ *Ibid.*

¹⁷⁵ African National Congress (hereafter cited as the ANC), "Mayibuye iAfrika: An Introduction to ANC Environmental Policy" (n.p., n.d.).

¹⁷⁶ Inkatha Freedom Party, "Environmental Policy of the Inkatha Freedom Party", *History in the Making* 3(1) (1991), p. 51.

¹⁷⁷ President's Council, *Report of the Three Committees ...*, pp. 36-44.

Firstly, although water research and assessment are promoted by the President's Council¹⁷⁸ there is little provision for training local communities in water management techniques. Furthermore, whilst both the President's Council¹⁷⁹ and the ANC¹⁸⁰ recognise the need to manage water on a catchment basis, the former does not refer to the need to integrate community management of water into the context of overall planning. There are, moreover, no mechanisms in the national water management strategy to ensure that the concerns of inarticulate and disempowered people will be adequately expressed. Both the President's Council¹⁸¹ and the ANC¹⁸² advocate a sliding scale of tariffs for optimal water usage yet neither promote the use of charging mechanisms which reflect the true cost of water. Finally, there is broad consensus that the provision of a basic water and sanitation infrastructure is a national priority¹⁸³ but the institutional, legal and financial mechanisms to achieve this are unclear.¹⁸⁴

6.5.2 Sustainable Agriculture and Rural Development

Agenda 21's call for a review of national and regional agricultural policies is in keeping with the widely accepted need to restructure agriculture in South Africa.¹⁸⁵ There is, however, some controversy as to how this should be best effected. Sustainable agriculture, although now firmly adopted by the FAO, UNDP, and UNEP, is still regarded with scepticism, both in South Africa and in other regions where commercial agriculture is practiced.¹⁸⁶ Part of the reason for this lies in the uncertainty of adopting a new method. Additionally, the domination of farmer's support services by multinational companies who make chemical and seed inputs contributes to sustainable

¹⁷⁸ Ibid., pp. 42-44.

¹⁷⁹ Ibid., p. 43.

¹⁸⁰ ANC, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy".

¹⁸¹ President's Council, *Report of the Three Committees...*, p. 44.

¹⁸² ANC, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy".

¹⁸³ See for example, President's Council, *Report of the Three Committees...*, p. 43.

¹⁸⁴ See L. Abrams, *The Rural Development Crisis* (Johannesburg: Rural Advice Centre, 1992), pp. 1-29.

¹⁸⁵ See for example, Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 189; DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 55; Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 29; and Giliomee, "Agriculture", p. 745.

¹⁸⁶ Cooper, "Reaping a Different Harvest", pp. 59-60.

agriculture not being practiced widely.¹⁸⁷ Hence its limited consideration in documents discussing agricultural restructuring in South Africa.

Key elements of sustainable agriculture include crop diversification, avoiding harmful pesticides, farming appropriate animals and crops and minimising the use of external ("off farm") inputs.¹⁸⁸ Each of these factors is endorsed by Agenda 21. These principles are extremely relevant to agriculture in South Africa, dominated as it is by large-scale monocropping, chemical overuse and mostly inappropriate crops and livestock.¹⁸⁹ The lower production costs and labour-intensive nature of sustainable agriculture indicate that this approach might be more appropriate for local conditions.¹⁹⁰ Although yields are sometimes lower than from conventional farming, reduced production costs more than compensate for this.¹⁹¹

Of the individual components of sustainable agriculture, crop diversification, integrated pest management, improved inter-cropping systems and the promotion of low-input farming and permaculture are supported by the ANC.¹⁹² The President's Council, on the other hand, makes scant reference to the need for fundamental reform of present agricultural methods. It does, however, promote the use of biological rather than chemical pesticides.¹⁹³

For sustainable agriculture to work, extension workers will need to be retrained, state subsidies redirected and service industries refocused. This will have to occur hand

¹⁸⁷ Cooper, "Reaping a Different Harvest", p. 59; Dor, "The Politics of Food: Monopoly Profits and Hunger", pp. 27-29; Emanuel, "The Pesticide Trade: Paying the Price for Profits", pp. 28-30.

¹⁸⁸ See for example, Cooper, "Reaping a Different Harvest", pp. 58-60; Johns, "Next Year Will be a Good Year ... All You Need are Drought-Busting Solutions", pp. 38-41; and J. Seymour, "The Organic Alternative", in *Far From Paradise*, eds J. Seymour & H. Girardet (Hants: Green Print, 1988), pp. 195-203.

¹⁸⁹ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 184-186; Cooper, "Reaping a Different Harvest", pp. 56-58. See also M. de Klerk, "Restructuring the Rural Economy: A Strategy for Land Access - Editorial Review", *Development Southern Africa* 7 (October 1990), pp. 413-429; and Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, pp. 28-29.

¹⁹⁰ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", p. 192.

¹⁹¹ Johns, "Next Year Will be a Good Year ... All You Need are Drought-Busting Solutions", p. 41; Lean et al., "The Spread of Agrochemicals", pp. 20-21.

¹⁹² ANC, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy"; ANC, *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 28.

¹⁹³ President's Council, *Report of the Three Committees...*, pp. 26-27.

in glove with ongoing rural development and the imminent process of land reform.¹⁹⁴ Agenda 21 distinctly couples rural development with sustainable agriculture, focusing on equitable access to resources, community involvement and clear land rights. ANC policy¹⁹⁵ addresses similar issues, linking rural development and agricultural reform, and echoes Agenda 21 in promoting the provision of appropriate infrastructure, training, credit and services to rural areas, and the strengthening of rural institutional capacities. These elements are particularly crucial in South Africa, although a cohesive strategy to implement them has not yet been devised.¹⁹⁶ Neither the ANC nor the President's Council integrate employment needs and non-agricultural opportunities as suggested by Agenda 21, a proposal which has tremendous scope in South Africa. For example, local communities and farmers could be provided with incentives and resources to reclaim degraded lands or to develop rural infrastructure.

One way to increase rural productivity and rejuvenate the land could be through agroforestry, which integrates trees with crops, animals and the land use practices of people.¹⁹⁷ This option is encouraged by Agenda 21, which links agroforestry to rural energy needs. Agenda 21 further promotes a mix of renewable energy sources to reduce dependence on wood. Although these proposals have enormous relevance in South Africa, neither of them have been seriously pursued. For instance, renewable energy sources have received only a fraction of the government's energy budget,¹⁹⁸ despite their increasing acclaim as viable energy alternatives in rural areas.¹⁹⁹ Similarly, the development of agroforestry in South Africa, although now receiving increasing attention, lags 20 years behind the rest of Africa.²⁰⁰ It is certainly an area which

¹⁹⁴ Abrams, *The Rural Development Crisis*, pp. 1-29; Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 187-190.

¹⁹⁵ ANC, *Ready to Govern...*, p. 28.

¹⁹⁶ Abrams, *The Rural Development Crisis*, pp. 1-29.

¹⁹⁷ R. Madams, "The Failings of Forestry: The Eucalyptus Syndrome and the Need for Social Forestry", *New Ground*, no. 5 (Spring 1991), pp. 12-13; J. Searll, "Agroforestry: An Ancient Practice ... A New Science", *New Ground*, no. 6 (Summer 1991/92), p. 48.

¹⁹⁸ The Environmental Monitoring Group report that only 0.1% of the amount spent on research and development of nuclear energy is directed towards renewable energy sources. See Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 58.

¹⁹⁹ DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 26-27.

²⁰⁰ Searll, "Agroforestry: An Ancient Practice ... A New Science", p. 48.

warrants substantial research²⁰¹ and in this regard, South Africa is fortunate to have strong research and management capacities, and thus be well-placed to promote the endeavour.

6.5.3 Drought and Desertification

Of all Agenda 21's programmes, those dealing with desertification and drought are most pertinent to southern Africa. These processes have been locally researched and debated since the mid 19th century.²⁰² However, the crisis of the current drought and the hurried responses characterising the relief programmes reveal the inadequacies of past and present schemes.²⁰³ Virtually every proposal of Agenda 21 regarding drought requires attention in South Africa. For example, the state has no current national strategy for drought preparedness, no adequate early warning or information system and no drought relief policy.²⁰⁴ Moreover, little insight has been displayed as to the structural causes of drought.²⁰⁵ For example, government "drought relief" not only chiefly benefits white farmers, serving to reduce their debt, but omits any conditions requiring the farmer to engage in environmentally sound farming practices.²⁰⁶

The acceptance of South Africa into the Southern African Development Co-ordination Conference (SADCC) (or, rather the newly-formed Southern African Development Community (SADC)) will strengthen many of the actions which Agenda 21 proposes. For instance, South Africa has an important regional role to play in sharing technical expertise and information and in assisting to build a grain reserve.²⁰⁷ Regional cooperation will additionally be important to develop and promote more appropriate, drought-resistant grains. In doing so, farming methods would be brought

²⁰¹ Madams, "The Failings of Forestry: The Eucalyptus Syndrome and the Need for Social Forestry", pp. 12-13.

²⁰² See DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 95.

²⁰³ See for example, National Consultative Forum on Drought, "The Current Drought Situation in South Africa", Drought Update no. 3, 29 September 1992; and "State of Chaos: Government Response to Drought is Inadequate and Misdirected", pp. 29-30.

²⁰⁴ Consultative Forum on Drought, "Root Cause and Relief Constraint Report"; "State of Chaos: Government Response to Drought is Inadequate and Misdirected", pp. 29-30.

²⁰⁵ *Ibid.*

²⁰⁶ "State of Chaos: Government Response to Drought is Inadequate and Misdirected", p. 29.

²⁰⁷ P. Vale & D. Catling, "Horror on our Doorstep", *Sunday Times*, 10 May 1992. See also Ansell et al., "Eleven Countries in Search of a Community", *Africa South & East*, November 1992, pp. 10-12.

into line with the physical characteristics of the region and would thus be more sustainable.²⁰⁸

The significance of Agenda 21's proposals on desertification is difficult to determine, particularly since the processes involved in South Africa are still poorly understood. It may well be prudent, however, to heed the "precautionary principle" advocated by UNCED when considering desertification, particularly in the face of climate change and increasing aridity. Both the President's Council Report²⁰⁹ and an ANC discussion document²¹⁰ recognise desertification as a concern, the former recommending that the issue is tackled holistically. Rehabilitative and preventive measures for desertified lands are promoted by both documents, reflecting Agenda 21's proposals.

6.5.4 Forests

Finally, Agenda 21 points to severe inadequacies in commercial forestry practices in South Africa. In the first instance, the large-scale and expanding afforestation programmes presently underway involve alien species, often in upper catchment areas.²¹¹ This has severe implications for a drought-prone country like South Africa. Secondly, the development of commercial forests is directed towards pulp and paper and the export market, rather than towards satisfying people's basic needs for firewood and building materials.²¹² These deficiencies are recognised to a limited extent by ANC policy²¹³ which aims to review the expansion of forestry on high potential agricultural land. Conversely, the President's Council Report²¹⁴ actively promotes the expansion of commercial forestry, neglecting to consider the detrimental effects.

²⁰⁸ Johns, "Next Year Will be a Good Year ... All You Need are Drought-Busting Solutions", pp. 38-41.

²⁰⁹ President's Council, *Report of the Three Committees...*, pp. 16-17.

²¹⁰ M. Sisulu & S. Sangweni, "Future Environmental Policy for a Changing South Africa", *History in the Making* 3(1) (1991), p. 41.

²¹¹ Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 186-187; DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 92; Keaton, "Forests Threaten Water Resources".

²¹² Cooper, "From Soil Erosion to Sustainability: Land Use in South Africa", pp. 186-187; Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 26.

²¹³ ANC, *Ready to Govern...*, p. 28.

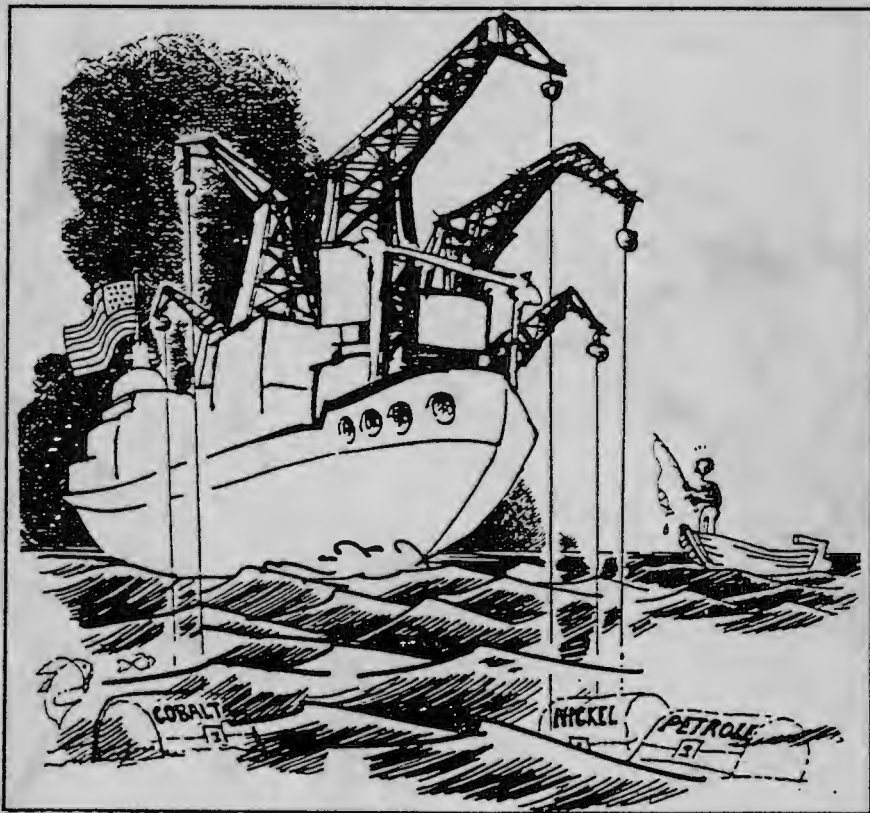
²¹⁴ President's Council, *Report of the Three Committees...*, pp. 22-23.

This concludes Chapter 6 which has detailed the global and South African agricultural and water crises as well as problems of deforestation and arid land deterioration. Agenda 21 proposals concerning these issues have been assessed as have the implications for South Africa. Chapter 7 will describe aspects of Agenda 21 which deal with protection of the oceans, coastal environments and marine resources. □

Chapter 7

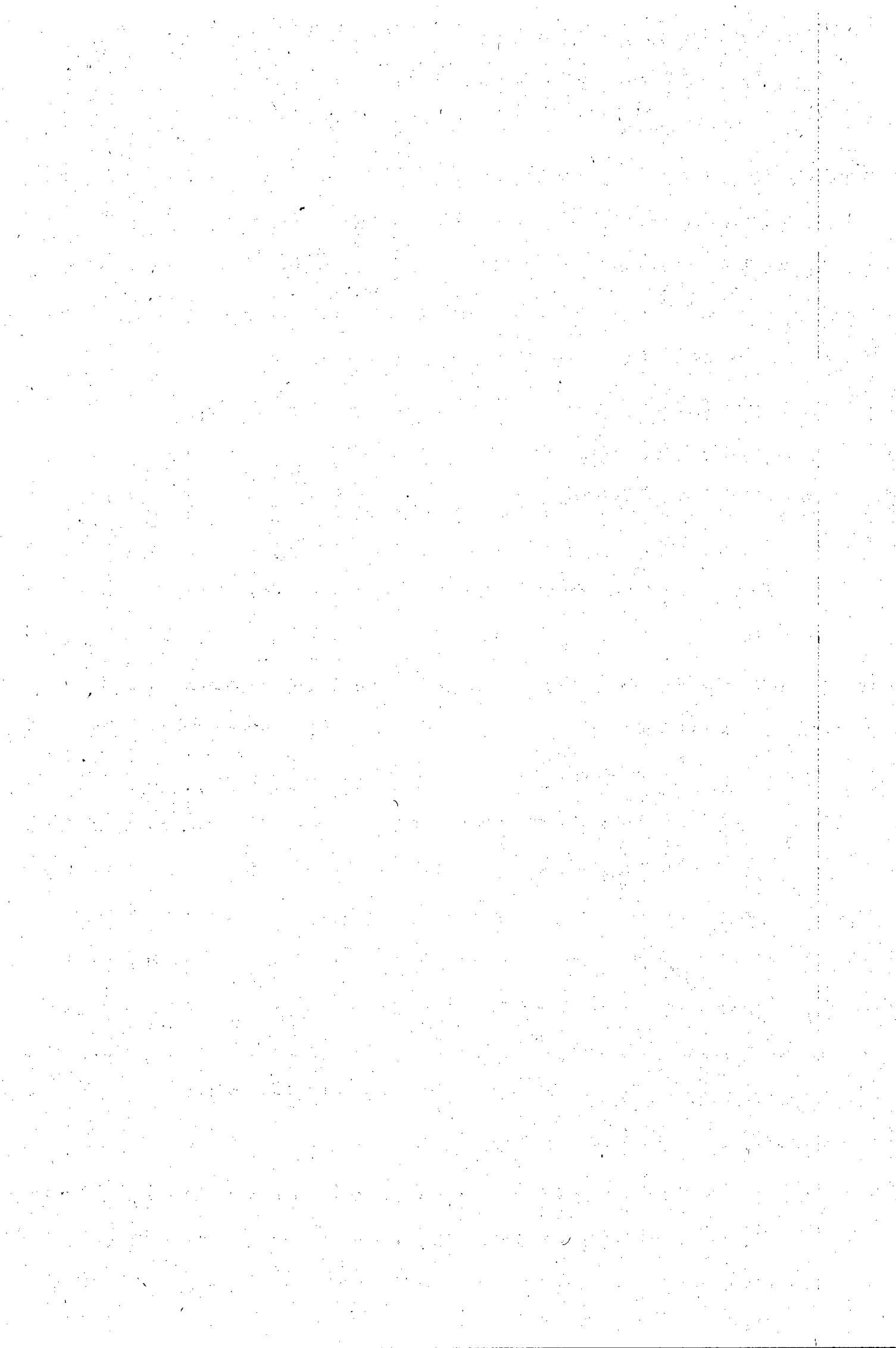
THE COMMON WORLD:

PROTECTION OF THE OCEANS



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Chapter 7

THE COMMON WORLD: PROTECTION OF THE OCEANS

7.1 THE BASIS FOR ACTION: THE GLOBAL MARINE AND COASTAL ENVIRONMENT

Oceans cover more than two-thirds of the planet's surface and are essential to global life-support systems.¹ Because humankind treats oceans as common property, they have been misused and exploited, to the extent that several oceans - particularly seas which are enclosed or semi-enclosed - are now severely degraded.²

Degradation results from a range of sources and activities. Shipping, dumping and other sea-based activities certainly contribute significantly to marine pollution,³ but most damage to coastal areas is caused by human activities on land.⁴ Urban development, agriculture, industry, tourism and coastal developments all have detrimental effects on the marine environment which are likely to worsen as coastal populations increase.⁵ At present, more than half of the world's population live within

¹ The World Conservation Union, the United Nations Environment Programme and the World Wide Fund For Nature (hereafter cited as the IUCN, UNEP, WWF), *Caring for the Earth* (Gland, 1991), p. 150.

² World Commission on Environment and Development (hereafter cited as the WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), pp. 262-264.

³ Agenda 21, chapter 17, para. 18. See also Intergovernmental Oceanographic Commission (hereafter cited as IOC) of the United Nations Educational, Scientific and Cultural Organisation (hereafter cited as UNESCO), 25th Session of the Executive Council, 20 January 1992, *Proposal for Strategies for the Protection and Development of the Oceans and Coastal Areas* (IOC/EC-XXV/8), annex 2; G. Lean, D. Hinrichsen & A. Markham, *Atlas of the Environment* in "Direct Discharges on the Seas or via Rivers Amount to 44 Percent of the Total Pollution at Seas", *Terra Viva*, 13 June 1992, pp. 18-19.

⁴ Ibid.

⁵ United Nations (hereafter cited as the UN), "Sustaining Life in the Oceans: Meeting the Challenge of Development", *Earth Summit in Focus*, no. 4 (1992).

60 km of the shoreline;⁶ within the next 30 years this figure is projected to increase to three-quarters of the world's population.⁷

In addition to these impacts, new fishing technologies, expanding fleets, and the emergence of foreign fleets fishing away from home states, have resulted in a fivefold increase in world commercial marine fish catches over the last 40 years.⁸ Marine fisheries currently yield 80-90 million tons of fish and shellfish per year, 95% of which is taken from Exclusive Economic Zones (EEZ - an area extending 200 nautical miles from the coast), and 5% from the high seas (beyond the EEZ).⁹ Yet the Food and Agricultural Organisation estimates that the world's fleets cannot catch more than 100 million tons without critically depleting stocks.¹⁰ In other words, we are rapidly moving to the limits of sustainability of ocean fish resources. Indeed, many nations have already fished well beyond sustainable limits.¹¹

Large-scale commercial fishing is largely to blame for these stock collapses.¹² As well as harvesting unsustainably, large fishing conglomerates often squeeze small-scale fisherfolk out of the market and this results in the loss of a sustainable livelihood for local communities.¹³ For sustainable and equitable management of marine resources, these problems have to be addressed.

Both national and high seas fisheries face mounting problems in the form of over-fishing, poaching by foreign fleets in territorial waters, ecosystem degradation,

⁶ Statement by the IOC of UNESCO, Rio de Janeiro, 1992; IUCN, UNEP, WWF, *Caring for the Earth*, p. 150.

⁷ D.R. Kester, G.E.B. Kullenberg & M. Cole, "A Global Ocean Observing System", *Nature & Resources* 28(1) (1992), p. 26; IUCN, UNEP, WWF, *Caring for the Earth*, p. 150.

⁸ G. Palmer, "Towards a New Oceans World Order", address to Oceans Day at the Global Forum, Rio de Janeiro, 8 June 1992; IUCN, UNEP, WWF, *Caring for the Earth*, p. 151.

⁹ Agenda 21, chapter 17, paras 44, 70.

¹⁰ For fisheries production see Food and Agriculture Organisation (hereafter cited as the FAO), *Yearbook of Fisheries Statistics: Catches and Landings* (Rome: UN, published annually). For estimates of sustainable harvests see M.A. Robinson, *Trends and Prospects in World Fisheries* (Rome: FAO, 1984).

¹¹ D.H. Meadows, D.L. Meadows & J. Randers, *Beyond the Limits* (London: Earthscan, 1992), p. 185.

¹² UN, "Sustaining Life in the Oceans...".

¹³ See for examples, address by J.C. Crosbie, Minister of Fisheries and Oceans for Canada, to Oceans Day at the Global Forum, Rio de Janeiro, 8 June 1992; Palmer, "Towards a New Oceans Order"; IUCN, UNEP, WWF, *Caring for the Earth*, p. 155; UN, "Sustaining Life in the Oceans"; and "Future of the Blue Planet", in *Proceedings of the International Ocean Forum* (Halifax: n.p., 1991), pp. 9-10.

excessive fleet sizes and unselective fishing gear.¹⁴ High seas fisheries in particular suffer from inadequate management and a lack of cooperation between states.¹⁵ This has serious impacts for migratory fish species and straddling stocks (fish whose distributions cross between the EEZ of neighbouring countries or between these zones and the high seas).¹⁶

Effective management is further hindered by inadequacies and uncertainties in scientific knowledge which limit the ability to make predictions and assess environmental change.¹⁷ This is clearly undesirable in the face of climate change, sea-level rise and ozone depletion. There is thus a critical need to restructure and reinforce global information systems, develop response strategies, and undertake precautionary measures to diminish the risks and effects of global environmental change.¹⁸

7.1.1 International legislation

The United Nations Convention on the Law of the Sea (UNCLOS)¹⁹ covers all forms of marine pollution and establishes the right of coastal states to an EEZ. It further details the rights and obligations of states with respect to the conservation and utilisation of marine resources of the EEZ and the high seas. Although not yet in force, many of the provisions of UNCLOS are already observed.²⁰ However, evidence suggests a lack of compliance with regard to its provisions concerning the high seas.²¹

¹⁴ Agenda 21, chapter 17, paras 45, 71; UN, "Sustaining Life in the Oceans ...".

¹⁵ Agenda 21, chapter 17, para. 45; address by Crosbie to Oceans Day.

¹⁶ Ibid.

¹⁷ Agenda 21, chapter 17, para. 97. See also statement by the IOC of UNESCO, Rio de Janeiro.

¹⁸ Ibid.

¹⁹ Palmer, "Towards a New Oceans Order"; UN, General Assembly, *Report of the Secretary-General on the Protection and Preservation of the Marine Environment (A/CONF.151/10)*, 30 April 1992.

²⁰ Palmer, "Towards a New Oceans Order".

²¹ Address by Crosbie to Oceans Day.

7.2 THE BASIS FOR ACTION: THE SOUTH AFRICAN MARINE AND COASTAL ENVIRONMENT

International concerns apply equally in South Africa, edged as it is by 3 000 km of coastline. Over 800 million litres of domestic sewage and industrial waste are discharged into South African waters every day from pipelines.²² Added to this is the unknown and uncontrolled amount of pollution entering the sea via rivers or stormwater drains from urban and rural sources.²³ Since South Africa is situated on one of the world's busiest oil-tanker routes, oil spills also contribute to South African marine pollution.²⁴

The absence of a coastal policy and consequent lack of effective control over coastal zone development has resulted in the severe degradation of several coastal areas in South Africa.²⁵ This has mostly taken the form of inappropriate urban and resort developments, particularly along the southern and south-eastern shores of the Cape as well as the Natal coastline.²⁶ On the west coast, extensive stretches of shore have been prospected and mined by diamond-mining companies.²⁷ Heavy-mineral mining has likewise had an impact on substantial areas of coastal dune forest on the Natal north coast.²⁸ In some areas such as the Transkei coast, the intertidal zone has been severely exploited.²⁹

²² "Pipeline Discharges of Effluents to Sea", in *South African National Scientific Programmes Report*, eds D.A. Lord, F.P. Anderson & J.K. Basson, no. 90 (1984), p. 108.

²³ Department of Environment Affairs (hereafter cited as DEA), *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), p. 106; F. Manuel & J. Glazewski, "The Oceans: Our Common Heritage", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), p. 205.

²⁴ *Ibid.*

²⁵ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), pp. 89-90.

²⁶ S. Schneier, Coastal Zone Management Unit, Environmental Conservation, DEA, South Africa, pers. comm. See also various articles in *Veld & Flora* 77(4) (December 1991).

²⁷ See J.J. Gurney et al., "Offshore Minerals", in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), pp. 381-390.

²⁸ Gurney et al., "Offshore Minerals", pp. 396-397; M. Stanford, "Mining the Dunes", *New Ground*, no. 4 (Winter 1991), pp. 17-19; pers. obs.

²⁹ P.A.R. Hockey & C.D. Buxton, "Conserving Biotic Diversity on Southern Africa's Coastline", in *Biotic Diversity in Southern Africa*, ed. B.J. Huntley (Cape Town: Oxford University Press, 1989), p. 301; President's Council, *Report of the Three Committees...*, p. 90.

Although a number of marine reserves have been established on the South African coastline,³⁰ the present system does not afford adequate protection to intertidal systems or to different ocean regimes off the coastline.³¹ Since the land/sea interface represents a focal point for many human activities, the exclusion of seaward areas in many reserves represents a major shortcoming of conservation efforts.³²

South African coastal waters, particularly the upwelling regions off the west coast, are very rich in nutrients and consequently highly productive.³³ Approximately 770 000 tons of fish are caught commercially per annum, with a wholesale value of over R850 million.³⁴ Historically, a short-term profit motive characterised the fishing industry,³⁵ and resulted in the overexploitation of many marine resources.³⁶ Severe fish population declines, together with the declaration of an EEZ and the signing of UNCLOS by South Africa, have resulted in a longer-term view, and present trends indicate that the management of marine resources in South Africa is progressively improving.³⁷

7.3 AGENDA 21: PROTECTION OF THE OCEANS

Agenda 21 addresses the marine environment in seven programme areas - common themes are listed in Box 20. Programme areas include the management of coastal areas (Box 21); marine environmental protection (Box 22); the sustainable use and conservation of marine living resources of the high seas and of national jurisdiction

³⁰ President's Council, *Report of the Three Committees...*, p. 90.

³¹ Ibid.

³² See A. Heydorn, J. Glazewski & B. Glavovic, "The Coastal Zone", in *Environmental Management in South Africa*, pp. 669-689.

³³ V. Shannon, "The Physical Environment", in *Oceans of Life*, eds A.I.L. Payne & R.J.M. Crawford (Cape Town: Vlaeberg, 1989), pp. 12-27.

³⁴ President's Council, *Report of the Three Committees...*, p. 69.

³⁵ P. Britz, "Should SA's Fishing Industry be Nationalised?", *Cape Coastwatch* (Summer 1991), p. 30; Manuel & Glazewski, "The Oceans: Our Common Heritage", pp. 201-203.

³⁶ The collapse of the pilchard industry in the late 1960s is a case in point, see M.J. Armstrong & R.M. Thomas, "Clupeoids", in *Oceans of Life*, pp. 105-106.

³⁷ See for example, Britz, "Should SA's Fishing Industry be Nationalised?", p. 30; and A.I.L. Payne & R.J.M. Crawford, "The Major Fisheries and their Management", in *Oceans of Life*, pp. 50-61.

(Box 23); addressing critical uncertainties for the management of the marine environment and climate change (Box 24); and the strengthening of international cooperation and coordination (Box 25).

BOX 20. PROTECTION OF THE OCEANS: COMMON THEMES ³⁸

- Protection of the marine environment should be integrated into relevant environmental, social and economic development policies.
- Preventive, precautionary and anticipatory approaches should be applied to plans, programmes and projects.
- Measures should be taken to maintain the biodiversity and productivity of marine species and habitats.
- Critical habitats and endangered marine species should be conserved and restored.
- Living standards of coastal populations should be improved to reduce degradation of the coastal environment.
- Environmentally sound technology and sustainable practices should be promoted, and incentives developed to apply clean technologies.
- The development and application of methods which reflect changes in value resulting from uses of coastal and marine areas should be applied.
- The use of risk and environmental impact assessments should be promoted to help ensure an acceptable level of environmental quality.
- Public education, awareness and information programmes should be initiated.
- NGOs, resource user groups, local communities and the academic and private sectors should be provided with opportunities for consultation and participation in planning and decision-making.
- The interests of local communities should be taken into account, in particular their right to subsistence.

BOX 21. INTEGRATED MANAGEMENT AND SUSTAINABLE DEVELOPMENT OF COASTAL AREAS ³⁹

- States should establish national coordinating mechanisms for the integrated management and sustainable development of coastal and marine areas and their resources.

These mechanisms could provide for:

- initial impact assessments and follow-up;
 - the improvement of coastal human settlements;
 - contingency plans for disasters, including climate change and sea-level rise;
 - the preparation of coastal profiles identifying critical areas;
 - the implementation of policies, plans and programmes relating to coastal management;
 - human resource development and training; and
 - the development and implementation of environmental quality criteria.
- The annual cost of implementing these activities is estimated at \$6 billion, including \$50 million from the international community on grant or concessional terms.

³⁸ Agenda 21, chapter 17.

³⁹ Agenda 21, chapter 17, programme area (a).

BOX 22. MARINE ENVIRONMENTAL PROTECTION ⁴⁰

Land-Based Activities

In preventing marine degradation from land-based activities, states, with the support of relevant organisations should:

- update, uphold and strengthen the Montreal Guidelines for the Protection of the Environment from Land-Based Sources;
- assess the effectiveness of existing regional agreements and initiate new agreements where appropriate; and
- provide guidance on technologies to deal with marine pollution from land-based sources.

As concerns sewage and other sources of pollution, governments should:

- incorporate sewage concerns in all coastal development plans;
 - locate coastal outfalls so as to maintain an "acceptable level of environmental quality";
 - promote primary treatment of sewage discharged to rivers and seas;
 - establish and improve regulatory and monitoring programmes to control effluent discharges and emissions;
 - eliminate or reduce emissions of organohalogenes and other synthetic organics which "threaten to accumulate to dangerous levels" in the marine environment;
 - control nitrogen and phosphorus inputs into coastal waters;
 - promote the use of less harmful pesticides and fertilisers and prohibit those which are environmentally unsound;
 - adopt new initiatives to control non-point source pollutants;
 - control and prevent coastal erosion and siltation; and
 - develop and implement environmentally sound land-use techniques to reduce run-off.
- An intergovernmental meeting on protection of the marine environment from land-based activities is to be convened by UNEP.

Sea-Based Activities

With regard to shipping, states should:

- ratify relevant conventions and protocols and enforce MARPOL discharge provisions more rigorously;
 - update the IMO Code of Safety for Nuclear Merchant Ships and consider a code on the carriage of irradiated nuclear fuel;
 - adopt rules on ballast water discharge to prevent the spread of non-indigenous organisms; and
 - assess the need for stricter international regulations to reduce accident and pollution risks from cargo ships.
- As concerns dumping, states should support wider ratification, implementation and participation in relevant Conventions, including a future strategy for the London Dumping Convention.
- States should also assess existing regulatory measures for emissions from offshore oil and gas platforms, and establish port facilities for the collection of residues from ships.

Additional measures which should be taken by states include:

- reducing water pollution caused by anti-fouling paint, ratifying the Convention on Oil Pollution Preparedness, Response and Cooperation, and cooperating on oil and chemical spill response centres internationally.
- The annual cost of implementing these activities is estimated to be \$200 million from the international community on grant or concessional terms.

⁴⁰ Agenda 21, chapter 17, programme area (b).

BOX 23. THE SUSTAINABLE USE AND CONSERVATION OF MARINE LIVING RESOURCES⁴¹

Common Themes

For both high seas fishing and areas falling under national jurisdiction, states are implored to:

- ensure marine resources are managed in accordance with the UN Convention on the Law of the Sea (UNCLOS);
- prohibit dynamiting, poisoning and other destructive fishing practices;
- reduce wastage, post-harvest losses and discards, and improve techniques of processing, distribution and transportation;
- cooperate for the conservation, management and study of cetaceans;
- develop the potential of marine resources to meet human nutritional needs;
- maintain or restore populations of marine species at levels that can produce the maximum sustainable yield; and
- promote the development and use of selective fishing gear and practices that minimise waste in the catch of target species and minimise by-catch of non-target species.

High Seas

As regards high seas fishing, states are called on to:

- give full effect to the provisions of UNCLOS, with particular regard to straddling stocks and highly migratory species;
 - define and identify appropriate management units;
 - convene an intergovernmental conference under UN auspices, regarding the implementation of UNCLOS provisions on straddling fish stocks and highly migratory fish species;
 - minimise incidental catch;
 - monitor and control high seas vessels to ensure compliance with conservation and management rules, and deter reflagging of vessels to avoid compliance with these rules;
 - fully implement the General Assembly resolution on pelagic drift-net fishing; and
 - cooperate internationally and regionally to assess resource potentials and to develop profiles of all stocks.
- The annual cost of implementing these activities is estimated to be \$12 million from the international community on grant or concessional terms.

Living Marine Resources under National Jurisdiction

Concerning marine resources of the exclusive economic zone states should:

- assess the potential of marine resources and implement strategies for their sustainable use;
 - explore the scope for recreational and tourist activities based on marine living resources, including those for providing alternative sources of income;
 - develop mariculture, aquaculture and small-scale, deep sea and oceanic fisheries if appropriate;
 - strengthen legal and regulatory frameworks;
 - support the sustainability of small-scale artisanal fisheries by recognising the rights of small-scale fishworkers and local communities, developing systems to record traditional knowledge concerning marine systems, and through integrating small-scale fisheries in coastal planning; and
 - designate marine ecosystems exhibiting high levels of biodiversity and productivity and critical habitat areas as protected areas - priority should be given to coral reefs, estuaries, wetlands, seagrass beds and other spawning and nursery areas.
- The annual cost of implementing these activities is estimated to be \$6 billion, including \$60 million from the international community on grant or concessional terms.

⁴¹ Agenda 21, chapter 17, programme areas (c) and (d).

**BOX 24. ADDRESSING CRITICAL UNCERTAINTIES FOR THE
MANAGEMENT OF THE MARINE ENVIRONMENT AND CLIMATE
CHANGE ⁴²**

In committing themselves to understand the marine environment and its role in global processes, states and relevant organisation should:

- coordinate observation programmes for coastal and near-shore phenomena related to climate change;
- improve forecasts of marine conditions for the safety of inhabitants of coastal areas;
- adopt measures to cope with and adapt to climate change and sea-level rise;
- initiate research programmes to determine the marine biological effects of ultraviolet light due to ozone depletion;
- assess the role of oceans as a carbon sink; and
- strengthen coordination and develop and integrate systematic long-term observation programmes.

Those states involved in research in Antarctica should:

- ensure that data and information resulting from research is freely available to the international community and enhance access to such data.
- The average total cost of implementing these activities is estimated at \$750 million, including \$480 million from the international community on grant or concessional terms.

**BOX 25. STRENGTHENING INTERNATIONAL, INCLUDING
REGIONAL, COOPERATION AND COORDINATION ⁴³**

- The UN General Assembly should allow for regular consideration of marine and coastal issues at the intergovernmental level and should request the Secretary-General and heads of UN agencies to strengthen coordination, promote collaboration and develop a centralised system to provide for information on legislation and advice on marine issues.
- States should consider strengthening intergovernmental regional cooperation, the Regional Seas Programmes of UNEP, and regional fisheries organisations and commissions.
- The annual cost of implementing these activities is estimated at \$50 million from the international community on grant or concessional terms.

⁴² Agenda 21, chapter 17, programme area (e).

⁴³ Agenda 21, chapter 17, programme area (f).

7.4 APPRAISAL OF AGENDA 21

The chapter on oceans is the longest of Agenda 21, and was preceded by highly complex negotiations.⁴⁴ The final text reflects a general lack of specificity regarding actions required for sustainability. This is most evident in sections relating to coastal management and overfishing on the high seas.⁴⁵

The severity of land-based marine pollution is recognised in the text⁴⁶ and is strengthened by a proposal for the UN Environment Programme to call an emergency inter-governmental meeting on this issue.⁴⁷ However, no terms of reference are provided to guide this process and not enough emphasis has been placed on the need for an international treaty. Several provisions in the text are insufficient.⁴⁸ For example: primary treatment only of sewage is promoted; no provisions have been made with regard to sewage sludge management; and the location of coastal outfalls is emphasised, rather than the need to cut back pollution at source.

Similar criticisms have been levelled at programme areas concerning the sustainable use and conservation of marine resources. High seas fishing dominated the oceans debate at the UN Conference on Environment and Development, particularly between the European Community and Canada.⁴⁹ Together with a call for a world conference on the subject,⁵⁰ a number of principles were adopted which, if adhered

⁴⁴ Details concerning these negotiations can be found in the following publications: Centre for Our Common Future, "Blow-by-Blow Summary of PrepCom III", *Network '92*, no. 10 (1991), p. 4; A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p: Cape '92, 1992), pp. 15-16; WWF, "Update on UNCED PrepCom 4", March 1992; and M. Valentine, "PrepCom 4: The Road to Rio is Paved with Good Intentions", *Earth Island Journal*, special Earth Summit edition, (June 1992), pp. 2-3. A continuous report of negotiations at UNCED can be found in issues of the *Earth Summit Bulletin*, 2 (2-16 June 1992).

⁴⁵ See Palmer, "Towards a New Oceans Order".

⁴⁶ See Box 22.

⁴⁷ Ibid.

⁴⁸ These inadequacies are detailed in Harkavy, *The Earth Summit ...*, pp. 15-16.

⁴⁹ See, for example J. Elliott, "Canada Eager to Talk Fishing", *Earth Summit Times*, 8 June 1992, p. 3; J. Elliott, "Site for Marine Resources in Dispute", *Earth Summit Times*, 9 June 1992, p. 16; S. Federovisky, "Pessimism is being reverted", *Terra Viva*, 11 June 1992, p. 3; and W. Novaes, "Problems caused by ignorance", *Terra Viva*, 5 June 1992, p. 7.

⁵⁰ See Box 23. A Conference on High Seas Fishing is supported by the Cancun Declaration, adopted by representatives of 66 countries at the International Conference on Responsible Fishing held in Cancun, Mexico, 6-8 May 1992 (UN Document Number: A/CONF.151/15).

to, will be important steps towards achieving sustainable levels of harvesting of high seas resources. Yet no controls have been placed on industrial high seas fishing by Agenda 21.⁵¹

Similarly, there is little regulation of commercial fishing in areas under national jurisdiction. For example, human nutritional needs have been linked to the need for larger harvests⁵² but not to the need to reduce "reduction fisheries" (eg fishmeal for fertiliser);⁵³ aquaculture has been actively promoted yet there are no provisions to guarantee that such activities are environmentally sound;⁵⁴ marine mammals, and cetaceans (whales and dolphins) in particular have received scant attention.⁵⁵

Despite these weaknesses, there is sufficient scope in Agenda 21 to considerably improve marine protection. This will, however, be dependent on individual governments and their respective capacities.

7.5 IMPLICATIONS FOR SOUTH AFRICA

A number of issues are raised in Agenda 21 which have direct relevance for the management of the South African marine and coastal environment. Some are receiving attention, whilst others need to be taken up or reinforced.

Ad hoc planning and development in the coastal zone, together with divided government responsibilities and a lack of coordination and accountability, typify the inefficient management of the South African coast.⁵⁶ Recognition of this has been given in the President's Council Report on a National Environmental Management

⁵¹ See Palmer, "Towards a New Oceans Order".

⁵² Agenda 21, chapter 17, para. 46(a).

⁵³ See Harkavy, *The Earth Summit ...*, p. 16.

⁵⁴ *Ibid.*

⁵⁵ See Palmer, "Towards a New Oceans Order".

⁵⁶ Heydorn et al., "The Coastal Zone", pp. 684-687.

System,⁵⁷ as has the need for a comprehensive coastal zone management policy and subsequent Act.⁵⁸ This broadly concurs with Agenda 21's call for the implementation of integrated coastal management plans which are environmentally sound.⁵⁹

Proposals of Agenda 21 requiring attention include the need to integrate sectoral programmes on sustainable development for human settlements, agriculture, tourism and industry into coastal planning. At present, a lack of money, information and expertise precludes this. The preparation of contingency plans for disasters such as sea-level rise also requires consideration by local authorities - particularly in densely populated, low-lying coastal areas such as the Cape Flats which are prone to flooding.⁶⁰

There are a number of important provisions in Agenda 21 regarding the sustainable utilisation and conservation of marine resources. In the first instance, Agenda 21 reinforces the need, as recommended by the President's Council Report,⁶¹ to improve the protection of existing reserves and establish additional reserves both along and off the coastline. Few of the provisions regarding high seas resources are of direct relevance to South Africa, however, since we have neither fleets nor commercially important straddling stocks in the high seas.⁶²

Considerable attention is given in the text of Agenda 21 to the importance of small-scale artisanal fisheries.⁶³ Governments are entreated to support the sustainability of these fisheries, and uphold the rights of local communities to subsistence. Yet in South Africa, several traditional fishing communities have been displaced through apartheid legislation, and restrictions have prevented access to the resource.⁶⁴ In a democratic South Africa, restoring traditional access to natural resources will be a

⁵⁷ President's Council, *Report of the Three Committees...*, p. 89.

⁵⁸ *Ibid.*, p. 90.

⁵⁹ See Box 21.

⁶⁰ See P. Hughes & G.B. Brundrit, "The Vulnerability of the False Bay Coast Line to the Projected Rise in Sea Level", *Transactions of the Royal Society of South Africa*, 47 (September 1991), pp. 519-534.

⁶¹ President's Council, *Report of the Three Committees...*, pp. 90-91.

⁶² C. van der Lingen, Sea Fisheries Research Institute, DEA, South Africa, pers. comm.

⁶³ See Box 23.

⁶⁴ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), pp. 36-39; F. Khan, "Sinking or Swimming? West Coast fishing communities", *New Ground*, no. 10 (Summer 1991/92), pp. 23-26.

priority. Indeed, the development of small-scale artisanal fisheries is supported by African National Congress policy⁶⁵ which favours a move away from large fishing conglomerates to smaller, community-based fisheries. Inkatha Freedom Party policy similarly supports the involvement of fishing communities in fisheries management but does not indicate the scale at which fisheries should be based.

A number of priority areas have been identified by Agenda 21 to address scientific uncertainties.⁶⁶ These programmes should certainly be taken up by appropriate research groups. Yet global uncertainties require global strategies. While South Africa does participate in a number of international research programmes, its eventual readmission to the UN will provide for valuable contributions to the work of the Intergovernmental Oceanographic Commission (IOC) and programmes such as the Global Ocean Observing System (GOOS).⁶⁷

Finally, Agenda 21 emphasises the crucial roles which non-governmental organisations (NGOs) and local communities have to play in managing the marine environment effectively. This will be dependent upon the ability of NGOs to build up expertise, the effectiveness of public awareness campaigns, and the willingness of local communities to take up issues. This in turn will depend on recognition that factors such as instability in the fishing industry and subsequent retrenchments are environmental issues which can actively be taken up by trade unions. Indeed, the recent strike by crayfish workers on the West Coast indicates that this is already happening.⁶⁸ In South Africa, strong public involvement is likely to be imperative for effective marine protection.

This concludes Chapter 7 which has detailed global and local problems concerning the marine environment, evaluated Agenda 21 in light of these concerns and suggested

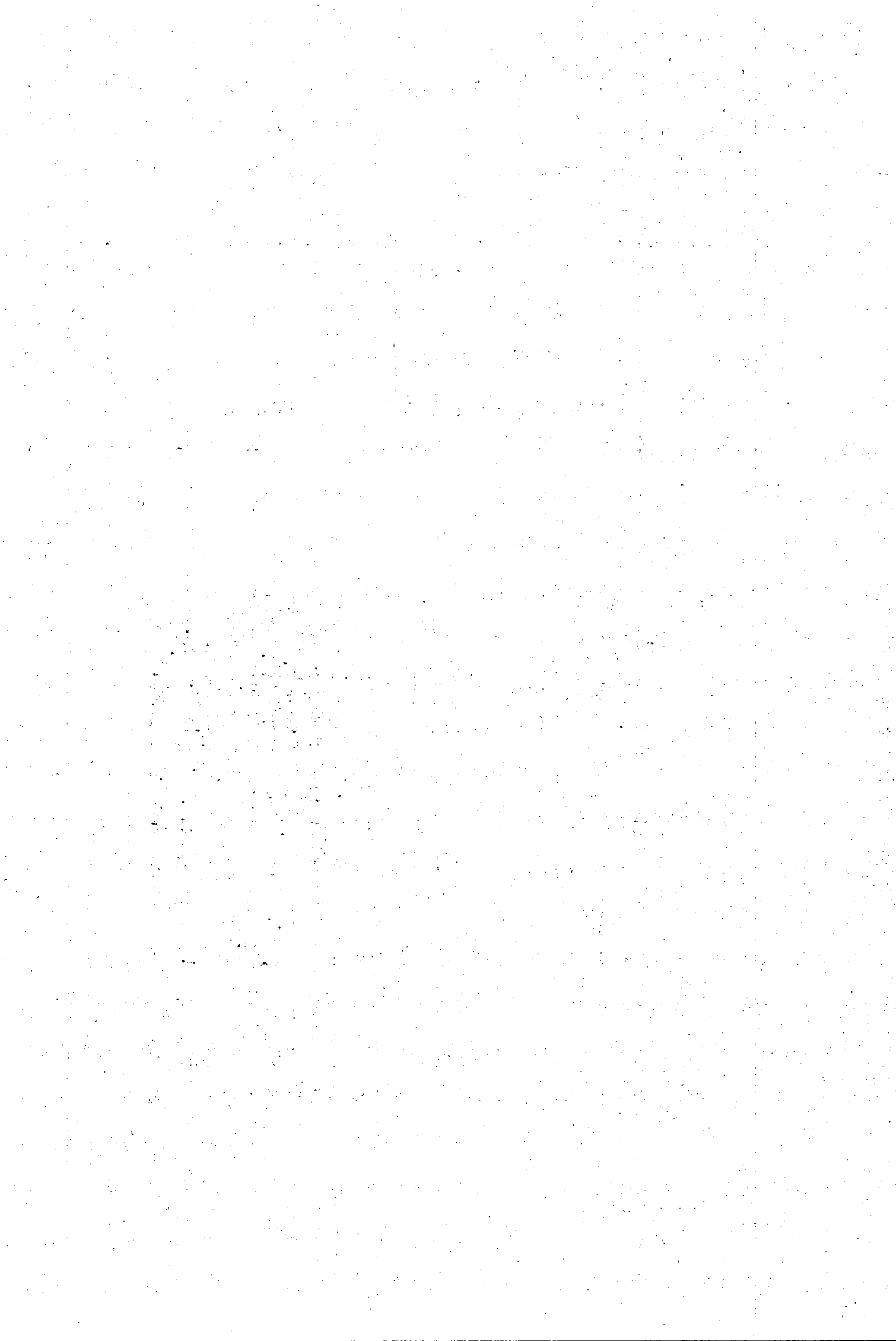
⁶⁵ African National Congress, *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 24.

⁶⁶ See Box 24.

⁶⁷ An official statement for the UN Conference on Environment and Development by the 16th assembly of the IOC, Paris, 7-22 March 1991 urges countries to support this system through their national facilities and services. The Global Ocean Observing System is detailed in "The Future of the Blue Planet"; and in Kester et al., "A Global Ocean Observing System", pp. 26-34.

⁶⁸ Khan, "Sinking or Swimming?", pp. 23-26.

areas of relevance for South Africa. Chapter 8 details Agenda 21 strategies for the management of chemicals and waste. □



Chapter 8

THE CLEAN WORLD:

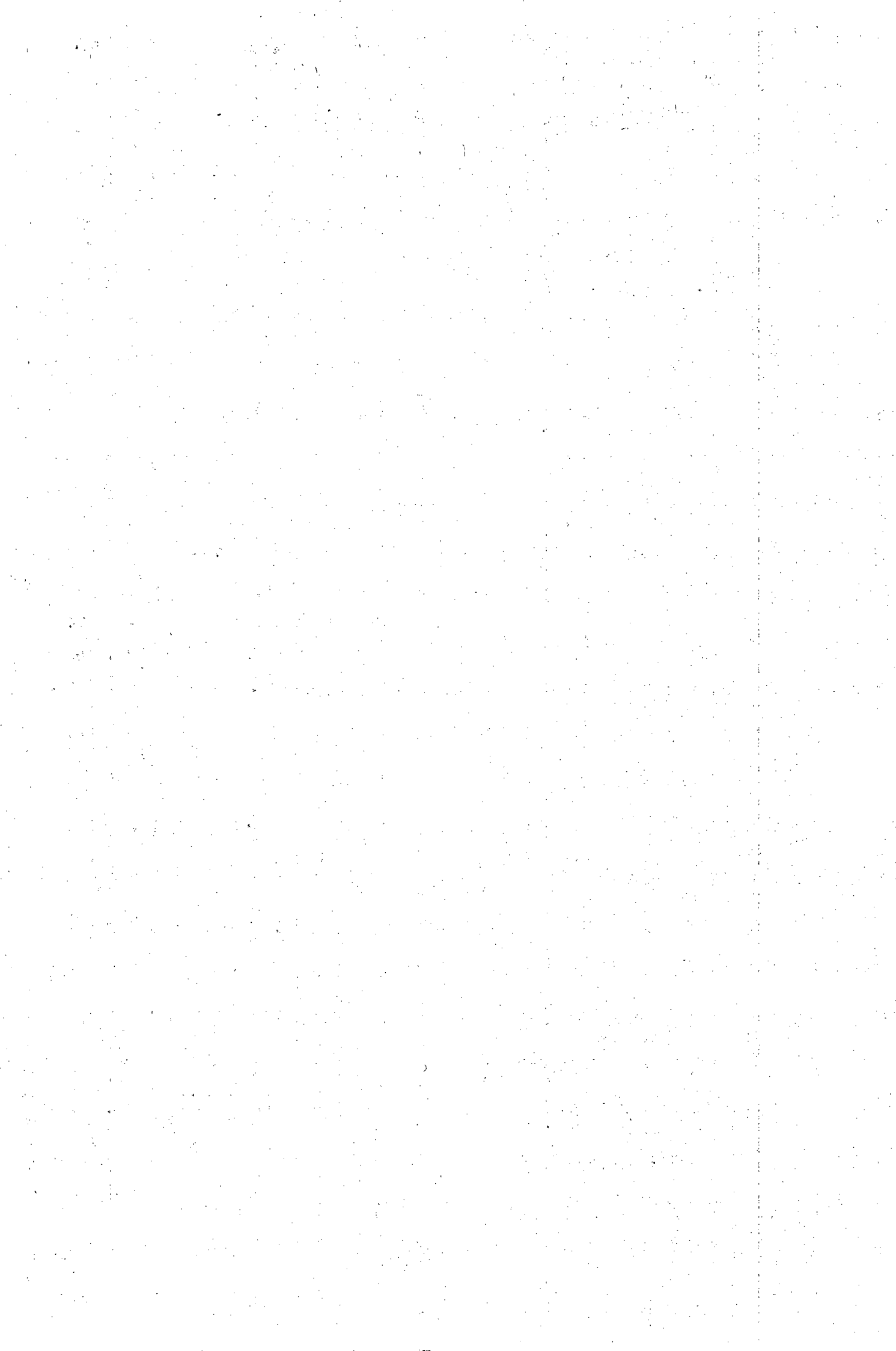
MANAGING CHEMICALS AND WASTE





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Chapter 8

THE CLEAN WORLD: MANAGING CHEMICALS AND WASTE

8.1 THE BASIS FOR ACTION: GLOBAL CHEMICALS AND WASTE ¹

The production and disposal of toxic chemicals and hazardous and radioactive wastes is occurring globally on an ever-increasing scale.² Processes to minimise production and ensure their safe processing, transportation and disposal are clearly crucial to long-term environmental well-being. The present state of management is embryonic and there is an urgent need for information and information-sharing mechanisms, together with stricter regulations.³ This section details areas of concern, current legislation and state of management regarding these substances.

8.1.1 Toxic Chemicals, Hazardous Wastes, and Radioactive Wastes

Every year, some 2 000 chemicals are added to the 100 000 compounds already in common use.⁴ This occurs despite the lack of knowledge about long-term environmental and health risks of most of these chemicals.⁵ The situation is compounded by a lack of resources to assess those chemicals for which information is available.⁶

¹ See also Chapter 5 of this dissertation.

² World Commission on Environment and Development (hereafter cited as the WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), pp. 223-228.

³ Agenda 21, chapter 19.

⁴ WCED, *Our Common Future*, p. 224.

⁵ Agenda 21, chapter 19, para. 11.

⁶ *Ibid.*

Aside from the uncertainties involved in using these substances, the waste generated by them is substantial and is becoming increasingly unmanageable. The United Nations Environment Programme (UNEP) estimates that of all manufactured waste, 10-20% is potentially hazardous.⁷ In 1990, industrialised countries produced over 300 million tonnes of hazardous waste⁸ - 90% of the world-wide total.⁹ A large proportion of this waste is indiscriminately disposed: in rivers, in oceans, near human settlements, and in the developing world.¹⁰

The 1980s witnessed the emergence of the NIMBY (Not In My Back Yard) syndrome as industrial countries tried to export their hazardous waste, usually to poor countries.¹¹ The economic rationale behind this is plain. In the industrialised world, hazardous waste disposal is a costly business due to relatively strict standards and public pressure: in developing countries, less stringent laws and scant awareness provide for an ideal, low-cost depository.¹² Desperately-needed foreign exchange is thus gleaned by developing country governments, in exchange for toxic waste.

Radioactive waste, although subject to different rules and regulations, is not exempt from international trade. The proposed shipments of plutonium between processing plants in France and nuclear reactors in Japan are a case in point.¹³ Annually, some 210 000 m³ of radioactive waste is generated worldwide from nuclear power production.¹⁴ These volumes are likely to increase as more nuclear power plants become operational and older nuclear facilities are decommissioned.¹⁵

⁷ United Nations Environment Programme (hereafter cited as UNEP), "Environmentally Sound Management of Hazardous Wastes and Toxic Chemicals", in *Only One Earth* (n.p., 1991).

⁸ S. Ramphal, *Our Country, The Planet* (Washington D.C.: Island Press, 1992), p. 100.

⁹ D.H. Meadows, D.L. Meadows & J. Randers, *Beyond the Limits* (London: Earthscan, 1992), p. 91.

¹⁰ Agenda 21, chapter 20; WCED, *Our Common Future*, pp. 226-228.

¹¹ Ramphal, *Our Country, The Planet*, p. 99.

¹² P. Lukey, C. Albertyn, H. Coetzee, "Wasting Away: South Africa and the Global Waste Problem", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), pp. 167-168.

¹³ See for example, M. Johns, "Japan's Plutonium Economy", *New Ground*, no. 9 (1992), pp. 12-14.

¹⁴ Agenda 21, chapter 22, para. 1.

¹⁵ *Ibid.*

8.1.2 International Legislation

The Basel Convention on the Transboundary Movement of Hazardous Wastes¹⁶ was drafted largely in response to increasing concern over the dumping of industrialised country's wastes in the developing world. The effectiveness of the Convention has however been questioned¹⁷ since it does not ban the shipping of hazardous waste, but instead sets up a notification system which actually legitimises the existing toxic waste trade. Furthermore, many of the world's largest waste exporters who originally signed the treaty have not yet ratified it.¹⁸

8.2 THE BASIS FOR ACTION: SOUTH AFRICAN CHEMICALS AND WASTE ¹⁹

8.2.1 Toxic Chemicals, Hazardous Wastes, and Radioactive Wastes

Of the 420 million tons of waste produced annually in South Africa, 2 million tons is regarded as hazardous (ie toxic, infectious, flammable, corrosive, oxidising and radioactive materials).²⁰ Industry is responsible for the bulk of this, with the gold-mining industry alone contributing 50%.²¹ This should be assessed in the knowledge that only half of industrial waste in South Africa is disposed of in official dumps, and that the above-quoted figures are therefore under-estimates.²²

¹⁶ Signed in 1989, the UNEP Convention came into force on 5 May 1992.

¹⁷ See Greenpeace, "Basel Convention Now in Force", *Toxic Trade Update*, no. 5.2 (1992), pp. 2-4; and J. Webb, "Business as Usual for Waste Exporters", *New Scientist*, 9 May 1992, p. 4.

¹⁸ Ibid. Only 22 of the 105 countries that signed the agreement at the founding conference have ratified it. Major waste exporting regions of the world such as the European Community, Canada and the United States have not ratified the Convention.

¹⁹ See also Chapter 5 of this dissertation.

²⁰ Department of Environment Affairs (hereafter cited as DEA), *Hazardous Waste in South Africa*, Vol. 1: *Situation Analysis*, ed. R.G. Noble (Pretoria: CSIR, 1992), p. 10. Note also that this study indicates that surveys of this sort generally yield underestimates (p. 52).

²¹ Ibid., pp. 12-28.

²² See "Environment Report Submitted to Earth Summit", *The Citizen*, 4 June 1992.

A recent Council for Scientific and Industrial Research (CSIR) report²³ on hazardous waste in South Africa indicates that few industries have waste management strategies and that there is a lack of awareness concerning hazards. A shortage of trained personnel, and a lack of controlled treatment facilities results in the system relying on the integrity of industrialists to dispose of their waste safely. This, together with the present lack of legislation has resulted in a poor hazardous waste management system, often with extremely detrimental effects on workers handling these substances, communities living near toxic-waste generating plants and affected ecosystems.²⁴ Over half of existing disposal sites are thought to have contaminated the surrounding environment.²⁵

With respect to radioactive waste disposal, a comprehensive policy²⁶ has been adopted although it is questionable whether the same body should promote and control both nuclear energy and its associated health and safety aspects.²⁷

8.2.2 International Legislation

As regards international legislation, South Africa has recently ratified the Basel Convention but is not party to the Lomé IV Convention signed between the European Community (EC) and former colonies in Africa, banning all shipments of radioactive and hazardous wastes from the EC.²⁸ Nor is it a member of the Organisation for African Unity (OAU) or party to the OAU Bamako Convention,²⁹ which has resolved to ban all waste imports into the African continent. Both the African National Congress

²³ DEA, *Situation Analysis*, p. 81.

²⁴ A case in point is Chrome Chemicals, see Greenpeace, "Bayer Poisons South Africa", *Toxic Trade Update*, no. 5.2 (1992), pp. 23-24. See also V. Quinlan, "Hold Onto Your Nostrils", *New Ground*, no. 5 (1991), pp. 40-41.

²⁵ DEA, *Situation Analysis*, p. 91.

²⁶ Details concerning the policy can be found in D. Van As, P.R. Le Roux & M.A. Rabie, "Radiation", in *Environmental Concerns in South Africa*, eds R.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1983), p. 358.

²⁷ *Ibid.*, p. 361.

²⁸ C. Albertyn, "Recycling Death?", *Vrye Weekblad*, 3 April 1992, p. 16.

²⁹ Greenpeace, *International Waste Trade*, (n.p., 1992).

(ANC)³⁰ and the Pan Africanist Congress (PAC)³¹ firmly support a prohibition on the import and export of all forms of hazardous waste. The South African government³² purportedly bans the importation of toxic waste, although loopholes exist which allow for waste to be regarded as raw materials or as material to be recycled.³³

These loopholes largely account for recent poisoning incidents at Thor Chemicals in Natal.³⁴ Low-wages and slack environmental protection regulations were presumably major drawcards in attracting the world's largest and most toxic mercury recycling plant to KwaZulu borders.³⁵ The consequences of this, as well as pending plans to import hazardous wastes to the so-called homelands,³⁶ have projected toxic waste onto the South African political agenda.

8.3 AGENDA 21: MANAGING CHEMICALS AND WASTE

The origins and effects of chemicals and wastes are manifold and Agenda 21 considers them in a number of contexts, including consumption patterns³⁷, human health³⁸, human settlements³⁹ and water quality⁴⁰. The management of chemicals and waste is dealt with in four chapters of Agenda 21, three of which are described in this section. The fourth chapter, solid waste,⁴¹ is examined in Chapter 5 of this

³⁰ African National Congress (hereafter cited as the ANC), *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 32. See also S.S. Sangweni, "Statement of the ANC to UNCED", Rio de Janeiro, 10 June 1992.

³¹ B. Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", *History in the Making* 3(1) (1991), p. 47.

³² Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 93.

³³ See Greenpeace, "Thor Chemicals Reopens Mercury 'Recycling' Facility in South Africa", *Toxic Trade Update*, no. 5.2 (1992), pp. 12-13.

³⁴ *Ibid.*

³⁵ See R. Crompton & A. Erwin, "Reds and Greens: Labour and the Environment", in *Going Green*, p. 83.

³⁶ See E. Goussard, "Ciskei and the World Search for a Toxic Waste Dumping Ground", *Daily Dispatch*, 12 March 1992.

³⁷ Agenda 21, chapter 4.

³⁸ Agenda 21, chapter 6.

³⁹ Agenda 21, chapter 7.

⁴⁰ Agenda 21, chapter 18.

⁴¹ Agenda 21, chapter 21.

dissertation. Common themes which underpin the management of dangerous substances and are recognised in Agenda 21 are outlined in Box 26. This is followed by more technical tables which detail specific deadlines and responsibilities (Boxes 27, 28 and 29 dealing with toxic chemicals, hazardous waste and radioactive waste respectively).

BOX 26. THE CLEAN WORLD: COMMON THEMES

- The generation of toxic substances and dangerous waste should be prevented or minimised.
- Cleaner production strategies should be adopted.
- A "cradle to grave" approach - from processing through to recycling - should be employed.
- Hazardous processes and substances should be substituted by environmentally safe alternatives (eg pesticides by biological pest controls).
- The "polluter pays principle" should be applied and given legislative support.
- Hazardous waste prevention and the safe and environmentally sound management of radioactive waste should be integrated into national planning.
- Industry should treat, recycle, reuse and dispose of hazardous waste as close as possible to its origin.
- As well as ratifying the Basel Convention, states should respect international and regional agreements to eliminate the illegal trade in hazardous waste.
- Public participation should be implemented in all programme areas.
- Communities and workers have a right to know when they are dealing with dangerous substances. Industries are enjoined to adopt community right-to-know programmes based on international guidelines.
- Enhanced regional and international cooperation will greatly facilitate the effective management of chemicals and waste.

BOX 27. ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS ⁴²	
PROGRAMME AREA	ACTIVITIES
& cost per annum (1993-2000)	Governments, with the cooperation of industry and international organisations should:
<p>ASSESSMENT OF CHEMICAL RISKS</p> <p>\$30 million from the international community on grant or concessional terms (excluding the costs of generating safety data)</p>	<ul style="list-style-type: none"> ● improve the assessment of chemical risks within the UN and other systems; ● facilitate collaboration among governments, industry, academia and non-governmental organisations (NGOs) involved in aspects of risk assessment; and ● assess several hundred chemicals by the year 2000 and the share the information internationally.
<p>HARMONISATION OF CLASSIFICATION AND LABELLING</p> <p>\$53 million from the international community on grant or concessional terms to strengthen international organisations</p>	<ul style="list-style-type: none"> ● launch a project to establish such a system; and ● ensure that a globally harmonised hazard classification and compatible labelling system is in place by the year 2000.
<p>INFORMATION EXCHANGE</p> <p>\$10 million from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● strengthen national and international information exchange networks regarding the safety, use and emissions of hazardous chemicals; ● inform importing and exporting countries about prohibitions of chemicals through "prior informed consent" (PIC) procedures; and ● aim to participate in PIC procedures by the year 2000.
<p>RISK REDUCTION</p> <p>Mostly covered in other programme areas but an additional \$4 million from the international community to strengthen emergency poison control centres</p>	<ul style="list-style-type: none"> ● set up programmes whereby precautionary measures are taken and toxic chemicals are replaced by less hazardous substances; and ● encourage transnational corporations to introduce policies which adopt standards no less stringent than those in the country of origin. ● Industry is called on to develop an internationally agreed upon code of principles for managing trade in chemicals and to develop a "responsible care" approach.
<p>STRENGTHENING NATIONAL CAPABILITIES AND CAPACITIES FOR MANAGEMENT</p> <p>\$600 million total cost, \$150 million from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● develop emergency response procedures; ● establish a national coordinating mechanism for those involved in chemical safety; ● develop institutional mechanisms and means of enforcement for the management of chemicals; and ● ensure that by the year 2000, national legislative systems for the environmentally sound management of chemicals are in place.
<p>PREVENTING ILLEGAL INTERNATIONAL TRAFFIC</p> <p>No cost estimate</p>	<ul style="list-style-type: none"> ● Governments should adopt legislation and reinforce national capacities to prevent illegal international traffic in dangerous products.

⁴² Agenda 21, chapter 19.

BOX 28. ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES⁴³

PROGRAMME AREA
& cost per annum
(1993-2000)

ACTIVITIES

PREVENTING AND MINIMISING HAZARDOUS WASTE

\$750 million from the international community on grant or concessional terms

- Governments are requested to provide economic or regulatory incentives to stimulate industrial innovation, encourage investment and, in the case of developed nations, encourage technology transfer.
- Industry should establish environmental management systems, including environmental audits, to identify where the installation of cleaner production methods is needed.
- The environmentally sound disposal of hazardous waste is the responsibility of industries. Governments should establish regulations which outline these responsibilities.

STRENGTHENING INSTITUTIONAL CAPACITIES FOR MANAGEMENT

\$18.5 billion total cost, \$3.5 billion related to developing countries, \$500 million from the international community on grant or concessional terms

- National legislative and regulatory measures should be adopted for the environmentally sound management of hazardous wastes.
- Training programmes, dealing with hazardous waste risk assessment, monitoring and management should be established as well as public information programmes.
- Governments have the responsibility to develop national inventories of hazardous waste and carry out health assessments of populations living near hazardous waste sites.
- Industries are "encouraged to be transparent" in their operations and provide information to communities that might be affected.

PROMOTING AND STRENGTHENING INTERNATIONAL COOPERATION IN MANAGING TRANSBOUNDARY MOVEMENTS

No cost estimate although much of the cost is covered in the preceding programme

- Governments should harmonise existing criteria and procedures used to classify hazardous wastes, and adopt safety standards to manage hazardous waste in an environmentally sound way.
- A precautionary approach should be applied to the transboundary movements of hazardous wastes.

PREVENTING ILLEGAL INTERNATIONAL TRAFFIC

No cost estimate

- Governments are urged to strengthen international agreements and Conventions on traffic in hazardous wastes.
- Governments should adopt legislation to prevent the illegal import and export of hazardous waste.
- Regulations should be adopted that treat wastes in a manner consistent with regulations in the country of origin.
- A ban on exporting wastes to nations that do not have the capacity to deal with them in an environmentally sound way is proposed.

⁴³ Agenda 21, chapter 20.

**BOX 29. ENVIRONMENTALLY SOUND MANAGEMENT OF
RADIOACTIVE WASTES ⁴⁴**

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>PROMOTING THE SAFE AND ENVI- RONMENTALLY SOUND MANAGE- MENT OF RADIO- ACTIVE WASTE</p> <p>Costs at the national level will vary depending on the technology used for disposal; \$8 million is required from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● States should promote policies which minimise or limit radioactive waste generation. ● Governments should support efforts of the International Atomic Energy Association to develop safety standards and codes of practice. ● States should facilitate the transfer of appropriate technologies to developing countries for safe storage, transportation and disposal of nuclear wastes. ● Efforts to implement the Code of Practice on the Transboundary Movements of Radioactive Waste should be strengthened and reviewed with the possibility of creating a legally binding instrument. ● A proposed ban on the disposal of low-level radioactive wastes at sea should be investigated, as should the risks of storing or disposing of radioactive wastes near the marine environment. ● Regional Conventions dealing with radioactive wastes should be respected.

8.4 IMPLICATIONS FOR SOUTH AFRICA

If these programmes are considered seriously, they have far-reaching implications. This is despite weak, non-committal language in several sections. For example, the chapter on toxic chemicals begins with a statement that the substantial use of chemicals is essential to meet social and economic goals and that chemicals can be used safely.⁴⁵ The implementation of Prior Informed Consent procedures is merely "invited"⁴⁶ and there is scant reference to the responsibilities of transnational corporations.⁴⁷ Similarly, the duty of industry to provide information on substances being used is often embellished with the right of industry to protect confidential information. Language

⁴⁴ Agenda 21, chapter 22.

⁴⁵ Agenda 21, chapter 19, para. 1.

⁴⁶ Agenda 21, chapter 19, para. 36.

⁴⁷ M. Khor, "Regulating Transnational Corporations: The Biggest Gap in UNCED's Agenda", *Third World Economics*, no. 39 (16-30 April 1992), pp. 18-20.

referring to the need for legal instruments to prevent international traffic in dangerous products is also vague, at the insistence of industrialised countries.⁴⁸

Many of the principles and proposals embraced by these chapters echo recommendations of the President's Council Report on a National Environmental Management System,⁴⁹ those of the CSIR's report on hazardous waste management,⁵⁰ and ANC policy.⁵¹ These include commitments to minimisation and a cradle-to-grave approach to waste management; the adoption of policy based on the principle of "polluter pays"; the recycling, treatment and disposal of waste as close as possible to its place of origin; the need to integrate waste management policies into national planning; and the establishment of an information clearing house. Recognition is given in these reports to the lack of trained personnel to manage waste, and to the need to implement legislation and a regulatory system for hazardous waste. Although the waste policy of other political groups is not available, both the PAC and the Inkatha Freedom Party subscribe to the "polluter pays" principle.

The strategy proposed by the CSIR⁵² calls for "society involvement" and public access to data but does not address the "right to know" principle. Neither is there any mention of the need for a code of conduct for companies investing and operating in South Africa. These issues will certainly need to be redressed if Agenda 21 is adopted, especially as South Africa heads towards a new era of accountability and foreign investment.

This concludes Chapter 8 which has outlined the problems concerning the production and disposal of chemicals and waste and the implications of Agenda 21 proposals for South Africa. Chapter 9 examines the role of major groups in implementing Agenda 21 and their participation in the Rio Conferences. □

⁴⁸ Third World Network, "Hopes Dashed for Strict Regulation of Traffic in Toxic and Dangerous Products", *Third World Economics*, no. 39 (16-30 April 1992), p. 8.

⁴⁹ President's Council, *Report of the Three Committees* ..., pp. 100-102.

⁵⁰ DEA, *Hazardous Waste in South Africa*, Vol. 3: *Policy*, ed. R.G. Noble.

⁵¹ ANC, *Ready to Govern*..., pp. 31-32.

⁵² DEA, *Policy*, p. 18.

Chapter 9

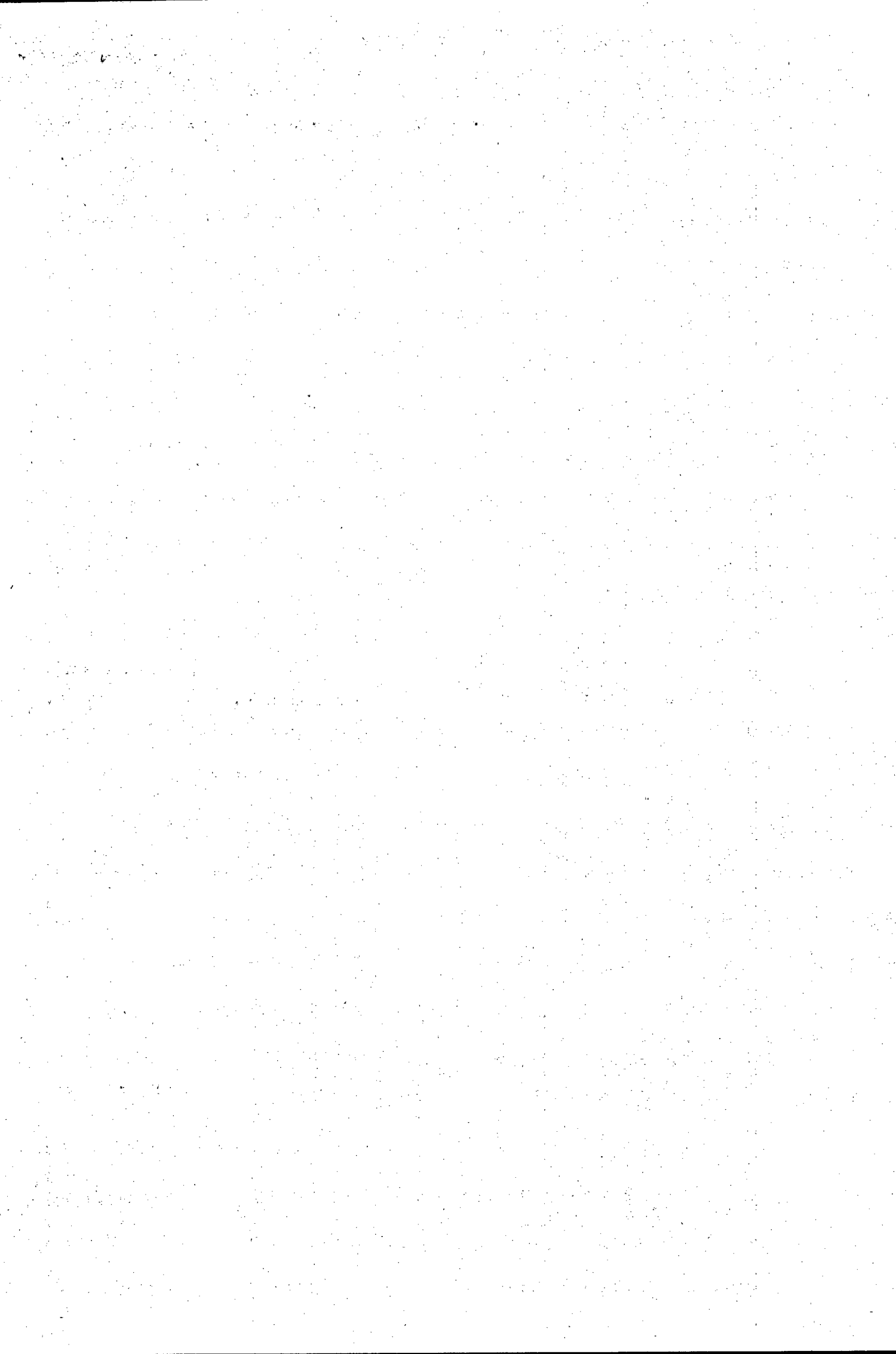
THE PEOPLE'S WORLD:

PEOPLE PARTICIPATION AND RESPONSIBILITY



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Chapter 9

THE PEOPLE'S WORLD: PEOPLE PARTICIPATION AND RESPONSIBILITY

9.1 BASIS FOR ACTION

The preceding chapters have described the action programmes of Agenda 21, designed to effect the transition towards sustainable development. But the successful implementation of Agenda 21 will depend upon the commitment and active participation of all social groups, including women, youth, children, indigenous peoples and their communities, non-governmental organisations (NGOs), trade unions, business and industry, local authorities, farmers and the scientific and technological community. Attaining sustainable development thus, above all, requires broad participation in all aspects of decision-making.

Women, as chief managers of natural resources in many developing countries, play a crucial role in sustaining the environment but owing to their generally lower social and economic status, they are also prime victims of poverty and environmental degradation.¹ Although women contribute two-thirds of the world's working hours, their contribution to economic development and political decision-making continues to be minimised.² Present attempts to integrate women into development schemes fall well short of the fundamental changes required.³ There is thus a critical need to ensure their full involvement in all decision-making processes related to sustainable development.⁴ For there is no doubt that women are a powerful force for change.

¹ C. Tinker, "Women as More than a Cross-Cutting Issue", *Network '92*, Special Supplement, no. 5 (1992).

² C.G. Fraser, "Women NGOs Fold Tents After 'Successful' Run", *Earth Summit Times*, 13 June 1992, p. 5; Tinker, "Women as More than a Cross-Cutting Issue".

³ Tinker, "Women as More than a Cross-Cutting Issue".

⁴ F.C. Steady, "UNCED Begins to See Women's Role in E&D", *Earth Summit Times*, 12 June 1992, p. 6; Tinker, "Women as More than a Cross-Cutting Issue"; United Nations Conference on Environment and Development (hereafter cited as UNCED) Secretary-General Maurice Strong, opening address at the Earth Summit, in "Strong Starts Delegates on a Journey to Save the World", *Earth Summit Times*, 4 June 1992, p. 6.

Another significant social group for change are the youth and children of this world. The future, we are constantly reminded, belongs to the next generation.⁵ And a child who is environmentally aware is likely to grow into a less destructive adult. Moreover, if youth and children are given an opportunity to express themselves, they could bring additional pressure to bear on adult society. As groups which have not yet made an investment in the status quo they present a fresh perspective and a powerful voice.⁶ They additionally represent close to a majority of the world's population: almost two billion people are below 25 years of age.⁷

Indigenous peoples and their communities also represent a notable percentage of the global population.⁸ They have a historic relationship with their lands and have developed a holistic traditional knowledge of their environment over many generations.⁹ However, economic, social and historical factors have precluded their full participation in sustainable development practices.¹⁰ Their role as environmental managers thus needs to be recognised, strengthened and protected, and their fundamental freedoms upheld.¹¹

As independent groups, NGOs - including all formal, non-formal and grassroots movements - play a vital role in shaping and implementing participatory democracy.¹² These organisations possess well-established and diverse expertise and experience in fields of particular importance to the implementation and review of sustainable development. They additionally represent a vehicle through which a sense of common purpose can be forged on behalf of all sectors of society.¹³

⁵ See for example, World Commission on Environment and Development, *Our Common Future* (Oxford: Oxford University Press, 1987), p. 8; and "Strong Starts Delegates on a Journey to Save the World", p. 6.

⁶ R. Buultjens, "Youth must be Served at Rio Summit", *Earth Summit Times*, 27 April 1992, p. 6; J. Langman, "Global Youth Seek Intergenerational Justice", *Earth Island Journal* (June 1992), p. 5; M. Lavoie & C. Duggan, "Youth Perspective on UNCED", *Network '92*, no. 7 (June 1991), p. 2.

⁷ Ibid.

⁸ Agenda 21, chapter 26, para. 1.

⁹ "Indigenous-Tribal Peoples Demand Forest Rights", *Earth Island Journal* (June 1992), p. 6.

¹⁰ See E. Hong, "Indigenous Peoples Voice Disappointment Over Rio Draft", *Third World Economics*, no. 39 (16-30 April 1992), p. 10; and "Indigenous-Tribal Peoples Demand Forest Rights", p. 6.

¹¹ See "Strong Starts Delegates on a Journey to Save the World", p. 6.

¹² R. Levins, "Blossoming NGOs Offer Hope", *Earth Summit Times*, 1 June 1992, p. 12.

¹³ G. da Cunha, "NGOs: They Go where Laws Fear to Tread", *Earth Summit Times*, 1 June 1992, p. 2.

Because NGOs are often a popular response to failed political processes, they are prime actors in monitoring governments and ensuring that sustainable development resolutions are implemented.¹⁴

Workers and trade unions are similarly instrumental in effecting sustainable development, especially in view of their experience in addressing industrial change.¹⁵ Trade unions are uniquely equipped to foster sustainable development initiatives by their promotion of socially responsible development together with the high priority they accord to protecting the working environment.¹⁶ Through their collaborative networks and extensive membership, trade unions are ideally placed to channel and promote the concepts and practices of sustainable development.

There is clearly enormous scope for business and industry to significantly contribute to sustainable development. Although they are major contributors to a country's economic development, they are also the greatest resource users and polluters. Through more efficient production processes, preventive strategies, and cleaner production technologies and procedures, business and industry can sharply alleviate impacts on the environment.¹⁷

Three further groups have major roles to play in the implementation of sustainable development. Local authorities, as the level of governance closest to people, are crucial for turning policies into appropriate action.¹⁸ The scientific and technological community has a tremendous but as yet mostly unrealised capacity to generate solutions to environmental problems and contribute to decision-making processes.¹⁹ Finally farmers, as stewards of the land, provide the key to implementing sound agricultural policies.²⁰

Strengthening the role of these groups will involve fundamental changes in education, public awareness and training. Indeed, education is perhaps the single most important influence in

¹⁴ See L. Gould, "Strong Shares Birthday Gift with NGOs", *Earth Summit Times*, 13 May 1992, p. 20; and Levins, "Blossoming NGOs Offer Hope", p. 12.

¹⁵ Agenda 21, chapter 29, para. 1.

¹⁶ Ibid.

¹⁷ See for example, D.R. Abbasi, "Sustainability is Good Business", *Earth Summit Times*, 13 May 1992, p. 11; S. Schmidheiny, *Changing Course: A Global Business Perspective on Development and the Environment* (Cambridge, Mass: MIT Press, 1992), 374 pp.; and P.S. Thacher, "Think Globally, Act Locally", *Earth Summit Times*, 1 June 1992, p. 7.

¹⁸ Agenda 21, chapter 29, para. 1.

¹⁹ Agenda 21, chapter 31, para. 1.

²⁰ Agenda 21, chapter 32, para. 4.

changing people's attitudes and behaviour so that they have the capacity to assess and address sustainable development. It is also critical for achieving effective public participation in decision-making.²¹

9.2 AGENDA 21: PEOPLE PARTICIPATION AND RESPONSIBILITY

Agenda 21 addresses the role of each of these groups in nine chapters. Boxes 30-38 summarise Agenda 21 proposals for the involvement of women, youth and children, indigenous groups, NGOs, trade unions, business and industry, local authorities, the scientific and technological community and farmers respectively. These groups are additionally featured throughout Agenda 21 in specific programme areas. A further chapter sets out broad proposals for education (Box 39), although specific suggestions related to sectoral issues are contained in other chapters.

²¹ Agenda 21, chapter 36, para. 3.

BOX 30. GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT²²

Governments should:

- implement the Nairobi Forward-Looking Strategies for the Advancement of Women which emphasise women's participation in ecosystem management and their control of environmental degradation;
 - by the year 2000, develop and implement a strategy of changes to eliminate constitutional, legal, administrative, cultural, social and economic obstacles to women's full participation in sustainable development and in public life;
 - take steps to increase the proportion of women decision-makers, planners, managers, scientists and technical advisers and strengthen and empower women's organisations and groups;
 - take measures to eliminate female illiteracy, assure girls' universal access to primary and secondary education, expand enrolment of women and girls in educational institutions and provide increased training opportunities for women in sciences and technology;
 - establish affordable nurseries and kindergartens, provide appropriate technologies to women, and improve women's access to land, clean water, fuel and adequate sanitation facilities to reduce workloads;
 - establish and strengthen women-centred, women-managed health care and family planning facilities;
 - promote equal employment opportunities and equitable pay for women by providing day-care facilities, parental leave and equal access to credit, land and other natural resources;
 - develop programmes to raise consumer awareness and promote the active participation of women to achieve changes in consumption and production patterns;
 - ratify all relevant conventions relating to the status of women and transform women's rights into legal measures that ensure women's full and equal participation in environment and development decisions;
 - initiate research which focuses on women's knowledge and experience in managing natural resources as well as on the impact of wars, structural adjustment policies and environmental degradation on women; and
 - establish mechanisms to integrate "domestic" and other unpaid work into resource accounting.
- The United Nations (UN) system and other international organisations should work to feature women more prominently in programmes and decision-making.
- The annual cost of implementing these activities is estimated to be \$40 million from the international community on grant or concessional terms.

²² Agenda 21, chapter 24.

BOX 31. YOUTH AND CHILDREN IN SUSTAINABLE DEVELOPMENT²³

Youth

Governments should:

- establish a process to promote dialogue with the youth community regarding environment and development plans and programmes;
 - by 1993, establish procedures allowing for the participation of youth in environmental decision-making processes at local, regional and national levels;
 - consider incorporating the recommendations of youth conferences and forums into relevant policies;
 - ensure access for youth to secondary education and vocational training that incorporates concepts of environmental awareness and sustainable development;
 - develop and implement strategies for creating alternative employment opportunities for youth; and
 - include youth representatives in their delegations to international meetings.
- The annual cost of implementing these activities is estimated at \$1.5 million from the international community on grant or concessional terms.

Children

Governments should:

- implement programmes to reach the environment and development goals endorsed by the 1990 World Summit for Children, in particular health, nutrition, education, literacy, poverty alleviation and primary environmental care;
 - mobilise communities through schools and local health centres so that children and their parents become focal points to sensitise communities to environmental issues;
 - ratify the Convention on the Rights of the Child, which addresses each child's basic needs; and
 - expand educational opportunities and establish methods that incorporate children's concerns into all levels of policy relating to environment and development.
- The cost of implementing these activities is included in estimates for other programmes.

²³ Agenda 21, chapter 25.

**BOX 32. RECOGNISING AND STRENGTHENING THE ROLE OF
INDIGENOUS PEOPLE AND THEIR COMMUNITIES ²⁴**

Governments and relevant organisations, in full partnership with indigenous peoples should:

- establish a process to empower indigenous peoples through adopting appropriate policies, protecting lands of indigenous communities from activities that are environmentally unsound, recognising traditional values and knowledge, recognising traditional dependence on renewable resources and ecosystems, enhancing capacity building for indigenous communities, supporting alternative environmentally sound means of production, and developing and strengthening national dispute-resolution arrangements relating to settlement of land and resource-management;
- strengthen the active participation of indigenous communities in the formulation of policies, laws and programmes that may affect these communities; and
- involve indigenous communities in resource management and conservation strategies.

Specific measures which Governments could take include:

- ratifying and applying existing international conventions relevant to indigenous peoples;
 - adopting policies and legal instruments that protect indigenous intellectual and cultural property and the right to preserve customary and administrative systems and practices; and
 - strengthening research and education programmes to achieve a wider understanding of indigenous people's knowledge and management experience related to the environment, and applying this to contemporary development challenges.
- The annual cost of implementing these activities is estimated to be \$3 million from the international community on grant or concessional terms.

²⁴ Agenda 21, chapter 26.

BOX 33. STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANISATIONS²⁵

The UN system, including international agencies and intergovernmental organisations should:

- initiate a process, in consultation with NGOs, to review formal procedures for NGO involvement at all levels including policy design, decision-making, implementation and evaluation of programmes;
- review levels of financial and administrative support to NGOs, as well as the extent and effectiveness of NGO involvement in implementing projects and programmes of the UN;
- promote NGO participation in the processes established to review and evaluate the implementation of Agenda 21;
- take into account the findings of non-governmental review systems and evaluation processes in relevant reports of the Secretary General to the General Assembly and other forums concerning implementation of Agenda 21; and
- provide access for NGOs to accurate and timely data and information.

Governments should:

- establish or enhance dialogue with NGOs and their networks to recognise and strengthen their respective roles, integrate non-governmental input to the governmental policy development process, and facilitate non-governmental coordination in implementing national policies;
 - encourage and enable partnership and dialogue between local NGOs and local authorities;
 - involve NGOs in national mechanisms or procedures established to carry out Agenda 21, and take into account their findings concerning the implementation of programmes;
 - review government education systems to identify ways to include and expand the involvement of NGOs in education and public awareness; and
 - make available to NGOs the data and information necessary for their effective contribution to research, and to the design, implementation and evaluation of programmes.
- By 1995, a mutually productive dialogue should be established at the national level between all governments, NGOs and their networks.
- No reliable cost estimate is available to implement this programme.

²⁵ Agenda 21, chapter 27.

**BOX 34. STRENGTHENING THE ROLE OF WORKERS AND THEIR
TRADE UNIONS ²⁶**

Trade unions should:

- continue to define, develop and promote policies on all aspects of sustainable development, both independently and in cooperation with international and regional organisations;
- ensure that workers are able to participate in environmental audits at the workplace and in environmental impact assessments; and
- participate in environment and development activities within the local community and promote joint action on problems of common concern.

Governments and employers should:

- respect and promote workers' rights to freely associate and organise, as laid down in International Labour Organisation (ILO) Conventions;
- ensure that trade unions are able to participate actively in decisions on the design, implementation and evaluation of national and international policies and programmes on environment and development, including employment policies, industrial strategies, labour adjustment programmes and technology transfer; and
- ensure that workers are provided with all relevant information to enable effective participation in these decision-making processes.

Trade unions, governments and employers should:

- cooperate to ensure that the concept of sustainable development is equitably implemented; and
- establish collaborative mechanisms at the workplace, community and national levels to deal with safety, health and environment, particularly with regard to the rights and status of women in the workplace.
- Workers should be given access to adequate training to increase their environmental awareness, ensure their safety and health, and improve their economic and social welfare.
- The annual cost of implementing these activities is estimated at \$300 million from the international community on grant or concessional terms.

²⁶ Agenda 21, chapter 29.

BOX 35. STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY²⁷

Promoting cleaner production

Governments should:

- identify and implement a mix of economic instruments and legal measures to promote the use of cleaner production; and
- promote technological and know-how cooperation between enterprises, including the identification, assessment, research and development, management, marketing and application of cleaner production.

Business and industry, including transnational corporations (TNCs) should:

- report annually on their environmental record and on their use of energy and natural resources;
- adopt and report on the implementation of codes of conduct promoting best environmental practice (eg the ICC's *Business Charter on Sustainable Development* and the chemical industry's *Responsible Care* initiative);
- cooperate with workers and trade unions to improve the knowledge and skills to implement sustainable development activities;
- incorporate cleaner production policies in their operations and investments; and
- encourage individual companies to undertake programmes for environmental awareness and responsibility at all levels.

Governments, business and industry, including TNCs, academia and international organisations, should:

- strive for optimal efficiencies at all stages of the product life cycle, aiming to increase the efficiency of resource utilisation, as well as the re-use and recycling of residues and the minimisation of waste;
- strengthen partnerships to implement the principles and criteria for sustainable development; and
- develop and implement methodologies to internalise environmental costs into accounting and pricing mechanisms.

Promoting responsible entrepreneurship

Governments should:

- facilitate the establishment and operation of sustainably managed enterprises through measures such as efficient administration and regulation, venture capital funds and economic incentives; and
- support training in environmental aspects of enterprise management, in collaboration with relevant businesses and organisations.

Business and industry, including TNCs should:

- establish world-wide corporate policies on sustainable development and arrange for the transfer of environmentally sound technologies (ESTs) between parent companies and their affiliates in developing countries;
 - establish partnership schemes with small and medium-sized enterprises to facilitate the exchange of relevant experience;
 - establish national councils for sustainable development and promote entrepreneurship, especially among women, in the formal and informal sectors;
 - increase research and development of ESTs and environmental management systems; and
 - ensure responsible and ethical management of products and processes with regard to health, safety and environmental aspects. Self-regulation should be increased, guided by appropriate codes and charters, and an open dialogue should be promoted with employees and the public.
- These activities will mostly involve changes in the orientation of existing operations and additional costs are not expected to be significant.

²⁷ Agenda 21, chapter 30.

**BOX 36. LOCAL AUTHORITIES INITIATIVES IN SUPPORT OF
AGENDA 21²⁸**

Local authorities should:

- enter into a dialogue with their citizens, local organisations and private enterprises and adopt a "local Agenda 21". By 1996 most local authorities should have undertaken this consultative process and achieved consensus; and
- implement programmes which ensure that women and youth are represented in decision-making, planning and implementation processes.
- Partnerships should be fostered among relevant international organisations to mobilise increased international support for local authority programmes. By 1993 the international community should have initiated a consultative process aimed at increasing cooperation between local authorities.
- By 1994, associations of cities and other local authorities should increase their cooperation and coordination to enhance the exchange of information and experience.
- The annual cost of implementing these activities is estimated to be \$1 million on grant or concessional terms.

²⁸ Agenda 21, chapter 28. See also Chapter 5 of this dissertation.

BOX 37. STRENGTHENING THE ROLE OF THE SCIENTIFIC AND TECHNOLOGICAL COMMUNITY²⁹

Improving communication and cooperation among the scientific and technological community, decision-makers and the public

Governments should:

- review how national scientific and technological activities could be more responsive to sustainable development needs;
 - strengthen and widen the membership of national scientific and technological advisory councils, organisations and committees to ensure that they are representative of all strands of public opinion;
 - promote regional cooperative mechanisms to address regional needs for sustainable development;
 - improve and expand scientific input into international collaborative and negotiating processes towards international agreements;
 - strengthen science and technology advice to the highest levels of government as well as to the UN and other international institutions;
 - improve and strengthen programmes for disseminating research results of universities and research institutions to decision-makers and the general public. National scientific research reports should be understandable and relevant to local sustainable development needs;
 - improve links between the research sector and industry;
 - develop mechanisms to enhance the dissemination of information; and
 - promote and strengthen the role of women as full partners in science and technology disciplines.
- The annual cost of implementing these activities is estimated to be \$15 million from the international community on grant or concessional terms.

Promoting codes of practice and guidelines related to science and technology

- Scientific and technological codes of practice and guidelines regarding sustainable development should be promoted to ensure that the functioning of natural processes is properly valued.
- National advisory groups should be strengthened and legal instruments reviewed and amended to ensure that a common value framework is developed between the scientific and technological community and society as a whole.
- Such objectives should be integrated into research priorities and education and training curricula.
- The annual cost of implementing these activities is estimated to be \$5 million from the international community on grant or concessional terms.

²⁹ Agenda 21, chapter 31. See also Box 41.

BOX 38. STRENGTHENING THE ROLE OF FARMERS³⁰

("Farmers" include all rural people who derive their livelihood from activities such as farming, fishing and forest harvesting.)

Governments should:

- encourage a decentralised decision-making process through the creation and strengthening of local organisations that delegate responsibility and control to the primary users of natural resources;
- introduce or strengthen policies that encourage self-sufficiency in low-input, low-energy technologies;
- promote pricing mechanisms, trade policies, fiscal incentives and other policy instruments that take into account farming's true environmental cost and encourage farmers to utilise their land, water and forest resources in a more productive and sustainable manner;
- involve farmers and their representative organisations in the formulation of policy, allowing for their direct representation in agricultural research and development and in developing appropriate environment-friendly farming techniques;
- support the formation of farmer organisations by providing adequate legal and social conditions;
- protect, recognise and formalise women's access and rights to land, credit, technology, inputs and training;

Governments and farmers' organisations should:

- work to document, synthesise and disseminate local knowledge, practices and project experiences, so as to make use of the lessons of the past when formulating and implementing policies affecting farmers;
- establish networks to exchange low-cost, sustainable farming techniques;
- develop pilot projects and extension services to build on the needs and knowledge base of women farmers.

Governments, in collaboration with NGOs and research organisations should:

- support research to develop environmentally sound technologies that enhance crop yields, maintain land quality, recycle nutrients and control pests and weeds;
- support research to compare high and low-input agriculture; and
- support research on mechanisation that would optimise human labour and animal power.

- The financing for this programme area is estimated in Chapter 6, Box 16 of this dissertation (Promoting sustainable agriculture and rural development).

³⁰ Agenda 21, chapter 32. See also Chapter 6 of this dissertation.

BOX 39. PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING ³¹

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>REORIENTING EDUCATION TOWARDS SUSTAINABLE DEVELOPMENT</p> <p>\$8.9 billion (\$3.5-4.5 million from the international community on grant or concessional terms)</p>	<p>Governments should:</p> <ul style="list-style-type: none"> ● strive to ensure universal access to basic education, achieve primary education for at least 80% of both boys and girls, and reduce current adult illiteracy rates by at least 50% - particularly among women; ● endorse the recommendations of the 1990 Jomtiem Conference on Education for All and strive to ensure its framework for action; ● update or prepare strategies aimed at integrating environment and development as cross-cutting issues at all levels in education within the next three years; and ● set up national advisory environmental education coordinating bodies to assess the needs and priorities of different groups. <p>Educational and other relevant authorities and organisations, should:</p> <ul style="list-style-type: none"> ● set up training programmes for all educators to develop innovative methods for environmental and developmental education; ● ensure that every school is assisted in designing environmental activity workplans; ● foster opportunities for women in non-traditional fields, eliminate gender stereotyping in curricula and give priority to programmes promoting literacy among women; and ● promote adult education programmes focused on local problems in environment and development as well as non-formal education activities at all levels. <ul style="list-style-type: none"> ● Information exchange should be strengthened within 5 years by enhancing technologies and capacities necessary to promote environment and development education and public awareness. ● The UN system should review its educational activities and establish a programme within two years to integrate UNCED decisions into the existing UN educational framework.
<p>INCREASING PUBLIC AWARENESS</p> <p>\$1.2 billion (\$110 million from the international community on grant or concessional terms)</p>	<p>Governments, with the assistance of the UN system and relevant organisations should:</p> <ul style="list-style-type: none"> ● establish and strengthen advisory bodies and information services to provide public environment and development information and services, hence encouraging public participation in discussion of environmental policies and assessments; ● promote a cooperative relationship with the media, theatre groups and the entertainment and advertising industries to mobilise their experience in shaping public behaviour and consumption patterns; ● promote environmentally sound leisure and tourism activities; ● encourage the educational establishment and NGOs to contribute more to awareness building through joint awareness initiatives; and ● encourage mobilisation of men and women in awareness campaigns, stressing the role of the family and women's contribution to transmitting knowledge.

³¹ Agenda 21, chapter 36.

**PROMOTING
TRAINING**

\$5 billion (\$2 million from the international community on grant or concessional terms)

Governments, with the support of the UN system and relevant organisations should:

- identify workforce training needs and determine measures to be taken to meet these needs. Training should have a job-specific focus, aimed at filling gaps in knowledge and developing skills that would help individuals find employment and be involved in environment and development work;
 - integrate environment and development issues into existing training curricula;
 - encourage all sectors of society to include an environmental management component in relevant training activities;
 - develop a service of locally recruited and trained environmental technicians to serve local communities' needs;
 - enhance the ability to access, analyse and effectively use information and knowledge available on environment and development; and
 - consult with people in isolated situations to ascertain their needs for training.
- Governments, industry, trade unions and consumers should promote an understanding of the interrelationship between good environment and good business practices.
- National professional associations should develop and review their codes of ethics and conduct to strengthen environmental connections and commitments.

9.3 PARTICIPATION OF MAJOR GROUPS IN AGENDA 21, UNCED AND THE GLOBAL FORUM

Apart from the role of business and industry, general satisfaction was expressed at the content of these chapters. This was mostly ensured through the active participation of most groups in the preparatory meetings to the United Nations Conference on Environment and Development (UNCED). However, the extent to which each group participated in the UNCED process varied considerably and this is reflected in their representation throughout Agenda 21.

9.3.1 Women

Of all groups throughout the UNCED process, the women's lobby was certainly the best organised and consequently the most effective.³² Accordingly, there is a strong emphasis on women throughout Agenda 21 as well as in a specific chapter on women. For example, Agenda 21 engages women's active participation in the rehabilitation of degraded environments, elimination

³² See Fraser, "Women NGOs Fold Tents After 'Successful' Run", p. 5; A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 17; R. Kyte, "Women at the '92 Global Forum", *Brundtland Bulletin*, no. 16 (July 1992), p. 56; and P. Leon, "Bella Abzug: We Women Did Not Achieve All We Wanted to, but We Achieved Enough", *Terra Viva*, 13 June 1992, p. 24.

of poverty, moderation of consumption patterns, stabilisation of population growth, reduction of waste, human resource development and environmental and developmental education.³³

Through a series of meetings which brought together women from North and South, consensus was reached on a range of common issues. A set of proposals was subsequently forwarded to the United Nations (UN) and mostly incorporated into the official document.³⁴ Thus, from an initial UNCED draft which excluded women, the final text reflects a historical acknowledgement of the importance of women's contribution to environment and development and to decision-making.³⁵

At the Global Forum the women's tent, dubbed the "Truth Tent", sought to promote the action agenda adopted at the World Women's Congress for a Healthy Planet, held in Miami in 1991.³⁶ A *Declaration by Women at the Global Forum* expressed collective "outrage that the UNCED agenda has ignored the fact that some of the most critical factors contributing to people's and environmental degradation are economic and military systems".³⁷

9.3.2 Youth

Youth, comprising a rich mix of young people from a variety of cultural backgrounds, were well-represented during the UNCED process. As well as participating in the preparatory meetings to UNCED, a World Youth Forum was organised in Costa Rica in early 1992 as preparation for UNCED.³⁸ At UNCED and the Global Forum, the youth lobby was particularly strong and

³³ See Steady, "UNCED Begins to See Women's Role in E&D", p. 6.

³⁴ See A. Anand, "Women are on the Map and in the Agenda", *Earth Summit Times*, 9 June 1992, p. 2; Leon, "Bella Abzug: We Women Did Not Achieve All We Wanted to, but We Achieved Enough", p. 24; and Tinker, "Women as More than a Cross-Cutting Issue".

³⁵ See Anand, "Women are on the Map and in the Agenda", p. 2; Leon, "Bella Abzug: We Women Did Not Achieve All We Wanted to, but We Achieved Enough", p. 24; and Steady, "UNCED Begins to See Women's Role in E&D", p. 6.

³⁶ Women's Environment and Development Organisation, "World Women's Congress for a Healthy Planet November 8-12, 1991: Women's Action Agenda '21". The recommendations of the Congress to the United Nations (hereafter cited as the UN) are summarised in J. Cock, "World Women's Congress for a Healthy Planet", *New Ground*, no. 7 (Autumn 1992), pp. 29-30. See also Leon, "Bella Abzug: We Women Did Not Achieve All We Wanted to, but We Achieved Enough", p. 24.

³⁷ See Centre For Our Common Future, "Declaration by Women", *Network '92*, no. 18 (June/July 1992), p. 14; M.O. Fouracre, "Antrobus Backs Women's Declaration", *Earth Summit Times*, 15 June 1992, p. 10; and Kyte, "Women at the '92 Global Forum", p. 56.

³⁸ See Centre For Our Common Future, "Youth Forum", *Network '92*, no. 6 (April 1991), p. 9; Centre for Our Common Future, "Youth has its Say", no. 17 (May 1992), p. 4; and Centre For Our Common Future, "World Youth Forum, San Jose, Costa Rica: Youth Stress Harmony Between North and South", *Brundtland Bulletin*, no. 16 (July 1992), p. SF1.

refreshingly outspoken, organising a number of action-oriented protests against militarism and large industries.³⁹ Their inclusion in Agenda 21 as decision-makers could have far-reaching implications, although there was some concern among youth at UNCED as to the sincerity of these proposals.⁴⁰

9.3.3 Non-Governmental Organisations

The strong presence of NGOs throughout the UNCED process was supported by formal accreditation procedures, ensuring NGO involvement and cooperation on a scale unprecedented for UN conferences.⁴¹ NGO involvement further represented a watershed with regard to enlarging the decision-making process at an international level.⁴² In preparation for UNCED, wide consultations were held in many countries, 70% of participating states reporting close participation from non-governmental groups.⁴³ The presence of NGOs on several national delegations also provided an important avenue of input to negotiations and served to bring NGOs closer to the workings of national governments.⁴⁴ A novel development was the participation of NGO experts in working parties drafting Agenda 21.⁴⁵ As a result of these factors, the Agenda 21 text and more specifically the chapter on the role of NGOs is considered to break new ground for NGOs worldwide.⁴⁶

³⁹ See for example, D. Kennedy, "Youth Build Garbage Art as a Protest", *Earth Summit Times*, 1 June 1992, p. 15; D. Kennedy, "Youth March Backwards at Forum", *Earth Summit Times*, 5 June 1992, p. 5; and D. Marti, "Mwango's Speech Lights Fire", *Earth Summit Times*, 12 June 1992, p. 3.

⁴⁰ Several incidents involving youth at the PrepComs and at UNCED fostered these suspicions. See for example Marti, "Mwango's Speech Lights Fire", p. 3; and "Violence at the Summit", *Terra Viva*, 12 June 1992, p. 7. See also the speech presented to the UNCED plenary on behalf of the world's youth by Wagaki Mwangi, "My Generation has been Damned", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 27.

⁴¹ See Centre For Our Common Future, "NGOs Involved in PrepCom II", *Network '92*, no. 6 (April 1991), p. 1; G. da Cunha, "NGOs: They Go where Laws Fear to Tread", *Earth Summit Times*, 1 June 1992, p. 2; C.G. Fraser, "Global Forum Opens Way to New Alliances", *Earth Summit Times*, 1 June 1992, p. 3; P.S. Thacher, "GOs Need NGO Talent", *Earth Summit Times*, 15 June 1992, p. 13; UN, "Non-Governmental Organisations (NGOs): Participation in the UNCED Process", *Earth Summit News*, May 1992.

⁴² R. Sharma, "Whither the Road from Rio", *Ecoforum* 16(2) (1992), p. 1; UN, "Non-Governmental Organisations: Participation in the UNCED Process".

⁴³ Thacher, "Think Globally, Act Locally", p. 7.

⁴⁴ See World Wide Fund For Nature (hereafter cited as the WWF), "Transnational Corporations", May 1992; UN, "Non-Governmental Organisations: Participation in the UNCED Process"; and "Bramble says Sustainability is still not on Agenda 21", *Earth Summit Times*, 5 June 1992, p. 16.

⁴⁵ Thacher, "GOs Need NGO Talent", p. 13.

⁴⁶ Harkavy, *The Earth Summit...*, p. 17.

How NGOs and other groups will be involved in follow-up activities is a key question.⁴⁷ Agenda 21 calls for the active participation of these groups both in the newly-formed Sustainable Development Commission charged with monitoring the implementation of Agenda 21⁴⁸ and at national environment and development policy-making levels. New approaches will thus need to be carefully formulated and assessed by the UN, governments and NGOs. For their part, NGOs will need to devote more attention to building credibility and expertise to make an impact that is substantial and influential.⁴⁹ The potential to do so certainly exists, especially in light of the stronger links which the UNCED process has forged between southern-based development and northern-based environment groups.⁵⁰ The processes are also more robust, particularly with the development of electronic networking.⁵¹

At the Global Forum, over 200 NGOs from various countries negotiated among themselves treaties on a wide range of issues which UNCED had either neglected to cover or had covered inadequately.⁵² Intended to be building blocks for a global movement of NGOs, the treaties aim to present a number of practical solutions that NGOs can implement.⁵³ Whether or not they all do is debatable but together with *Agenda ya Wananchi*⁵⁴ - the Citizen's Action Plan agreed to at the 1991 Paris Roots for the Future Conference - they certainly constitute a base upon which

⁴⁷ For a critique, see Thacher, "GOs Need NGO Talent", p. 13.

⁴⁸ See Chapter 10 of this dissertation for a detailed discussion of the Sustainable Development Commission.

⁴⁹ See A. Anand, "Time for NGOs to make their Strongest Statement", *Earth Summit Times*, 13 June 1992, p. 2; P. Chasek, "NGO Strategies on the Road from Rio", *Network '92*, no. 18 (June/July 1992), p. 2; and Sharma, "Whither the Road from Rio", p. 1.

⁵⁰ See M. Khor, "What to Do, Now it's Over...", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 4; and Levins, "Blossoming NGOs Offer Hope", p. 12.

⁵¹ See Chasek, "NGO Strategies on the Road from Rio", p. 2; and Thacher, "Think Globally, Act Locally", p. 7.

⁵² See Annex 4 of this dissertation for a complete list of "alternative treaties".

⁵³ A description of the alternative treaty-making process is detailed in a handout of the International non-governmental organisations (NGOs) and Social Movements Forum, "Programme for Participants" and in Centre for Our Common Future, "International NGO Forum at the Earth Summit: Commitments for the Future", *The '92 Global Forum*, no. 6 (March 1992), pp. 1-4. See also C.G. Fraser, "NGOs Stage Their Own Trick-or-Treaty Party", *Earth Summit Times*, 15 June 1992, p. 3; R. Isberto, "Slowness on 'Green Treaties'", *Terra Viva*, 10 June 1992, p. 7; P. Padbury, "NGOs Sign Alternative Treaties at the '92 Global Forum", *Network '92*, no. 18 (June/July 1992), p. 17; "Preparing Alternative Treaties", Press Release no. 35, Global Forum, Rio de Janeiro, 2 June 1992; and "NGO Treaties - Commitments for the Future", *Ecoforum* 16(2) (1992), pp. 6-7.

⁵⁴ Much of the attention at the Roots for the Future Conference was focused on developing a position paper from the conference to be presented at the Earth Summit. The result was *Agenda ya Wananchi: Citizen's Action Plan for the 1990s*. Reports of the conference can be found in E. Koch, "Children of the Soil", *New Ground*, no. 7 (Autumn 1992), pp. 31-32; and "NGO Conference Held in Paris", *Network '92*, no. 13 (January 1992).

further agreements can be made. Furthermore, they represent a firm commitment among NGOs to network with each other.⁵⁵

9.3.4 Business and Industry

Another precedent set at UNCED was the active involvement of business and industry in the preparatory process leading up to the conference.⁵⁶ The International Chamber of Commerce (ICC) and the Business Council for Sustainable Development (BCSD) played key roles in this process. The Council represents key industrial sectors including energy, chemicals, forestry and pesticides and is comprised of a group of 48 leading business leaders from around the world, some of them chief executives of transnational corporations (TNCs).⁵⁷

Two documents represent the respective positions of the ICC and BCSD at UNCED: the *Business Charter for Sustainable Development*⁵⁸ and *Changing Course: A Global Perspective on Development and the Environment*.⁵⁹ Each contribution provides valuable guidelines with regard to promoting cleaner technologies, more efficient production processes, preventive strategies and the full pricing of environmental goods and services. But for both the ICC and the BCSD economic growth is an essential prerequisite for sustainable development, an assertion which is questionable to those who regard economic growth as the antithesis of sustainability.⁶⁰ Both groups additionally perceive free trade as the only foundation for sustainable development, again an assertion that is

⁵⁵ In fact, included among the treaties is a "Communication, Information, Media and Networking Treaty". See Fraser, "NGOs Stage Their Own Trick-or-Treaty Party", p. 3.

⁵⁶ See Centre For Our Common Future, "Industry Prepares for UNCED: WICEM II Held in Rotterdam", *Network '92*, no. 6 (April 1991), p. 15; J.H. Faulkner, "Business' Mandate for UNCED", *Network '92*, no. 6 (April 1991), p. 2; S. Schmidheiny, "The Business of Business: Eco-efficiency", *Earth Summit Times*, 27 April 1992, p. 7; and UN, "The Business of Sustainable Development", *Earth Summit in Focus*, no. 8.

⁵⁷ A complete list of members of the Business Council for Sustainable Development can be found in the *Earth Summit Times*, Special Supplement, 13 May 1992, p. 11.

⁵⁸ At the Second World Industry Conference on Environmental Management in April 1991, more than 200 corporations and industry associations committed themselves to improve their environmental performance and use the Charter as the basis for pursuing such improvements. See Centre For Our Common Future, "Industry Prepares for UNCED: WICEM II Held in Rotterdam", p. 15.

⁵⁹ Schmidheiny, *Changing Course*. For a review of *Changing Course*, see G. Piel, "'Price Must Reflect Cost of Global Resources", *Earth Summit Times*, 13 May 1992, p. 14.

⁶⁰ See for example, Greenpeace International, *The Greenpeace Book of Greenwash* (n.p., 1992), pp. 4-8.

contentious.⁶¹ And finally, both the ICC and the BCSD favour self-regulation over government regulation, an option which many environmentalists are highly sceptical of.⁶²

The majority of NGOs at UNCED and the Global Forum were thus extremely scathing of the ICC and BCSD;⁶³ both for their erroneous interpretation of "sustainable development" and for their apparent influence on the UNCED process. Indeed, there was a clear trend at preparatory meetings to downplay the need to strengthen international monitoring and regulation of the private sector, and TNCs in particular, and instead promote self-regulation.⁶⁴ Nowhere in Agenda 21 is the need to regulate TNCs recognised nor is their contribution to global pollution acknowledged.⁶⁵ On the contrary, sections on "Full Cost Environmental Accounting" and "Global Corporate Environmental Management", both drawn from recommendations of the now defunct UN Centre for TNCs, were withdrawn from UNCED - mostly at the insistence of developed countries and the ICC.⁶⁶ Thus, while there is no doubt that the Agenda 21 chapter on strengthening the role of business and industry contains some important proposals, they should be evaluated in light of the above omissions.

9.3.5 Trade Unions

Although trade unions were represented at UNCED and the Global Forum, their participation throughout the UNCED process was poor.⁶⁷ As a result, labour has not been accorded the prominent role it deserves in Agenda 21, apart from the chapter on the role of trade unions.⁶⁸ This

⁶¹ See for example, D.R. Abbasi, "Eco-efficiency can be Good for Business", *Earth Summit Times*, 13 May 1992, p. 14; and Greenpeace International, *The Greenpeace Book of Greenwash*, pp. 4-8. See also Chapter 3 of this dissertation for a more detailed discussion of the debate.

⁶² See for example, Greenpeace International, *The Greenpeace Book of Greenwash*, pp. 4-8; and M. Khor, "Losers and Winners at Rio", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 3.

⁶³ See for example, Greenpeace International, *The Greenpeace Book of Greenwash*, pp. 4-8; M. Khor, "Refusing to Regulate TNCs: UNCED's Biggest Failure?", *Earth Summit Briefings*, no. 7, June 1992, pp. 1-3; WWF, Press Release, 2 April 1992; "Undue Influence" Denied by BCSD", *Crosscurrents*, 4 June 1992, p. 12; "Friends of the Earth: Beware of Fair Weather Friends", Press Release no. 85, Global Forum, Rio de Janeiro, 4 June 1992; and "Industrial Growth: is it Part of the Solution ... or the Root of the Problem?", *New Scientist*, 6 June 1992, p. 5.

⁶⁴ See Khor, "Refusing to Regulate TNCs: UNCED's Biggest Failure?", pp. 1-3.

⁶⁵ Ibid. See also Third World Network, the Forum of Brazilian NGOs, Greenpeace, Friends of the Earth International, "UNCED Ignores Ten Critical Issues", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 11-12.

⁶⁶ See Khor, "Refusing to Regulate TNCs: UNCED's Biggest Failure?", pp. 1-3; and WWF, Press Release, 2 April 1992.

⁶⁷ Comment from representatives for the International Confederation of Free Trade Unions (ICTFU) at the Global Forum, Rio de Janeiro, 5 June 1992.

⁶⁸ See Box 34.

has been to the detriment of UNCED - for example, trade unions could have played an extremely influential role in lobbying business and industry.⁶⁹ Part of the reason for their poor representation rests with the failure, until recently, to recognise the linkages between the outer environment and the work-based environment and between occupational health and safety and the environment.⁷⁰ Increasing appreciation of these connections has, however, resulted in a decision by the International Confederation of Free Trade Unions (ICFTU) to put environmental concerns on a more formal footing.⁷¹ This has considerable significance since the ICFTU represents 110 million workers and is thus the biggest NGO in the world.⁷² At the 15th World Congress of ICFTU held in Caracas in early 1992, two documents⁷³ were adopted representing the full policy of ICFTU on environment and development. A further meeting took place immediately prior to UNCED,⁷⁴ serving to raise the trade union profile at the conference.

9.3.6 Other Major Groups

Other major groups included in Agenda 21 were also present at UNCED and the Global Forum although to differing extents. Indigenous peoples were strongly represented, their right to self-determination being emphasised in the *Kari Oca Declaration* which resulted from the World Conference of Indigenous Peoples on Territory, Environment and Development preceding UNCED.⁷⁵ Ascend 21 (The International Conference on an Agenda for Science, Environment and Development into the 21st Century),⁷⁶ organised by the International Council of Scientific Unions in cooperation with the Third World Academy of Sciences, represented the chief contribution by the scientific and technological community to Agenda 21.

⁶⁹ In fact, the exclusion of trade union representatives from the BCSD drew hostile reactions from NGOs and trade unions. See Abbasi, "Eco-efficiency can be Good for Business", p. 14.

⁷⁰ Comment from representatives for the ICFTU at the Global Forum, Rio de Janeiro, 5 June 1992.

⁷¹ Statement of representatives for the ICFTU at the Global Forum, Rio de Janeiro, 5 June 1992.

⁷² Ibid.

⁷³ International Confederation of Free Trade Unions, *Environment and Development: The Trade Union Agenda*, ICFTU 15th World Congress (Brussels, 1992), 57 pp. The World Congress also adopted a resolution calling on governments to act upon the report's recommendations.

⁷⁴ See "Statement of the International Trade Union Conference on Environment and Models of Development", Sao Paulo, 30 May 1992.

⁷⁵ See S. Kottary, "Indigenous People Sign Rights Charter", *Earth Summit Times*, 1 June 1992, p. 15.

⁷⁶ International Council of Scientific Unions & Third World Academy of Sciences, "Conference Statement: International Conference on an Agenda of Science for Environment and Development into the 21st Century" (Vienna, 25-29 November 1991).

9.4 IMPLICATIONS FOR SOUTH AFRICA

Broad public participation and decentralised decision-making as advocated by Agenda 21 are highly relevant to South Africa, particularly in the light of past authoritarian approaches which have purposefully excluded the wider populace from decisions which have severely affected their lives. However, for public participation to be truly representative, a climate of tolerance - political or otherwise - and accountability must first be fostered. Cooperation between NGOs, mass-, worker- and community-based organisations will be a further prerequisite for effective public participation, as will the launch of a mass-based environmental literacy programme.⁷⁷ To this end, environmental education is part of government,⁷⁸ African National Congress (ANC),⁷⁹ Pan Africanist Congress (PAC),⁸⁰ and Inkatha Freedom Party (IFP)⁸¹ policy.

Public involvement in environmental management and decentralised decision-making are specifically embraced by both ANC policy⁸² and the President's Council Report on a National Environmental Management System.⁸³ All major groups recognised by Agenda 21 are likewise included in ANC policy, which proposes that local government include "people's assemblies" which will allow "all organs of civil society" to influence the process of government by serving as links between the state and the public.⁸⁴ An alternative suggestion, forwarded by the Development Bank of South Africa, is for an autonomous, dynamic representation of societal groups.⁸⁵

Agenda 21 provides some important suggestions regarding the role of major groups in sustainable development, many of the proposals relating to the broader question of equal rights for all. Its recommendations concerning women are of specific relevance in South Africa, a society

⁷⁷ F. Khan, Coordinator of the Environmental Advisory Unit, University of Cape Town, pers. comm.

⁷⁸ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), pp. 116-124.

⁷⁹ African National Congress (hereafter cited as the ANC), *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 31.

⁸⁰ B. Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", *History in the Making* 3(1) (1991), p. 47.

⁸¹ Inkatha Freedom Party, "Environmental Policy of the Inkatha Freedom Party", *History in the Making* 3(1), p. 50.

⁸² ANC, *Ready to Govern...*, p. 31.

⁸³ President's Council, *Report of the Three Committees...*, p. 115.

⁸⁴ ANC, *Ready to Govern...*, p. 17.

⁸⁵ See B. Ludman, "What Role will the 'Organs of People's Power' Play?", *Weekly Mail*, 5-11 June 1992, p. 23.

which has a history of gender discrimination.⁸⁶ Black women in particular are one of the most exploited and poverty-stricken groups in the country.⁸⁷ The proposals of Agenda 21 which relate to youth and children are similarly valid although may not be entirely appropriate, given that many young South Africans barely have access to primary health care and adequate nutrition,⁸⁸ let alone education, employment or decision-making forums.

The relevance for South Africa of Agenda 21's references to indigenous peoples is difficult to determine, primarily because of the vague meaning of this term. By definition the expression refers to people who initially inhabited the land - the San, and later the Khoi.⁸⁹ In broad terms any South African with the exception of whites can claim indigenous status.⁹⁰ Either way, Agenda 21's recommendations are valuable proposals which could strengthen the rights of marginalised or threatened communities.

Equally important are the proposals of Agenda 21 concerning the scientific and technological (S&T) community; in particular the need to make S&T activities more responsive to sustainable development needs, the call for the S&T community to be more accountable and understandable to the public, and the importance of promoting regional cooperation. As one of the few countries in Africa to have strong S&T capacities, the relevant South African communities could play a crucial regional role.⁹¹

South African business and industry are similarly well-placed to promote regional initiatives towards cleaner and more efficient production processes, as proposed by Agenda 21. This will only occur, however, if current endeavours among the private sector are strengthened and accelerated, and a greater number of industries and businesses are encouraged to adopt more environmentally responsible production processes. In South Africa, it is likely that business and industry will have an additional function in being a major source of funding for the implementation of various Agenda

⁸⁶ F. Wilson & M. Ramphela, *Uprooting Poverty* (Cape Town: David Philip, 1989), pp. 178-180.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*, pp. 174-177.

⁸⁹ E. Boonzaier, Professor of Anthropology, Department of Anthropology, University of Cape Town, pers. comm.

⁹⁰ *Ibid.*

⁹¹ See also The African Academy of Sciences, "Mbabane Declaration on Environment and Development: Scientific Initiatives" and the "Recommendations of the African Academy of Sciences Pan-African Conference on Environment and Development in Africa: Scientific Initiatives". Both documents resulted from a Conference held in Mbabane, Swaziland, 12-13 November 1991.

21 programmes.⁹² If effected appropriately, tremendous scope exists for business to strike up partnerships with government, NGOs and local communities to implement successful, environmentally sound development schemes which are to the benefit of all concerned. Similar scope exists in Agenda 21's call to business and industry to improve the knowledge and skills of workers and trade unions, thus allowing workers to both participate in environmental audits and be cognisant of the requirements for sustainability. These factors are particularly important if business and industry are permitted to self-regulate.

Although South African trade unions could represent one of the most important and powerful allies of the environmental movement, there has been a distinct lack of labour participation in environmental issues.⁹³ This has largely been due to other issues taking greater priority and a perception that environmental issues are not relevant to unionists.⁹⁴ Nonetheless, recent occurrences have indicated that increasing recognition is being given to the role of the labour movement in promoting environmental protection.⁹⁵ In many instances, however, the lack of accessible information from companies regarding potentially harmful processes and products is a deterrent to effective action.⁹⁶ Agenda 21's proposal for governments and employers to ensure open access to information to enable effective participation in decision-making processes thus has direct bearing for trade unions and indeed for the environmental movement.

Finally, Agenda 21 proposals to strengthen NGO input into government and UN policy and involve NGOs in UN and national mechanisms and procedures established to carry out Agenda 21 require careful consideration by South African NGOs. While these proposals are extremely relevant, they require expertise, credibility, consensus, cooperation and good organisation among NGOs. These are difficult objectives given the diversity of NGOs present in South Africa but it is

⁹² J. Hobbs, Coordinator of the Industrial Environmental Forum of Southern Africa, pers. comm.

⁹³ R. Crompton & A. Erwin, "Reds and Greens: Labour and the Environment", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), p. 80.

⁹⁴ M. Colvin [Industrial Health Unit], "Labour and Environment", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa", Pietermaritzburg, 14-18 September 1992; Crompton & Erwin, "Reds and Greens: Labour and the Environment", pp. 78-91.

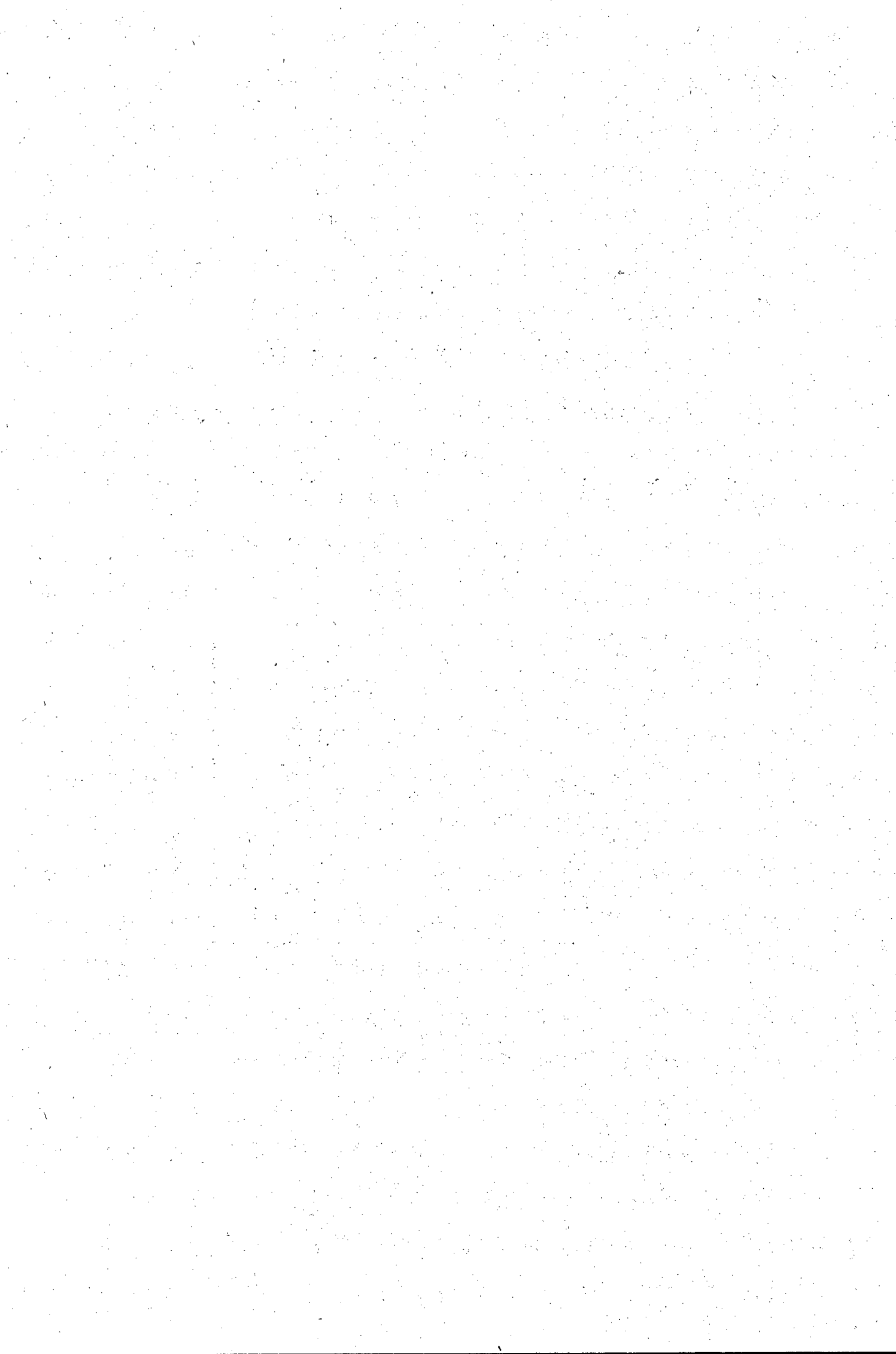
⁹⁵ See for example, Chemical Workers Industrial Union, "The Fight for Health Safety", in *Restoring the Land*, eds M. Ramphela & C. McDowell (London: Panos, 1991), pp. 79-86; Crompton & Erwin, "Reds and Greens: Labour and the Environment", pp. 78-91; F. Khan, "Sinking or Swimming?", *New Ground*, no. 10 (Summer 1992/93), pp. 23-26; and E. Koch, "Rainbow Alliances", in *Going Green*, pp. 20-32.

⁹⁶ S. Miller [Chemical Workers Industrial Union], Untitled paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa"; M. Morokong [South African Chemical Workers Union], "The Role of Trade Unions in Environmental Protection", Paper presented at the Earthlife Africa Conference "What it Means to be Green in South Africa".

here that perhaps the greatest challenge lies: namely to integrate traditional conservation NGOs with organisations concerned with development issues and thus promote a broad NGO-based forum which can work collectively to promote the integration of environment and development at a national and international level.⁹⁷

This concludes Chapter 9 which has described the role of women, youth, children, indigenous peoples, NGOs, workers and trade unions, business and industry, local authorities, the scientific and technological community and farmers in implementing Agenda 21. This chapter has also examined the participation of these groups in the UNCED process and the implications of Agenda 21 and UNCED for similar groups in South Africa. The following chapter will describe the legal, institutional, technological and financial machinery necessary to implement Agenda 21. □

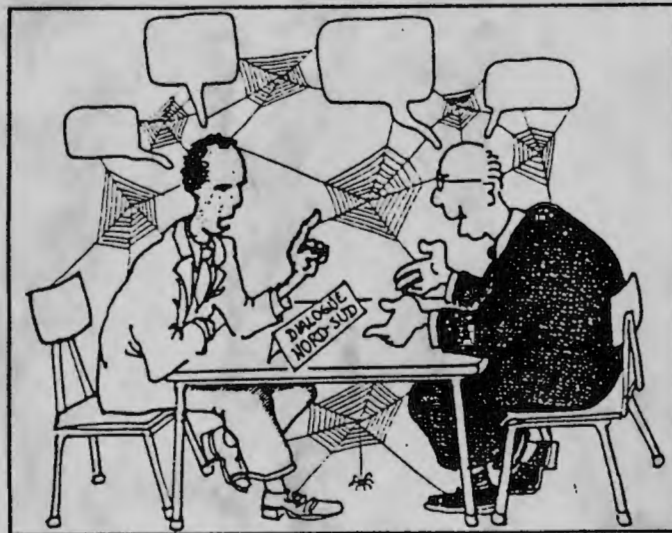
⁹⁷ See L. Abrams, *The Rural Development Crisis* (Johannesburg: Rural Advice Centre, 1992), pp. 5-6; and D. Cooper, "After UNCED - NGOs must get their Act Together", *New Ground*, no. 9 (Spring 1992), p. 49.



Chapter 10

THE ESSENTIAL MEANS:

FINANCIAL, TECHNOLOGICAL, INSTITUTIONAL AND
LEGAL MECHANISMS



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from restricted access to Northern markets, are estimated at \$250 billion each year.³ Reversing these trends, it is argued, can only occur with the simultaneous reform of current development models.⁴ Increased access to the markets of industrialised countries, increased inflow of private investment, technology transfer, durable solutions to debt problems, and the removal of escalating tariffs on imports from developing countries would be part of this reform process.⁵

In the absence of such reform, financial inflows are required by developing countries to partly offset the massive South-North outflow, and to implement Agenda 21.⁶ Industrialised countries, in the preparatory meetings leading up to UNCED, agreed to the need to generate "new and additional financial resources" (ie over and above the present target of 0.7% of Gross National Product (GNP) for development aid).⁷ Unresolved issues dominating the debate at UNCED concerned mechanisms to do this, amounts required, responsibilities for payment and institutional arrangements.⁸

Equally difficult negotiations at UNCED concerned technology transfer. Although numerous texts have been negotiated over the last 25 years, these have made little

³ Eminent Persons' Meeting on Financing Global Environment and Development, Tokyo (April 15-17 1992), reported in C. Flavin, "Leaders Lend Summit Support", *Earth Summit Times*, 3 June 1992, p. 6; and O. Chubb, "Eminent Persons' Meeting on Finance Held in Tokyo", *Network '92*, no. 16 (April 1992), pp. 4-5. See also D. Runnalls, "An Open Letter to the Assembled World Leaders at the Summit", *Earth Summit Times*, 12 June 1992, p. 16; and UN Development Programme (hereafter cited as the UNDP), *Human Development Report 1992*, summarised in *Earth Summit Times*, Special Supplement, 27 April 1992.

⁴ See Khor, "UNCED must Reform North Economy...", pp. 10-14; J.K. Nyerere [former President of Tanzania], "Consumption must also be Sustainable", *Earth Summit Times*, 13 June 1992, p. 6; and M. ul Haq, "'Development' Requires New Models", *Earth Summit Times*, 12 June 1992, p. 10.

⁵ Statement of the Second Ministerial Conference of Developing Countries on Environment and Development, reported in D.R. Abbasi, "Developing Nations Firm on Funding", *Earth Summit Times*, 13 May 1992, p. 5. See also Khor, "UNCED must Reform North Economy...", pp. 10-14; Khor, "Nine Key Tests of UNCED's Success"; Nyerere, "Consumption must also be Sustainable", p. 6; Runnalls, "An Open Letter...", p. 16; D. Runnalls, "Trade, the Missing Money Link", *Earth Summit Times*, 14 June 1992, p. 7; and South Centre, *Environment and Development...*, pp. 2-20.

⁶ See The Kuala Lumpur Declaration on Environment and Development, arising from the Second Ministerial Conference of Developing Countries on Environment and Development (April 26-29 1992), reviewed in Centre for Our Common Future, *Network '92*, no. 17 (May 1992), p. 5; and Centre for Our Common Future, *Brundtland Bulletin*, no. 16 (July 1992), p. 35. See also D.R. Abbasi, "Pledges are Made: Are they for Real?", *Earth Summit Times*, 13 June 1992, p. 4; Khor, "Nine Key Tests of UNCED Success", p. 6; and South Centre, *Environment and Development...*, pp. 2-20.

⁷ See A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 21.

⁸ A review of these issues can be found in M. Khor, "Finance: The Big Five Issues", *Terra Viva*, 10 June 1992, p. 23; and G. Porter, "Reaching a Consensus on Financial Resources", *Network '92*, no. 4, Special Network Supplement (1992).

Chapter 10

THE ESSENTIAL MEANS: FINANCIAL, TECHNOLOGICAL, INSTITUTIONAL AND LEGAL MECHANISMS

10.1 BACKGROUND

From the outset it has been apparent that the United Nations Conference on Environment and Development's (UNCED) success would be largely determined by two factors: the adequate provision of financial resources, and the affordable transfer of environmentally sound technology (EST) to developing countries.¹ The reasoning behind this is clear. Implementation of Agenda 21 and the conventions will be costly, and developing countries can ill-afford additional financial commitments. Equally, technology transfer is critical to assist developing countries taking the actions necessary for implementation. Such technologies could include managing renewable energy resources, new conservation techniques, and integrated pest management to mention a few.

Regarding financial assistance, developing countries have argued that the reason they require vast amounts of capital is due to the policies of the World Bank, the General Agreement on Tariffs and Trade (GATT) and the International Monetary Fund (IMF).² Net resource transfers from South to North, coupled with a loss of income

¹ M. Khor, "Nine Key Tests of UNCED's Success", *Third World Network*, no. 18 (1992); Reconvened World Commission on Environment and Development (hereafter cited as Reconvened WCED), *Our Common Future*, London, 22-24 April 1992 (Geneva: Centre for Our Common Future, 1992), pp. 12-17; South Centre, *Environment and Development: Towards a Common Strategy of the South in the UNCED Negotiations and Beyond* (n.p., 1991), pp. 2-20; United Nations (hereafter cited as the UN) Secretary-General Boutros Boutros-Ghali, opening address at the Earth Summit, in "Boutros-Ghali: 'Planetary Development'", *Earth Summit Times*, 3 June 1992, p. 4; UN Conference on Environment and Development (hereafter cited as UNCED) Secretary-General Maurice Strong, opening address at the Earth Summit, in "Strong Starts Delegates on a Journey to Save the World", *Earth Summit Times*, 4 June 1992, pp. 6-7.

² See Chapter 2 of this dissertation for a more detailed discussion of these institutions. See also N.L. Gerson, "NGOs Debate Bank and Government on \$", *Earth Summit Times*, 7 June 1992, p. 3; and M. Khor, "UNCED must Reform North Economy, South Development & World Economic Order", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 10-14.

difference to the technology gap between North and South.⁹ Most technologies are owned by industrialised countries and are either unaffordable or inappropriate to developing nations.¹⁰ Although international consensus exists on the need to transfer EST, the means and mechanisms to achieve this goal are contentious.¹¹

Briefly, developing countries regard the protection of intellectual property rights (IPRs) through patents as a barrier to setting poorer nations on a sustainable path. Terms of transfer should be beneficial to developing countries, and control of transferred technology should be vested with governments and institutions.¹² Industrialised countries (and the Business Council for Sustainable Development) on the other hand, have argued strongly for the protection of patents and for technical cooperation between enterprises.¹³

Developing countries generally lack the capacity, institutions, finance or technological base to apply EST and adapt it to individual needs and conditions.¹⁴ Building up these capacities is thus an integral part of successful technology transfer. This is addressed in Agenda 21 under a series of chapters: "National Mechanisms and International Cooperation for Capacity Building";¹⁵ "Science for Sustainable Development";¹⁶ and "Information for Decision Making".¹⁷ Summaries of these chapters are presented in Boxes 40-42.

⁹ C. Raghavan, "Technology Talks Shed Little New Light on Old Issues", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 30-31.

¹⁰ O. Anyadike, "Private Business Cashing in on Technology Transfer", *Terra Viva*, 13 June 1992, p. 14; C.Y. Ling, "Technology Transfer will Not Solve Environmental Crisis", *Third World Resurgence*, no. 14/15 (October/November 1991), p. 32.

¹¹ For further detail, see Anyadike, "Private Business Cashing in on Technology Transfer", p. 14; M. Gilbert, "Transfer of Tech not Easy", *Terra Viva*, 4 June 1992, p. 6; and C. Raghavan & M. Khor, "N-S Wrangle over Terms of Technology Transfer", *Third World Resurgence*, no. 14/15 (October/November 1991), p. 29.

¹² See Gilbert, "Transfer of Tech not Easy", p. 6; M. Okie-Fouracre, "Tech Transfer Needed from 'Bottom to Top'", *Earth Summit Times*, 10 June 1992, p. 11; and Raghavan & Khor, "N-S Wrangle over Terms of Technology Transfer", p. 29.

¹³ See Gilbert, "Transfer of Tech not Easy", p. 6; Greenpeace International, *The Greenpeace Book of Greenwash* (n.p., 1992), pp. 7-8; and O. Ketilsson [Business Council for Sustainable Development], "Efficient Technology Transfer", *Network '92*, no. 8, Special Network Supplement (1991).

¹⁴ Gilbert, "Transfer of Tech not Easy", p. 6.

¹⁵ Agenda 21, chapter 37.

¹⁶ Agenda 21, chapter 35.

¹⁷ Agenda 21, chapter 40.

Accomplishing the tasks agreed to at UNCED will additionally require existing institutions to be modified and strengthened, and new organisations to be created.¹⁸ This concerns both the United Nations (UN) system, as it undergoes restructuring, and its relationship to other intergovernmental and non-governmental organisations. "Financial Resources and Mechanisms"; "Transfer of Environmentally Sound Technology"; "International Institutional Arrangements"; and "International Legal Instruments and Mechanisms" are described in some detail in this section: key points are contained in the conclusions of each section.

BOX 40. NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING¹⁹

Capacity-building means developing a country's human, scientific, technological, organisational, institutional and resource capabilities. While specific capacity-building programmes are included throughout Agenda 21 for different issues, a separate chapter deals solely with capacity-building for the implementation of Agenda 21.

- To implement Agenda 21, individual countries need to identify internal priorities and needs, and formulate capacity-building strategies. This process should be through consensus, resulting from participation of all interest groups.
- By 1994, each country should complete a review of its capacity-building needs.
- Technical cooperation, if required, should focus on each country's specific development needs and priorities. Endogenous capacities should be strengthened through the process. Strategies, priorities and programmes should focus on long-term challenges rather than concentrating on immediate problems only.
- International aid and technical cooperation programmes should be actively reviewed and evaluated by the UN, donors, recipients and international organisations. Activities of the UN in technical cooperation could be strengthened.
- The UN Development Programme, the World Bank and regional multilateral development banks should assist in facilitating national capacity-building.
- At the regional level, existing organisations should consider improving consultative processes to facilitate the exchange of data, information and experience.
- Technical aid to developing countries will cost \$15 billion annually. Implementing the above-mentioned activities will cost between \$300 million and \$1 billion per annum (1993-2000) from the international community on grant or concessional terms.

¹⁸ Centre for Our Common Future, "Mapping Out Future Institutional Change", *Network '92*, no. 12 (November 1991), pp. 1, 10; J. Elliott, "Khalid: EcoSoc Needs Power to Play", *Earth Summit Times*, 14 June 1992, p. 5; S. Kottary, "UN Agencies Prepare for Agenda 21", *Earth Summit Times*, 15 June 1992, p. 5.

¹⁹ Agenda 21, chapter 37.

BOX 41. SCIENCE FOR SUSTAINABLE DEVELOPMENT²⁰

This chapter of Agenda 21 draws from, and is in harmony with, the recommendations of the International Conference on an Agenda for Science, Environment and Development into the 21st Century (Ascend 21). In it, the role of science in sustainable development is emphasised, as is the need for science to respond to emerging needs. To this end scientists have a responsibility to enhance understanding and facilitate interaction between science and society. There is a particular need for interdisciplinary research to improve our understanding of land, oceans, atmosphere and their interlocking water, nutrient and biogeochemical cycles and energy flows. While scientific assessments of current and future environmental conditions should be used in the decision-making process, lack of full scientific understanding should not be used as an excuse to postpone actions. The full participation of scientists from developing countries in international scientific research programmes is essential.

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
STRENGTHENING THE SCIENTIFIC BASIS FOR SUSTAINABLE MANAGEMENT \$150 million (\$30 million from the international community on grant or concessional terms)	Countries, with the assistance of international organisations should: <ul style="list-style-type: none"> ● prepare an inventory of natural and social science data, identify research needs and priorities, and improve capabilities for determining these priorities; ● develop methods to link scientific findings with the indigenous knowledge of different cultures; ● assimilate data on the linkages between the state of ecosystems and the health of human communities; ● ensure better communication among scientists, decision-makers and the general public; and ● develop quality-of-life indicators, economic approaches to environmentally sound development, and incorporate uncertainty and risk into policies.
ENHANCING SCIENTIFIC UNDERSTANDING \$2 billion (\$1.5 billion from the international community on grant or concessional terms)	<ul style="list-style-type: none"> ● National and international monitoring, observation and research networks should be established and expanded to enhance the predictive modelling and assessment of environmental changes. ● There is a need to expand monitoring of physical-chemical-biological cycles; coordinate satellite surveys of air, water and land; study the role of biodiversity and the loss of species; develop techniques to predict responses to environmental stress; and research responses to and impacts of humans on global environmental change.
IMPROVING LONG- TERM SCIENTIFIC ASSESSMENT \$35 million (\$18 million from the international community on grant or concessional terms)	<ul style="list-style-type: none"> ● Existing data- and statistics-gathering systems should be coordinated to allow long-term scientific assessments. ● Standardised audits of carrying capacity and vulnerable resources should be carried out regularly at the national, regional and global levels.

²⁰ Agenda 21, chapter 35. See also Box 37.

<p>BUILDING UP SCIENTIFIC CAPACITY AND CAPABILITY</p> <p>\$750 million (\$470 million from the international community on grant or concessional terms)</p>	<ul style="list-style-type: none"> ● Scientific education and training should be promoted, with emphasis on incorporating environmental considerations into research and development projects. ● National scientific databases and regional/international networks should be expanded, and the full and open exchange of scientific data and information promoted. ● Scientific infrastructure in developing countries should be strengthened, and adequate salaries and facilities made available. This will stem the exodus of scientists from these countries, and increase their scientific capacities. ● Indigenous knowledge should be compiled, analysed and published.
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BOX 42. INFORMATION FOR DECISION-MAKING²¹

There is an need for information at all levels - from senior decision-makers to grassroots and individual levels. Within many developing countries, and also at the international level, there is a lack of capacity to access, collect, analyse and disseminate information. This, together with shortages of personnel, funding and technology, impairs the capacity of countries to make informed decisions concerning development and environment. This is compounded by the use of indicators such as GNP which do not provide adequate indications of sustainability.

PROGRAMME AREA & cost per annum (1993-2000)	ACTIVITIES
<p>BRIDGING THE DATA GAP</p> <p>\$1.9 billion from the international community on grant or concessional terms</p>	<p>Countries and international organisations should:</p> <ul style="list-style-type: none"> ● create indicators for sustainable development to provide a base for decision-making at all levels; ● carry out inventories of environmental, resource and developmental data; ● strengthen data-collection activities within the UN Environment Programme and the UN Earthwatch programme; ● consider institutional changes at the national level to effectively integrate environmental and developmental information; and ● establish mechanisms to help local communities sustainably manage their environment and resources.
<p>IMPROVING AVAILABILITY OF INFORMATION</p> <p>\$165 million from the international community on grant or concessional terms</p>	<ul style="list-style-type: none"> ● Existing national and international mechanisms for information processing and exchange should be strengthened and reviewed, whilst reinforcing national capacities. ● Emphasis should be placed on transforming existing information into forms better suited for decision-making. ● Governments should support initiatives to harmonise and improve information exchange at all levels. ● Electronic networking, together with other coordinating mechanisms should be encouraged among non-governmental organisations (NGOs), bilateral donors, the private sector and the public at large.

²¹ Agenda 21, chapter 40.

FINANCIAL RESOURCES AND MECHANISMS

10.2 COST OF IMPLEMENTING AGENDA 21

The UNCED secretariat has estimated that the cost of implementing Agenda 21 in developing countries will be \$600 billion per year between 1993-2000.²² Of this amount, \$125 billion should originate from international foreign aid.²³ This represents \$75 billion of concessionary funds over and above the current official development assistance (\$50 billion).²⁴ The remaining \$475 billion is expected to come from developing countries.²⁵

10.3 MEANS OF IMPLEMENTATION

A number of diverse funding sources and mechanisms have been proposed to fund Agenda 21 and are described below.

10.3.1 Official Development Assistance

A target of 0.7% of GNP for official development assistance (ODA) was established in the 1960s, yet has been achieved by only a few countries.²⁶ Current average contributions to ODA from developed countries amount to 0.35% of GNP - equivalent to \$50 billion annually from member countries of the Organisation of

²² Chapter 33, para. 20.

²³ Ibid.

²⁴ Reconvened WCED, *Our Common Future*, p. 16.

²⁵ Ibid. See also "Strong Starts Delegates on a Journey to Save the World", pp. 6-7.

²⁶ D. Runnalls, "Summit Recap: No Cash, More G-77", *Earth Summit Times*, 14 June 1992, p. 3; S. Ramphal, *Our Country, The Planet* (Washington D.C.: Island Press, 1992), pp. 187-189.

Economic Cooperation and Development (OECD).²⁷ Meeting the 0.7% commitment would thus provide an additional \$50 billion each year to developing countries, totalling \$100 billion of the required \$125 billion to implement Agenda 21.²⁸

One of the major financial stumbling blocks at UNCED concerned setting deadlines for the attainment of this target. The final text adopted in Agenda 21 "reaffirms the commitment" of developed countries to 0.7% of GNP for ODA.²⁹ For those countries which have never affirmed this commitment (United States and Switzerland) a separate clause implores countries to "make their best efforts to increase their levels of ODA".³⁰ This should be reached by the year 2000 or "as soon as possible thereafter".³¹

This vague timetable is widely perceived to be ineffective since it merely repeats the rhetoric of the past.³² One task of the established Sustainable Development Commission³³ will be to redress past failings and actively review and monitor progress towards the target.³⁴

10.3.2 Financial Commitments By Industrialised Countries

A key demand of developing countries³⁵ was the need for industrialised countries to commit a substantial first tranche of funds to initiate the implementation of Agenda

²⁷ M. Osava, "North must Pay Aid", *Earth Summit Times*, 6 June 1992, p. 2.

²⁸ Centre for Our Common Future, "The Rio Results", *Brundtland Bulletin*, no. 16 (July 1992), p. 4; Khor, "Finance: The Big Five Issues", *Terra Viva*, 10 June 1992, p. 23; K. Nath, "The North will have to Give an Extra \$70 Billion to Implement Agenda 21", *Terra Viva*, 5 June 1992, p. 4.

²⁹ Chapter 33, para. 15.

³⁰ *Ibid.*

³¹ *Ibid.*

³² See Runnalls, "An Open Letter...", p. 16.

³³ See "International Institutional Arrangements" in this chapter.

³⁴ Centre for Our Common Future, "The Rio Results", p. 5.

³⁵ See for example, S. Federovisky, "White Smoke on the Way", *Terra Viva*, 10 June 1992, p. 3; and Khor, "Finance: The Big Five Issues", p. 23.

21.³⁶ As a benchmark to measure UNCED's success, the Brundtland Commission suggested a minimum of \$10 billion.³⁷

Financial commitments made by governments at UNCED were in different forms and the total pledged is difficult to calculate. However, the goal of \$10 billion was certainly not attained.³⁸ Most estimates varied between \$2-3 billion per year in new and additional financial resources.³⁹ Maurice Strong, Secretary-General of UNCED, placed the amount at between \$6-7 billion a year in a best-case scenario.⁴⁰

"Never have the rich felt so poor" was a well-known catch phrase at UNCED.⁴¹ This proclaimed poverty has, however, been questioned by those who point towards the recent \$6 billion input by Northern countries to establish the Rouble conversion fund.⁴² The salvage of decaying Soviet nuclear reactors is another case in point.⁴³ Billions of dollars similarly flow into unsustainable development paths: a mere 12% of annual global military spending is equivalent to the \$125 billion needed to fund sustainable development each year.⁴⁴

10.3.3 Responsibilities of Developing Countries

For their part, developing countries must present good projects, contribute matching funds and report on national plans for sustainable development at the 47th session of the UN General Assembly.⁴⁵

³⁶ Chapter 33, para. 21.

³⁷ Reconvened WCED, *Our Common Future*, p. 16.

³⁸ J. MacNeill & D. Runnalls, "Earth Summit's Money Pie is Long on Syrup but Short on Dough", *Earth Summit Times*, 13 June 1992, pp. 8-9; Runnalls, "Summit Recap: No Cash, More G-77", p. 3.

³⁹ See D.E. Pitt, "History will be the Judge", *Earth Summit Times*, 15 June 1992, p. 16; Runnalls, "Summit Recap: No Cash, More G-77", p. 3; and D. Runnalls, "Successes and Failures from Rio: Optimism must Guide us", *Earth Summit Times*, 15 June 1992, p. 7.

⁴⁰ See Centre for Our Common Future, "The Rio Results", p. 4; and Pitt, "History will be the Judge", p. 16.

⁴¹ Quote from a speech by Maurice Strong, in Runnalls, "Successes and Failures from Rio...", p. 7.

⁴² Runnalls, "Summit Recap: No Cash, More G-77", p. 3.

⁴³ *Ibid.*

⁴⁴ M. Okie-Fouracre, "Military Cuts for Development Fund", *Earth Summit Times*, 13 June 1992, p. 5.

⁴⁵ Chapter 33, para. 22.

10.3.4 Multilateral Development Banks and Funds

a. International Development Association

The International Development Association (IDA) is an arm of the World Bank which provides credit to about 90 of the world's poorest nations at 0% interest rate.⁴⁶ Since developing countries do not participate in IDA voting, UNCED was regarded as a rare opportunity to influence IDA deliberations.⁴⁷ Industrialised countries replenish the IDA every three years and the 9th replenishment totalling \$15 billion expires in June 1993.⁴⁸

At UNCED, the President of the World Bank proposed that an additional \$5 billion be added onto the 10th replenishment as an "Earth Increment" to support environmental projects in IDA recipient countries.⁴⁹ Of this money, \$1.5 billion would be contributed by the World Bank and \$3.5 billion from donor countries. This amount would be in addition to funds required to maintain IDA at inflation-adjusted terms (estimated at \$3 billion).⁵⁰

Major donor countries however, resisted this idea⁵¹ and the final text lists IDA as a funding source⁵² but removes any specific reference to the "Earth Increment". The forthcoming 10th replenishment of the IDA will examine the matter further.⁵³

⁴⁶ O. Anyadike, "World Bank Grips Purse Strings", *Terra Viva*, 6 June 1992, p. 4.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ D.R. Abbasi, "'Earth Increment' could include \$5B", *Earth Summit Times*, 5 June 1992, p. 3; Anyadike, "World Bank Grips Purse Strings", p. 4.

⁵⁰ Ibid.

⁵¹ See D.R. Abbasi, "Agenda 21 Disputes are on the Table", *Earth Summit Times*, 11 June 1992, p. 3; MacNeill & Runnalls, "Earth Summit's Money Pie...", pp. 8-9.

⁵² Chapter 33, para. 16(a)(i).

⁵³ Ibid.

b. The Global Environmental Facility

The Global Environmental Facility (GEF) is a funding facility set up with a three-year mandate in 1991.⁵⁴ The World Bank, UN Development Programme (UNDP) and UN Environment Programme (UNEP) administer grants of the GEF for investment projects, technical assistance and research respectively. The Facility is largely convention-driven and is the interim financing mechanism of both the Climate and Biodiversity Conventions.⁵⁵ Funding is provided to public, private and non-government sectors to cover "incremental costs" incurred by developing countries in protecting the global environment.⁵⁶ The difference in cost between national environment policies and global benefits is provided by GEF (see Box 43).

The original scope of the GEF assisted developing countries in dealing with four global environmental problems: global warming, pollution of international waters, destruction of biological diversity, and depletion of the ozone layer.⁵⁷ This initial mandate was heavily criticised by developing nations as reflecting the concerns of the North only.⁵⁸ As a result, the GEF's scope has been expanded to include land degradation, desertification and deforestation.⁵⁹ There is still concern that the inclusion of these issues pays lip service only to some of the biggest environmental problems of developing countries.⁶⁰ Furthermore, other major environmental issues such as toxic and nuclear waste management, water scarcity and sustainable agriculture have been ignored.⁶¹

⁵⁴ UNDP, UNEP & The World Bank, *Global Environment Facility* (n.p., December 1991), p. 1; UNDP, UNEP & The World Bank, *Global Environment Facility: The Pilot Phase and Beyond*, Working Paper Series no. 1 (n.p., May 1992), p. 15.

⁵⁵ Article 21, para. 3 and Article 39 of the Climate and Biodiversity Conventions respectively.

⁵⁶ UNDP, UNEP & The World Bank, *Global Environment Facility. Scientific and Technical Advisory Panel. Criteria for Eligibility and Priorities for Selection of Global Environment Facility Projects* (n.p., May 1992), p. 2.

⁵⁷ *Ibid.*, p. 3.

⁵⁸ The Centre for Science and the Environment, "Statement on Global Environmental Democracy", reviewed in F. Pearce, "No Southern Comfort at Rio?", *New Scientist*, 16 May 1992, pp. 38-41. See also, V. Shiva, "Why GEF is an Inadequate Institution for UNCED", *Earth Summit Briefings*, no. 19 (1992).

⁵⁹ Chapter 33, para. 16(a)(iii). See also J. Lobe, "World Bank Laying Claim to Funds for GEF", *Terra Viva*, 3 June 1992, p. 2; and "GEF Responds to Criticisms", Press Release no. 4, Global Forum, Rio de Janeiro, 31 May 1992.

⁶⁰ Shiva, "Why GEF is an Inadequate Institution for UNCED".

⁶¹ *Ibid.*

Other criticisms levelled at GEF include the control of GEF by donor countries only, limited access to information on projects, and the lack of GEF's accountability.⁶² Many of these reproaches stem from the involvement of the World Bank in GEF. Historically the Bank is not transparent, accountable or democratic.⁶³ Chief donor countries have openly used the Bank's lending power to achieve "structural adjustment" in recipient countries and there is concern that the GEF will impose the same political and structural conditions.⁶⁴

Most of these criticisms, save involvement of the World Bank, have been partially redressed in the restructuring and expanded role of GEF in Agenda 21.⁶⁵ Membership is now supposedly universal, regardless of whether or not countries contribute funds, and the \$5 million membership fee has been waived.⁶⁶ Agenda 21 further states that GEF's activities should be more transparent and its decision-making made more democratic. In addition to these changes, access to the GEF funds will be on mutually agreed terms "without introducing new forms of conditionality".⁶⁷

Nevertheless, the GEF is still regarded with suspicion by those who question its universality, its narrow focus and the commitments of the World Bank to the environment.⁶⁸ Despite recent shifts in World Bank policy, evidence at the project

⁶² O. Anyadike, "For South, Week of Frustration", *Terra Viva*, 8 June 1992, p. 5; L. Gould, "'New' GEF Greeted with Uncertainty", *Earth Summit Times*, 13 May 1992, p. 3; Greenpeace International, "The World Bank's Greenwash: Touting Environmentalism While Trashing the Planet" (April 1992), pp. 1-9; A. Kassam, "Dutch Minister for Cooperation: The North should not Control GEF", *Terra Viva*, 9 June 1992, pp. 12-13; Khor, "Finance: The Big Five Issues", p. 23; Shiva, "Why GEF is an Inadequate Institution for UNCED".

⁶³ Gould, "'New' GEF Greeted with Uncertainty", p. 3; V. Shiva, "World Bank Cannot Protect the Environment", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 22-23.

⁶⁴ See Abbasi, "Agenda 21 Disputes are on the Table", p. 3; Gould, "'New' GEF Greeted with Uncertainty", p. 3; Greenpeace International, "The World Bank's Greenwash...", pp. 1-9; and Khor, "Finance: The Big Five Issues", p. 23; Khor, "Nine Key Tests of UNCED Success", p. 6.

⁶⁵ Chapter 33, para. 16(a)(iii).

⁶⁶ *Ibid.* See also P. Gupte, "GEF must Keep Going", *Earth Summit Times*, 14 June 1992, p. 5; and Lobe, "World Bank Laying Claim to Funds for GEF", p. 2.

⁶⁷ Chapter 33, para. 16(a)(iii).

⁶⁸ See for example, Anyadike, "For South, Week of Frustration", p. 5; J. Elliott, "Jury Undecided on GEF's First Year", *Earth Summit Times*, 2 June 1992, p. 3; C.G. Fraser, "NGO Proposes Alternative to World Bank", *Earth Summit Times*, 2 June 1992, p. 11; Shiva, "World Bank Cannot Protect the Environment", pp. 22-23; and Third World Network, Forum of Brazilian NGOs, Greenpeace & Friends of the Earth, "UNCED Ignores Ten Critical Issues", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 11-12.

level suggests a gulf between objectives and implementation.⁶⁹ World Bank involvement in the GEF, together with its control over IDA, will give the Bank a powerful voice in funding allocations.⁷⁰

Although an important catalyst, the GEF is a small part of the total financing package at UNCED and is only likely to contribute up to 8% of the estimated \$125 billion per year.⁷¹ At present, the pilot programme has pledges from industrialised countries of \$1.3 billion.⁷² Seventy-two projects are in place, costing \$584 million.⁷³ Replenishments trebling current funding have been promised.⁷⁴ Criteria for GEF funding are listed in Box 43.

BOX 43. QUALIFYING FOR GEF FUNDING

- All countries with a per capita income of less than \$4 000 a year (this includes South Africa) are eligible for GEF funds. Money is provided on grant terms.
- Projects deemed to benefit the global environment qualify for funding under the GEF. This includes projects dealing with global warming, pollution of international waters, destruction of biodiversity, land degradation, desertification and deforestation.
- Funding to protect the ozone layer will come from the Interim Fund of the Montreal Protocol. GEF finance is available to countries that have signed the protocol but do not qualify for support under the interim fund because of high ozone-depleting emissions.
- All projects are screened for their environmental impact and those with significant impacts must undergo full-scale environmental assessment.
- GEF funding is possible if a project offers substantial global benefits but is unlikely to be viable without some concessional funding.
- GEF projects are limited to \$10 million.
- A \$5 million small grants fund supports community-based activities by non-governmental organisations and community-based organisations in developing countries. Women's groups and traditional communities are given priority. Individual grants cannot exceed \$50 000 except for regional and subregional projects that are eligible for up to \$250 000.
- Projects can be suggested by all sectors but must be endorsed by the government.
- Applications for funding should be made to the UNDP or the World Bank. Applications for small grants should be made directly to the UNDP (see Annex 5 for addresses).

⁶⁹ See for example, P. Feeney, "Wrong Signal from the Bank", *Terra Viva*, 13 June 1992, p. 23.

⁷⁰ Anyadike, "World Bank Grips Purse Strings", *Terra Viva*, 6 June 1992, p. 4; Khor, "Nine Key Tests of UNCED's Success".

⁷¹ Elliott, "Jury Undecided on GEF's First Year", p. 3; "GEF Responds to Criticisms".

⁷² Elliott, "Jury Undecided on GEF's First Year", p. 3; UNDP, UNEP & The World Bank, *Global Environment Facility: The Pilot Phase and Beyond*, p. 16.

⁷³ *Ibid.*

⁷⁴ Abbasi, "Pledges are Made: Are they for Real?", p. 4; M.E. Hurtado, "The Verdict: Setback for Sustainable Development", *Terra Viva*, 12 June 1992, p. 22.

10.3.5 Debt Relief

In 1991, the net flow of resources from developing countries to commercial banks was \$7.3 billion.⁷⁵ Debt relief would thus provide significant resources for the implementation of sustainable development projects. In recognising this, Agenda 21 urges creditors to provide debt relief for the poorest indebted countries.⁷⁶ This amount, however, is little more than 1% of total Southern debt and less than a third of that owed by Severely Indebted Countries.⁷⁷ Furthermore, no measures for debt relief have been given to other indebted nations.

10.3.6 Other Suggested Financing Mechanisms

Other funding sources listed by Agenda 21 include regional and subregional development banks,⁷⁸ relevant specialised agencies and international organisations,⁷⁹ multilateral institutions for capacity-building and technical cooperation,⁸⁰ bilateral assistance programmes,⁸¹ voluntary contributions⁸² and foreign investment.⁸³

Innovative mechanisms suggested to generate new resources include different forms of debt relief, the use of economic incentives, tradeable emission permits, fund-raising schemes and the reallocation of funds presently committed to military purposes.⁸⁴ There is, however, no firm commitment to any of these schemes.

⁷⁵ M.E. Hurtado, "Shattered Hopes on Development", *Terra Viva*, 9 June 1992, p. 22.

⁷⁶ Chapter 33, para. 16(e).

⁷⁷ Hurtado, "Shattered Hopes on Development", p. 22.

⁷⁸ Chapter 33, para. 16(a)(ii).

⁷⁹ Chapter 33, para. 16(b).

⁸⁰ Chapter 33, para. 16(c).

⁸¹ Chapter 33, para. 16(d).

⁸² Chapter 33, para. 16(f).

⁸³ Chapter 33, para. 17.

⁸⁴ Chapter 33, para. 18.

10.4 CONCLUSIONS

In its favour, the text represents a considerable expansion from initial provisions which dealt with global environmental problems only.⁸⁵ Instead of the GEF alone, the document lists several sources and mechanisms including the IDA, regional banks, UN agencies, bilateral aid programmes and private funds. In addition, the agreement adopted is the first document to set down the commitment that the North must assume to reverse the course of environmental degradation.⁸⁶

However, Agenda 21 gives little attention to innovative ways to generate financial resources.⁸⁷ Introducing market pricing for environmental resources, for example, would result in an annual transfer of funds from industrialised to developing nations of an estimated \$700 billion.⁸⁸ Strictly implementing the "polluter pays principle" and reforming current subsidy structures for energy, agriculture and forestry would similarly release massive funds for sustainable development.⁸⁹

The lack of financial commitment was one of the biggest disappointments of UNCED, particularly for poorer countries.⁹⁰ Developing countries have further denounced UNCED financing arrangements for failing to rethink the concept of aid and for ignoring measures relating to trade liberalisation.⁹¹ In the absence of both reform and financial commitments, a gloomy picture for implementing sustainable development in developing countries is presented. Although all countries have been prepared to admit to the relationship between poverty and environmental degradation, few have met the financial challenge to invest in global environmental security.

⁸⁵ See S. Federovisky, "The Financial Accord is Ready", p. 4.

⁸⁶ Ibid.

⁸⁷ D. Runnalls, "Money could still be UNCED's Fatal Flaw", *Earth Summit Times*, 9 June 1992, p. 6.

⁸⁸ UNDP estimate, in S. Kottary, "A Call for Ecological Markets to Balance Deficits", *Earth Summit Times*, 3 June 1992, p. 3.

⁸⁹ MacNeill & Runnalls, "Earth Summit's Money Pie...", p. 9; M. ul Haq, "Now is the Time for Courage, not Empty Political Grandstanding", *Earth Summit Times*, 10 June 1992, p. 1.

⁹⁰ See Federovisky, "The Financial Accord is Ready", p. 4; Pitt, "History will be the Judge", p. 16; C. Raghavan, "Earth Summit: A Costly Joke or a Real Turning Point?", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 6; and Runnalls, "Successes and Failures from Rio...", p. 7.

⁹¹ D.R. Abbasi, "Rio: 'Agreement Without Commitment'", *Earth Summit Times*, 15 June 1992, p. 3; Hurtado, "Shattered Hopes on Development", p. 22.

TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY

10.5 INTRODUCTION

Environmentally sound technologies (ESTs), as defined by Agenda 21 "protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products and handle residual wastes better than previous methods".⁹²

The activities proposed by Agenda 21 aim to:

- ensure access to scientific and technological information;⁹³
- promote access to and transfer of ESTs on favourable terms;⁹⁴
- maintain and promote environmentally sound indigenous technologies;⁹⁵
- support endogenous capacity-building;⁹⁶ and
- promote long-term technological partnerships between holders of ESTs and potential users.⁹⁷

10.6 ACTIVITIES

A number of activities are proposed by Agenda 21 to facilitate the transfer of ESTs:

⁹² Chapter 34, para. 1.

⁹³ Chapter 34, para. 14(a).

⁹⁴ Chapter 34, para. 14(b).

⁹⁵ Chapter 34, para. 14(c).

⁹⁶ Chapter 34, para. 14(d).

⁹⁷ Chapter 34, para. 14(e).

- International information networks should be developed, linking national, sub-regional, regional and international systems. Information on available technologies will be disseminated by regional clearing houses, which should focus on the information needs of users.⁹⁸
- Access to and transfer of technology should be promoted by governments, international organisations and the private sector.⁹⁹ This will involve reviewing existing policies and reducing barriers to technology transfer.¹⁰⁰ In the case of privately owned technologies, a number of measures are listed to stimulate technology transfer. These include the use of incentives; purchasing patents and licenses on commercial terms for their transfer on non-commercial terms; and providing financial resources to developing countries so that they can acquire the technology.¹⁰¹ An international code of conduct on technology transfer is presently being drafted by the UN Conference on Trade and Development (UNCTAD).¹⁰²
- Capacities to develop and manage ESTs should be strengthened at the national, regional, sub-regional and international level.¹⁰³
- A collaborative network of research centres on environmentally sound technology should be established at all levels.¹⁰⁴
- Programmes of cooperation, assistance and research should be developed and supported at all levels.¹⁰⁵

⁹⁸ Chapter 34, para. 15.

⁹⁹ Chapter 34, para. 18.

¹⁰⁰ Chapter 34, para. 18(c).

¹⁰¹ Chapter 34, para. 18(e).

¹⁰² Chapter 34, para. 18(f).

¹⁰³ Chapter 34, para. 20.

¹⁰⁴ Chapter 34, para. 21.

¹⁰⁵ Chapter 34, paras 22, 23.

- The international community should develop capacities for technology assessment including environmental impact and risk assessment. These assessments should be openly available for the benefit of all nations.¹⁰⁶
- Collaborative arrangements should be promoted between enterprises of developed and developing nations, and between suppliers and recipients of technologies. Multinational companies are recognised as important channels for such transfer.¹⁰⁷

10.6.1 Cost

Implementing these activities will cost between \$450 and \$600 million per year (1993-2000) from the international community on grant or concessional terms.¹⁰⁸

10.7 CONCLUSIONS

The degree of success of this agreement is difficult to determine. Firstly, the affordability of EST to developing countries will largely hinge on the financial support of industrialised countries. Whilst Agenda 21 considers facilitating the access of developing nations to EST a major goal, nothing in the agreed text ensures affordable terms for the technology.¹⁰⁹ A second area of concern relates to the over-protection of IPRs in the text. This attempt to blend environmental concern and the profit motive could well prove inappropriate for developing countries, considering their lack of political, social and economic infrastructure to attract international technical cooperation and commercial investment.¹¹⁰ An alternative structure for technology transfer was proposed by non-governmental organisations (NGOs) at Rio, in the form of a

¹⁰⁶ Chapter 34, para. 26.

¹⁰⁷ Chapter 34, para. 27.

¹⁰⁸ Chapter 34, para. 29.

¹⁰⁹ Anyadike, "Private Business Cashing in on Technology Transfer", p. 14; M.E. Hurtado, "Still only Good Intentions on Technology Transfer", *Terra Viva*, 11 June 1992, p. 22.

¹¹⁰ Anyadike, "Private Business Cashing in on Technology Transfer", p. 14.

technology bank¹¹¹ to give support to the South's indigenous technology and knowledge.

There is a strong emphasis in Agenda 21 on the need for developing countries to build up their own technological capacities. Appropriate technology is further recognised as being crucial to resolving environmental problems. Yet acknowledgements such as these have been made time and time again, with few tangible effects.¹¹²

The only difference now may be that there is a commonality of interests to protect the global environment.

¹¹¹ International Non-Governmental Organisations (NGOs) and Social Movements Forum, "Treaty on Technology Bank: Solidarity System for Technological Change".

¹¹² I. Chowdhury, "North-South Partnership Faltering", *Earth Summit Times*, 14 June 1992, p. 6; Hurtado, "Still only Good Intentions on Technology Transfer", p. 22.

INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

10.8 THE GENERAL ASSEMBLY AND THE ECONOMIC AND SOCIAL COUNCIL

The General Assembly will be the principal policy-making and appraisal organ on matters relating to the follow-up of UNCED.¹¹³ A special session is to be convened by 1997 to review Agenda 21.¹¹⁴ The Economic and Social Council (ECOSOC) will assist the Assembly by overseeing the coordination and integration of environment and development aspects in UN policies and programmes through the Commission on Sustainable Development.¹¹⁵ It will also organise periodic reviews of the work of this Commission.¹¹⁶

Many have argued that ECOSOC can only achieve these aims after it has been revitalised to achieve a standing comparable to that of the Security Council.¹¹⁷ Originally set up to coordinate economic and social programmes under the UN, it is widely perceived to be moribund.¹¹⁸ These criticisms apply equally to its obligations with regard to the Commission on Sustainable Development (see below).

¹¹³ Chapter 38, para. 9.

¹¹⁴ *Ibid.*

¹¹⁵ Chapter 38, para. 10.

¹¹⁶ *Ibid.*

¹¹⁷ See for example, Elliott, "Khalid: EcoSoc Needs Power to Play", p. 5; and D. Runnalls, "Sheep Wearing Sheep's Clothing", *Earth Summit Times*, 8 June 1992, p. 7.

¹¹⁸ *Ibid.* See also R. Sandbrook, "Proposed Commission Faces Uncertain Future", *Earth Summit Times*, 11 June 1992, p. 6.

10.9 COMMISSION ON SUSTAINABLE DEVELOPMENT

One of the most important outcomes of UNCED was the establishment of a Commission on Sustainable Development within the UN to follow up implementation of Agenda 21.¹¹⁹ Although details of its actual structure are still to be devised, the Commission is expected to be a high-level entity with a range of independent powers, along the lines of the UN Commission on Human Rights.¹²⁰ Like the Human Rights Commission, it will use peer pressure and the force of public opinion to shame countries into following sustainable paths.¹²¹ The Commission will report through ECOSOC to the General Assembly.¹²²

Decisions concerning the standing and membership of the Commission, as well as the location of the secretariat, will be made at the 47th UN General Assembly.¹²³ This will essentially determine the powers vested in the Commission. Representatives of states will be elected as members with "due regard to equitable geographical distribution".¹²⁴ Active involvement of bodies of the UN system, international financial institutions and other relevant intergovernmental organisations, NGOs, industry, business and the scientific community is envisaged.¹²⁵ The first meeting of the Commission will be convened "no later than 1993".¹²⁶

The Commission will have the following functions (comments are included as italics):

¹¹⁹ Chapter 38, para. 11.

¹²⁰ "Sustainable Development Commission can Play Major Role", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 35; "New UN Body Created", *Ecoforum* 16(2) (1992), p. 11.

¹²¹ M.E. Hurtado, "The Commission: 'We Need the Equivalent of the International Court of Justice'", *Terra Viva*, 8 June 1992, p. 12.

¹²² Chapter 38, para. 11.

¹²³ Chapter 38, para. 12.

¹²⁴ Chapter 38, para. 11.

¹²⁵ *Ibid.*

¹²⁶ *Ibid.*

- monitoring and reviewing progress on the implementation of Agenda 21, environmental conventions, and the integration of environment and development goals throughout the UN system.¹²⁷ This pertains particularly to provisions relating to financial resources and technology transfer;

*Progress towards the 0.7% ODA target will thus be regularly reviewed.*¹²⁸

- considering information provided by governments (eg through "periodic communications or national reports") regarding activities they undertake to implement Agenda 21, problems they face in doing so and other relevant issues;¹²⁹

*Initial demands for regular national reports on progress in implementing sustainable development were resisted.*¹³⁰ *Instead, governments are merely invited to submit reports if they wish.*

- receiving input from NGOs and other relevant sectors regarding the implementation of Agenda 21;¹³¹

*Recognition that NGOs will have an important role in the Commission's work has been positively received. Indeed, it is likely that the active involvement of NGOs and other groups in monitoring will be critical to the success of the Commission.*¹³²

- enhancing dialogue within the UN system "between NGOs and the independent sector",¹³³

¹²⁷ Chapter 38, para. 13(a)(f).

¹²⁸ See Centre for Our Common Future, "The Rio Results", p. 5.

¹²⁹ Chapter 38, para. 13(b).

¹³⁰ See F. Pearce, "How Green was Our Summit?", *New Scientist*, 27 July 1992, p. 13.

¹³¹ Chapter 38, para. 13(d).

¹³² See "Sustainable Development Commission can Play Major Role", p. 35.

¹³³ Chapter 38, para. 13(e).

- providing appropriate recommendations to the General Assembly through ECOSOC on the basis of an integrated consideration of reports related to the implementation of Agenda 21;¹³⁴ and
- providing information to groups committed to the implementation of Agenda 21.¹³⁵

10.10 COORDINATION MECHANISM, ADVISORY BODY AND SECRETARIAT STRUCTURE

The focal point of institutional arrangements within the UN system will be the Secretary-General,¹³⁶ in his/her capacity as head of the Administrative Committee on Coordination (ACC).¹³⁷ Important links between the multilateral financial institutions and other UN bodies will be established by the ACC at the highest administrative level.¹³⁸ These links should also be followed up at regional and national levels. A "highly qualified and competent" secretariat support structure will buttress the work of intergovernmental and interagency coordination mechanisms.¹³⁹

A high-level advisory board, consisting of eminent persons knowledgeable about environment and development, would additionally benefit intergovernmental bodies and the UN system.¹⁴⁰ Recommendations concerning this body will be made at the 47th session of the General Assembly.¹⁴¹

¹³⁴ Chapter 38, para 13(g).

¹³⁵ Chapter 38, para. 14.

¹³⁶ Chapter 38, para. 15.

¹³⁷ Chapter 38, para. 17.

¹³⁸ Ibid.

¹³⁹ Chapter 38, para. 19.

¹⁴⁰ Chapter 38, para. 18.

¹⁴¹ Ibid.

10.11 UNITED NATIONS ENVIRONMENT PROGRAMME

Policy guidance and coordination of environmental concerns will continue to define the role of UNEP¹⁴² which is expected to be strengthened in the follow-up to UNCED.¹⁴³ In particular, the integration of environmental aspects into development policies should be promoted throughout development agencies, the UN system, and in countries requesting assistance.¹⁴⁴ Stronger links should be forged between UNEP, UNDP and the World Bank.¹⁴⁵

UNEP's specific contribution will continue to be science. For example, it runs the Scientific Advisory Panel which appraises the environmental soundness of projects financed by the GEF.¹⁴⁶ Coordinating and promoting scientific research on environmental concerns, developing environmental law, refining impact assessments, devising ways to measure the environmental cost of economic activities and raising public awareness are a few of the tasks UNEP is requested to implement under Agenda 21.¹⁴⁷

The expansion of UNEP's role will clearly involve increased financial resources and expertise.¹⁴⁸ This will be critical to its effective functioning since lack of finances has been the scourge of UNEP's history.¹⁴⁹ It has been estimated that monies should be increased from the present \$80-90 million to \$300-500 million per annum to obtain effective results.¹⁵⁰

¹⁴² Chapter 38, para. 21.

¹⁴³ See M.E. Hurtado, "Snail's Pace for Institutions", *Terra Viva*, 13 June 1992, p. 22.

¹⁴⁴ Ibid.

¹⁴⁵ Chapter 38, para. 23.

¹⁴⁶ See Hurtado, "Snail's Pace for Institutions", p. 22.

¹⁴⁷ Chapter 38, para. 22.

¹⁴⁸ Chapter 38, para. 23.

¹⁴⁹ See H.F. French, "After the Earth Summit: The Future of Environmental Governance", *Worldwatch Paper*, no. 107 (March 1992), p. 37; B. Gosovic, *The Quest For World Environmental Cooperation* (London: Routledge, 1992), pp. 21-28; and Runnalls, "Successes and Failures from Rio...", p. 6.

¹⁵⁰ Estimate is that of UNEP's Executive Director, Dr Mostafa Tolba, in Hurtado, "Snail's Pace for Institutions", *Terra Viva*, 13 June 1992, p. 22.

10.12 UNITED NATIONS DEVELOPMENT PROGRAMME

As the largest multilateral funding source for development and technical assistance, the role of the UNDP will be crucial in the follow-up to UNCED.¹⁵¹ Its main focus will be on capacity building in developing countries: governments will be supported in turning Agenda 21 into specific sustainable development programmes.¹⁵² A further function will entail mobilising finances from donor countries, and assisting recipient countries to coordinate these funds.¹⁵³

Many of these functions are already in place. For instance, 80% of the national programmes proposed by UNDP for the next five-year funding cycle focus on sustainable development.¹⁵⁴ A commitment of \$8 million to support developing countries has recently been announced by the administrator, as have plans to launch a worldwide sustainable development network to facilitate the exchange of information on the environment.¹⁵⁵

10.13 OTHER UNITED NATIONS BODIES

Other UN bodies, such as the UN Conference on Trade and Development,¹⁵⁶ the UN Sudano-Sahelian Office (UNSO)¹⁵⁷ and related organisations¹⁵⁸ will also have important roles to play in the implementation of relevant parts of Agenda 21. UNSO, for example, will assume an advisory role with regard to drought and desertification.

¹⁵¹ Chapter 38, para. 24.

¹⁵² Chapter 38, para. 25(a).

¹⁵³ Chapter 38, para. 25(b)(e).

¹⁵⁴ T. Deen, "UNDP Budgets 2 Bn for Environment", *Terra Viva*, 8 June 1992, p. 3; Kottary, "UN Agencies Prepare for Agenda 21", p. 5.

¹⁵⁵ Kottary, "UN Agencies Prepare for Agenda 21", p. 5.

¹⁵⁶ Chapter 38, para. 26.

¹⁵⁷ Chapter 38, para. 27.

¹⁵⁸ Chapter 38, para. 28.

10.14 REGIONAL AND SUBREGIONAL COOPERATION AND IMPLEMENTATION

Regional and subregional cooperation will be an important part of the Conference outcome.¹⁵⁹ The UN regional economic commissions,¹⁶⁰ regional development banks¹⁶¹ and regional economic and technical cooperation organisations¹⁶² can play an important role by promoting capacity building and cooperation, and by integrating environmental concerns in development policies.

10.15 NATIONAL IMPLEMENTATION

States should consider the preparation of national reports and action plans for the implementation of Agenda 21.¹⁶³ To this end, national coordination structures responsible for the follow-up of Agenda 21 would be beneficial.¹⁶⁴

10.16 NON-GOVERNMENTAL ORGANISATIONS

Recognition is given to the need for the UN to enhance participation and involvement of NGOs in the follow-up to UNCED and in the work of the UN.¹⁶⁵ This will be based on the accreditation procedures used at UNCED.¹⁶⁶ In particular, NGO review and evaluation processes concerning the implementation of Agenda 21 will be taken into account by the UN system.¹⁶⁷

¹⁵⁹ Chapter 38, para. 29.

¹⁶⁰ Chapter 38, para. 30.

¹⁶¹ Chapter 38, para. 31.

¹⁶² Chapter 38, para. 33.

¹⁶³ Chapter 38, para. 38.

¹⁶⁴ Chapter 38, para. 40.

¹⁶⁵ Chapter 38, paras 42, 43.

¹⁶⁶ Chapter 38, para. 44.

¹⁶⁷ Chapter 38, para. 43(b).

10.17 CONCLUSIONS

If governments, the Secretary-General and the UN do what they are called on to do in this chapter of Agenda 21, global environmental collapse will certainly be retarded.¹⁶⁸ A comprehensive institutional package has been provided, as has a forum - in the form of the Sustainable Development Commission - to build consensus on areas for future negotiation and action.

Two factors will determine the influence which the Commission has. Firstly, as a "moral authority",¹⁶⁹ its effectiveness will be dependent on the priority each government places on it.¹⁷⁰ This in turn will depend on the pressure levered on individual governments by concerned NGOs and the public.¹⁷¹

Secondly, the Commission's influence will be largely dependent on membership and the operational decisions taken by the UN General Assembly.¹⁷² For example, a body composed of government ministers will certainly be more influential at integrating economics and environmental considerations than officials at the margins of influence. If vested with sufficient powers it could provide a fundamental step in making financial organisations such as the World Bank and the IMF accountable for the environmental impacts of their lending.¹⁷³

This accountability will be a two-way process. One of the main reservations which industrialised nations have in giving aid is the belief that it is insufficiently used.¹⁷⁴ Closer scrutiny of the aid process is likely to nurture deserving projects and facilitate

¹⁶⁸ Comment from the co-convenor of a 350-member international NGO task group, in D.R. Abbasi, "'Development' Framework is Approved", *Earth Summit Times*, 10 June 1992, p. 5.

¹⁶⁹ Quote of United States delegation head William Reilly, in Abbasi, "Rio: 'Agreement Without Commitment'", p. 3.

¹⁷⁰ See Abbasi, "'Development' Framework is Approved", p. 5; Abbasi, "Rio: 'Agreement Without Commitment'", p. 3; Runnalls, "Successes and Failures from Rio..", p. 7; P.S. Thacher, "GOs Need NGO Talent", *Earth Summit Times*, 15 June 1992, p. 13; and "Sustainable Development Commission can Play Major Role", p. 35.

¹⁷¹ See Abbasi, "Rio: 'Agreement Without Commitment'", p. 3; and Thacher, "GOs Need NGO Talent", p. 13.

¹⁷² For further detail, see P. Chasek, "NGO Strategies on the Road from Rio", *Network '92*, no. 18 (June/July 1992), p. 2; Hurtado, "The Commission: 'We Need the Equivalent of the International Court of Justice'", p. 12; Runnalls, "Sheep Wearing Sheep's Clothing", p. 7; Thacher, "GOs Need NGO Talent", p. 13.

¹⁷³ See "After UNCED Who Controls the World?", *SUNS*, no. 6 (14 June 1992), p. 5.

¹⁷⁴ See Abbasi, "Rio: 'Agreement Without Commitment'", p. 3.

a greater flow of resources. Successful programmes will seek money, rather than money seeking programmes.¹⁷⁵

A further positive aspect of the institutional arrangements is the expanded role for NGOs in the work of the UN and the formalisation of accreditation procedures secured at UNCED.¹⁷⁶ This, together with the Earth Council - an independent NGO entity which will be set up in Costa Rica in 1993 to monitor compliance with Agenda 21 - is likely to focus international attention on non-compliers.¹⁷⁷

¹⁷⁵ Ibid.

¹⁷⁶ Abbasi, "'Development' Framework is Approved", p. 5; Thacher, "GOs Need NGO Talent", p. 13.

¹⁷⁷ See J. Freeman, "Earth Council Proposed to Enforce Agenda 21", *Earth Summit Times*, 15 June 1992, p. 8.

INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

10.18 OBJECTIVES

Agenda 21 proposals for "international law on sustainable development"¹⁷⁸ focus on improving the legislative capacities of developing countries, fostering the participation of all countries in law-making, promoting the efficacy of current international agreements, and setting priorities for the future. Recognition is given to the need to enhance the treaty-making process. In doing so, the following should be taken into account:

- International law on sustainable development requires further advancement, giving particular attention to the balance between environmental and developmental concerns;¹⁷⁹
- The relationship between existing environmental agreements and relevant socio-economic agreements needs to be strengthened and clarified;¹⁸⁰
- The participation of all countries in global treaty-making is essential;¹⁸¹
- Developing countries should be provided with technical assistance to enhance their legislative capacities;¹⁸²

¹⁷⁸ Chapter 39, para. 3.

¹⁷⁹ Chapter 39, para. 3(a).

¹⁸⁰ Chapter 39, para. 1(b).

¹⁸¹ Chapter 39, para. 3(c).

¹⁸² *Ibid.*

- Negotiations for the codification of international law should be conducted on a universal basis, taking into account the work of the International Law Commission.¹⁸³
- International standards for the protection of the environment should take into account the different situations and capabilities of countries.¹⁸⁴ Trade policy measures applied should be the least restrictive necessary, giving attention to the special conditions of developing countries.¹⁸⁵

10.19 ACTIVITIES

Four priority action areas are identified. Firstly, parties should review and assess the effectiveness of past performance and existing international agreements.¹⁸⁶ Further provisions refer to the need for international legislative measures where large-scale destruction of the environment occurs through war.¹⁸⁷ In addition, negotiations for a nuclear safety convention should be concluded.¹⁸⁸

A second priority relates to mechanisms to promote the implementation of international agreements.¹⁸⁹ One suggestion for doing this involves governments preparing reporting systems on the implementation of international law.¹⁹⁰

¹⁸³ Chapter 39, para. 1(e).

¹⁸⁴ Chapter 39, para. 3(d).

¹⁸⁵ Ibid.

¹⁸⁶ Chapter 39, para. 5.

¹⁸⁷ Chapter 39, para. 6(a).

¹⁸⁸ Chapter 39, para. 6(b).

¹⁸⁹ Chapter 39, para. 7.

¹⁹⁰ Chapter 39, para. 7(a).

Thirdly, the effective participation of all countries in international law-making should be ensured.¹⁹¹ Developing countries should be given "headstart" support to build up their expertise in international law.¹⁹²

The last priority area pertains to dispute settlement, which considers the need to broaden and make more effective techniques presently available.¹⁹³

10.20 CONCLUSIONS

Of all international agreements, those pertaining to the environment suffer most from lack of compliance.¹⁹⁴ The above provisions are widely perceived to be inadequate in addressing this concern.¹⁹⁵ Much of the language has been considerably weakened and there is an absence of innovative mechanisms for dispute prevention, enforcement and settlement. Furthermore, the powers of the International Court of Justice have not been expanded and there is no provision for public review.¹⁹⁶

The shortcomings of international environmental law are thus inadequately addressed in Agenda 21. Provisions relating to more effective participation of developing countries in international law-making are however included.¹⁹⁷ Furthermore, the non-binding initiative for governments to establish national reporting systems on the implementation of international legal instruments is provided.¹⁹⁸

¹⁹¹ Chapter 39, para. 8.

¹⁹² Ibid.

¹⁹³ Chapter 39, para. 9.

¹⁹⁴ French, "After the Earth Summit...", pp. 28-31; J.R.G. Stanley, "Treaty Compliance can't be Enforced", *Earth Summit Times*, 9 June 1992, p. 7.

¹⁹⁵ See Harkavy, *The Earth Summit...*, p. 20.

¹⁹⁶ Ibid.

¹⁹⁷ Chapter 39, para. 8.

¹⁹⁸ Chapter 39, para. 7(a).

IMPLICATIONS FOR SOUTH AFRICA

The relevance of many of these proposals for South Africa is difficult to determine under the current state of political flux. Changing structures and relationships, however, present an ideal opportunity to promote sustainable development and infuse relevant aspects of Agenda 21 into an overall development strategy.

At present, apartheid has resulted in an administrative and legislative structure which is top-down in approach, fragmented, polarised and inefficient.¹⁹⁹ Existing links between environment and development authorities are often inadequate, and institution-building outside government has been stunted.²⁰⁰ Although the President's Council has recently made recommendations on a national environmental management system,²⁰¹ these do not include any fundamental changes to existing institutions - they thus fail to integrate environment and development effectively.

South Africa is better placed than most developing countries in having strong technological, scientific and management capacities. However, skills are restricted to a privileged few and there is a dearth of African scientists and technicians. To this end, Agenda 21 is matched by African National Congress policy²⁰² in emphasising the importance of endogenous capacity-building and an indigenous technological base.

One factor requiring careful consideration in a democratic South Africa is that of cooperation with international organisations, in particular the UN. On readmittance to

¹⁹⁹ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), pp. 17-18; E. Schwella & J.J. Muller, "Environmental Administration" in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 79.

²⁰⁰ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), pp. 17-18; T. Hart, "Socio-Political Factors", in *Environmental Management in South Africa*, pp. 60-63.

²⁰¹ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991). See also J. Yeld, "The President's Council and Environmental Management in South Africa", *African Wildlife* 46(1), pp. 22-25.

²⁰² African National Congress, *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 57.

the UN, South Africa is likely to be reassessed as a developing country,²⁰³ and will hence qualify for development aid. Since international cooperation and development aid may also entail World Bank and IMF obligations, South Africa's needs and priorities must be judiciously assessed.²⁰⁴ The lack of financial commitment at UNCED certainly indicates that South Africa's development strategies will need to be based on locally-generated resources rather than on foreign capital.

Having said this, it is worth noting that as South Africa has a per capita income less than \$4 000,²⁰⁵ it would qualify for GEF funding, particularly since many of GEF's focus areas are relevant to southern Africa. Global warming projects, for example, are presently underfunded,²⁰⁶ and this could be a fruitful area to investigate. For instance, the cost difference between a coal-fired power station and an alternative energy project could be funded by the GEF. Equally, the small grants programme could be a worthwhile avenue of funding for community development projects.

Although there are valuable ways in which existing national organisations and institutions could liaise with various agencies within the UN system, this too needs to be approached cautiously. International cooperation will be best effected from a strong national basis and it may be prudent to initially concentrate efforts here.²⁰⁷ To this end, the institutional capacity of development and environment organisations in the non-government sector would require strengthening and expansion and - most importantly - integration.

²⁰³ See R. Rumney, "Welcome to the Third World, SA", *Weekly Mail*, 23-29 October 1992.

²⁰⁴ See also, S. Barber, "IMF Report Lays Down Strict Ground Rules for Aid to SA", *Business Day*, 11 February 1992; P. Bond, "The Tina-Themba Debate: There Is No Alternative ... There Must Be an Alternative", *New Ground*, no. 8 (Winter 1992), pp. 21-24; R. Drew, "Huge World Bank Aid for SA on Cards", *Star*, 12 February 1992; V. Padayachee, "Apartheid, South Africa and the International Monetary Fund", *Transformation* 3 (1987), pp. 31-57; C. Ryan, "World Bank Opens Gates", *Sunday Times*, 12 April 1992; M. Swilling & P. Bond, "Can the Bank be Stopped?", *Work in Progress* (June 1992), p. 31; B. Turok, "World Bank Aid for Africa Hurts Those it would Rather Help", *Business Day*, 29 May 1992; N. Vink & J. van Rooyen, "Funding Development in South Africa", *New Ground*, no. 8 (Winter 1992), pp. 25-26.

²⁰⁵ According to the World Resources Institute, South Africa had a per capita income of \$1 870 in 1987. See World Resources Institute, *World Resources 1990-91* (Oxford: Oxford University Press, 1990). According to the Council for Scientific and Industrial Research, South Africa had a per capita income of \$2 470 in 1989. See Department of Environment Affairs, *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), p. 8.

²⁰⁶ "The Global Environment Facility: Objectives and Future Evolution", Panel of UNDP, UNEP and World Bank representatives at the Global Forum, Rio de Janeiro, 8 June 1992.

²⁰⁷ D. Cooper, "After UNCED - NGOs must get their Act Together", *New Ground*, no. 9 (Spring 1992), p. 49.

This concludes Chapter 10 which has contextualised the debates at UNCED concerning finances, technology, institutions and legalities and has outlined Agenda 21 proposals to address these issues. In addition, this chapter has assessed the relevance of these proposals for South Africa.

This concludes the analysis of Agenda 21. The following two chapters cover the two conventions signed at Rio - the Climate Convention and the Biodiversity Convention. These chapters include relevant sections of Agenda 21 (eg atmosphere, biodiversity and biotechnology) and follow a similar structure to those which describe Agenda 21. □

THE CONVENTIONS

CONVENTIONS SIGNED AT RIO

INTRODUCTION TO THE CONVENTIONS

Two conventions were signed at Rio which had been negotiated parallel to but independent of the UNCED process - the Climate Convention and the Biodiversity Convention. Both agreements are constituted as "hard law" and form a direct means of creating specific rights and duties for states. Once agreed to and ratified by a set number of states, these treaties constitute legally-binding agreements. How they are effected by countries mostly depends upon the constitutional law for each state. In South Africa, courts cannot take the conditions of international treaties directly into account since they must first be enacted in national legislation. Thus, an Act of Parliament is necessary to give local effect to treaties.¹

Given the urgency of global problems, existing legal methods to deal with these issues are slow and inadequate. For example, a new international committee needs to be created virtually every time a major treaty is up for discussion.² Further hampering the process is the UN custom of unanimous consent - impelling negotiations for both treaties and other agreements to proceed at the pace dictated by the most reluctant movers.³ Agreements are thus forged at the lowest common denominator and are consequently often ineffectual. Moreover, existing environmental treaties rarely include effective means of ensuring that nations stand by their commitments.⁴ Even where intentions are honourable, poorer nations often find it technically or financially impossible to comply with treaties and other agreements.⁵ These factors are important to bear in mind when assessing the potential effectiveness of the Rio agreements.

¹ D.J. Devine & M.G. Erasmus, "International Environmental Law", in *Environmental Management in South Africa*, eds R.F.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 56.

² See H.F. French, "After the Earth Summit: The Future of Environmental Governance", *Worldwatch Paper*, no. 107 (March 1992), p. 31.

³ This problem is discussed in G.H. Brundtland, "Pace is Dictated by the Slowest Wheel", *Earth Summit Times*, 12 June 1992, p. 6; and A. Jayasekera, "Life in a 'Rio Jungle'", *Terra Viva*, 4 June 1992, p. 11.

⁴ See French, "After the Earth Summit: The Future of Environmental Governance", p. 31; and J.R.G. Stanley, "Treaty Compliance Can't Be Enforced", *Earth Summit Times*, 9 June 1992, p. 6.

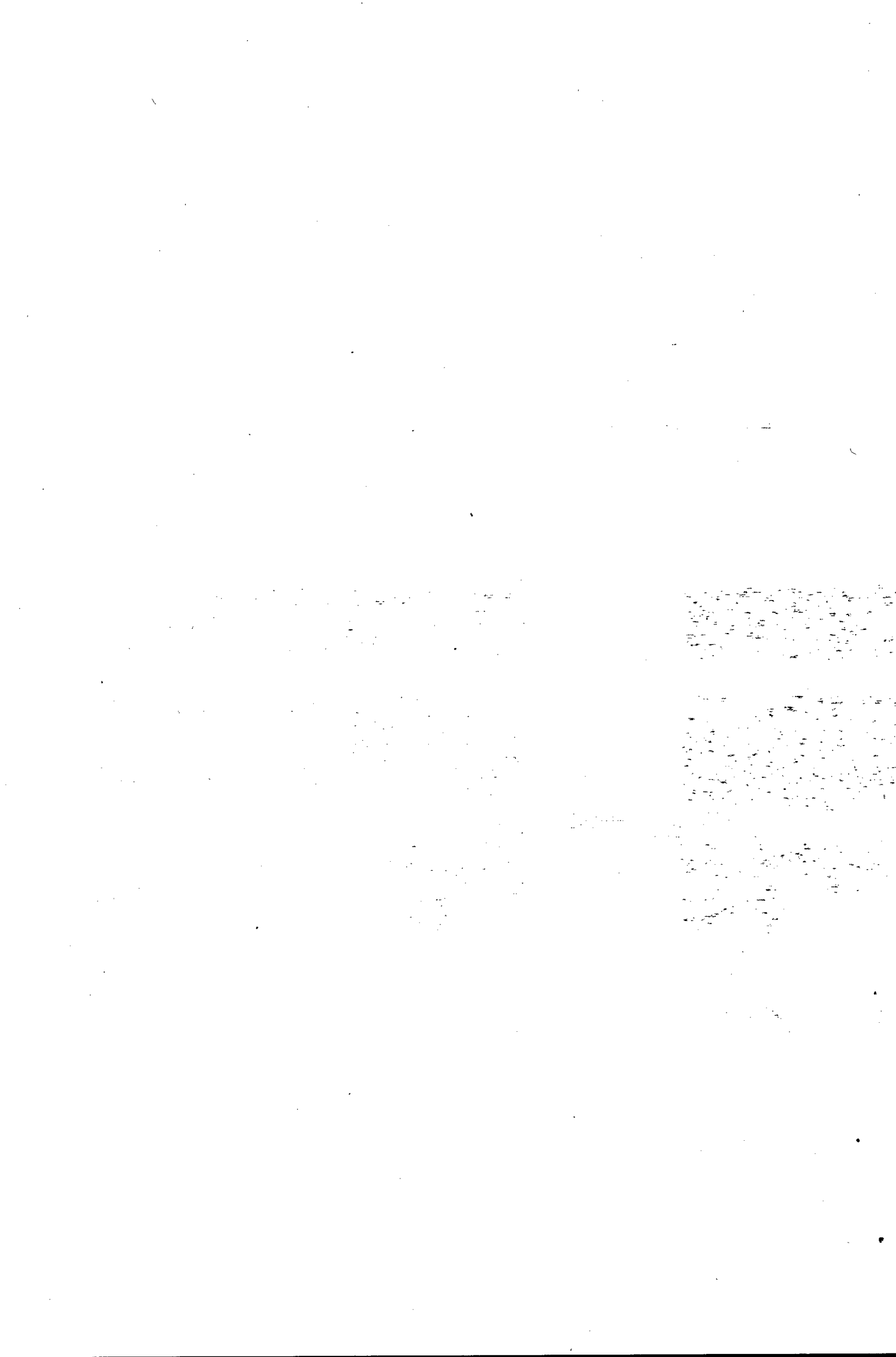
⁵ *Ibid.*

The following chapter examines the Framework Convention on Climate Change. □

Chapter 11

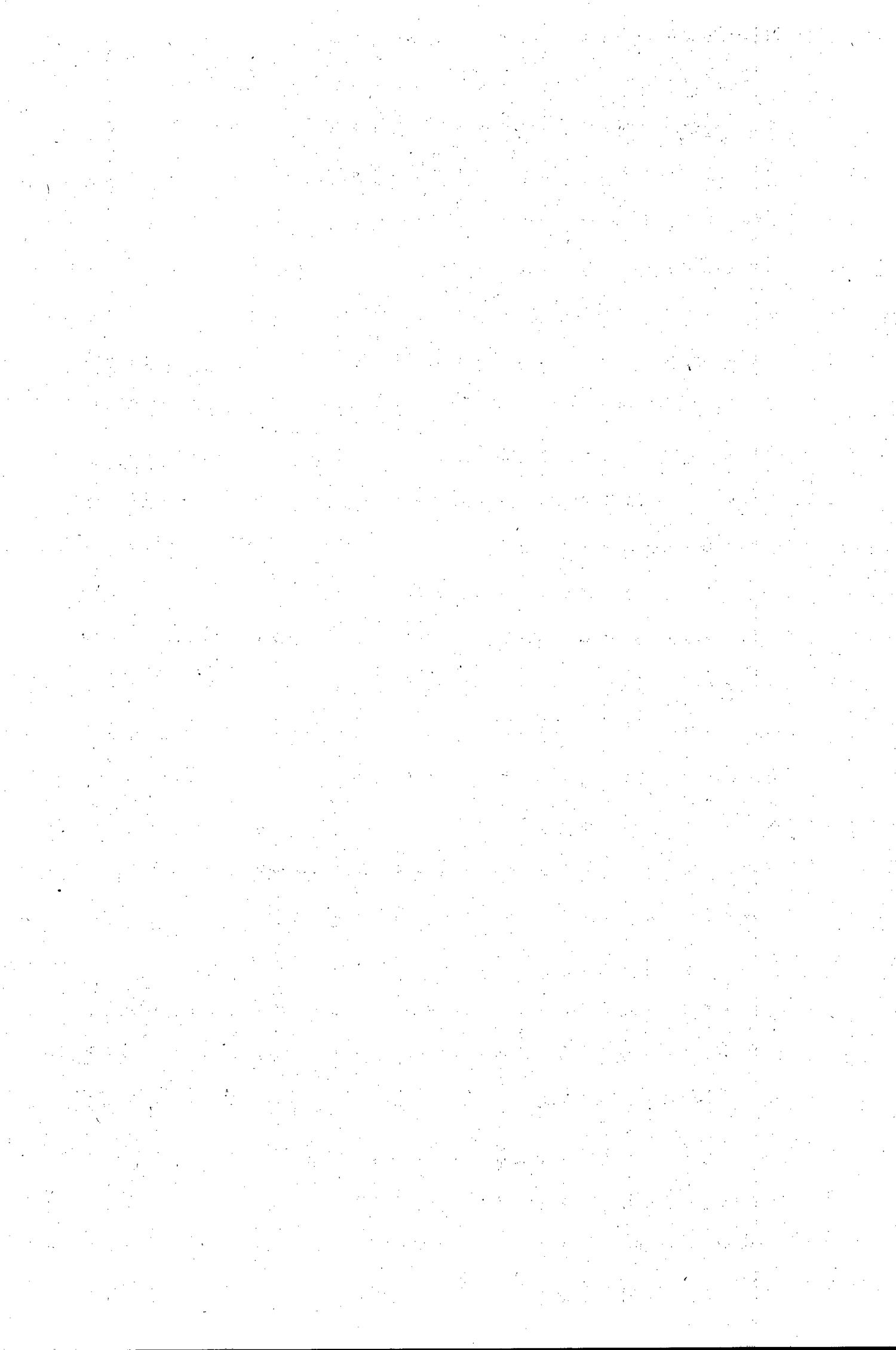
THE FRAMEWORK CONVENTION ON CLIMATE CHANGE





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Chapter 11

THE FRAMEWORK CONVENTION ON CLIMATE CHANGE

11.1 BASIS FOR ACTION

Climate change, resulting from the so-called enhanced "greenhouse effect", is increasingly recognised as the foremost environmental threat to the Earth.¹ It results from the emission into the atmosphere of gases such as carbon dioxide (CO₂), methane, chlorofluorocarbons (CFCs) and nitrous oxide which have a warming effect on the atmosphere.² The emissions of these "greenhouse gases" originate primarily from the burning of fossil fuels. The use of agricultural and industrial chemicals and the burning of forests contribute further to greenhouse gas emissions.³ Ten years ago, the concept was confined to scientific circles and was intensely disputed. Today, global warming has become the common concern of humankind: there is broad scientific consensus that the phenomenon is indeed real, and the consequences potentially catastrophic.⁴

11.1.1 *The Facts About Climate Change*

In light of these concerns, the General Assembly of the United Nations (UN) requested the UN Environment Programme (UNEP) and the UN World Meteorological Organisation (WMO) to begin work on a Climate Convention.⁵ The UNEP/WMO Intergovernmental Panel on Climate Change (IPCC) was consequently set up in 1988

¹ Enquete Commission, *Climate Change - A Threat to Global Development*, first report submitted by the 12th German Bundestag's Enquete Commission "Protecting the Earth's Atmosphere", trans. W. Fehlberg & M. Ulloa-Fehlberg (Bonn: Economica Verlag, Verlag C.F. Müller, 1992), pp. 93-135; Reconvened World Commission on Environment and Development (hereafter cited as Reconvened WCED), *Our Common Future*, London, 22-24 April 1992 (Geneva: Centre for Our Common Future, 1992), p. 15; United Nations (hereafter cited as the UN), General Assembly, Resolution 43/53, 1988.

² J. Hansen et al., "Climate Impact of Increasing Carbon Dioxide", *Science* 213 (1981), pp. 957-966; D.A. Lashof & D.R. Ahuja, "Relative Contributions of Greenhouse Gas Emissions to Global Warming", *Nature* 344 (1990), pp. 529-531.

³ W. Novaes, "Every Man's Jungle: A Burning Issue", *Terra Viva*, 13 June 1992, p. 11.

⁴ The Reconvened WCED likened the possible consequences of climate change to be "second only to those of global nuclear war", *Our Common Future*, p. 15.

⁵ UN, General Assembly, Resolution 43/53.

to examine how climate and sea level might change, what the impact of these changes might be, and how we should respond to the findings. The report of the panel⁶ was presented at the Second World Climate Conference which preceded the negotiating sessions of the Climate Convention.

The conclusions drawn from this report are stark. In an unprecedented process of international scientific collaboration and consensus,⁷ the panel stated with confidence that, under a "business as usual" scenario⁸ in which individual gas emissions rise according to present trends, global mean temperatures would increase at a rate of about 0.3°C each decade over the next century.⁹ One consequence of this would be a rise in the global mean sea level at a rate of about 6 cm per decade over the next century.¹⁰ Stabilising the climate would require an immediate 60% cut in greenhouse gas emissions.¹¹

11.1.2 The Impacts of Climate Change

Although these predicted changes may seem small, temperatures would be higher than they have been in the last 150 000 years.¹² The speed with which temperatures could rise is of equal concern. Predictions that the change will be "very big and very fast" imply that ecosystems, communities and species will be unable to adapt rapidly enough.¹³ Previous changes have taken place over millennia, allowing time for

⁶ Intergovernmental Panel on Climate Change (hereafter cited as the IPCC), *The IPCC First Assessment* (Geneva: World Meteorological Organisation (hereafter cited as WMO)/United Nations Environment Programme (hereafter cited as UNEP), 1990).

⁷ See J. Leggett, "Running Down to Rio", *New Scientist*, 2 May 1992, p. 36.

⁸ Several authorities consider this scenario to be an underestimate on account of uncertainties associated with biological feedback mechanisms. A critique of the IPCC reports can be found in Leggett, "Running Down to Rio", pp. 36-42.

⁹ IPCC, *The IPCC First Assessment*.

¹⁰ *Ibid.*

¹¹ *Ibid.* The 1992 *Supplement to the IPCC First Assessment* (Geneva: WMO/UNEP) reported that "Findings of research since 1990 do not affect our fundamental understanding of the science of the greenhouse effect and either confirm or do not justify alteration of the major conclusions of the first IPCC Scientific Assessment".

¹² IPCC, *The IPCC First Assessment*.

¹³ Numerous authorities draw this conclusion. For a review of the effects of climate change on ecosystems, communities and species, see C. Rose & P. Hurst, *Can Nature Survive Global Warming?* (Gland: World Wide Fund for Nature, 1992).

adaptations.¹⁴ Furthermore, it is likely that climatic change will be combined with other environmental stresses and this could have a range of repercussions. Altered patterns of rainfall, intensified drought, increased sea levels, flooding, new disease epidemics and a change in agricultural patterns are but a few of the prognoses.¹⁵

11.1.3 The Impacts of Climate Change in Southern Africa

In southern Africa, climate change predictions indicate that the 21st century will be hot and dry, particularly in the southern winter-rainfall and karoo regions.¹⁶ Since water supply is already a limiting factor in the region, southern Africa is particularly vulnerable to climatic fluctuations. A permanent change towards increasingly arid conditions could thus significantly alter present vegetation patterns and affect food supplies in the region.¹⁷ Indeed, the IPCC has identified changes in drought risk as representing "potentially the most serious impact of climate change on agriculture".¹⁸ Such impacts, together with increased land degradation and desertification could initiate large migrations of people.¹⁹ Furthermore, since many South African cities are situated on the coast, the consequences of sea level rise could be severe. Large areas of the False Bay coastline and the densely populated Cape Flats, for example, would be prone to flooding and waterlogging.²⁰

¹⁴ T.J. Blasing, "Carbon Cycle, Climate and Vegetation Response", in *Characterisation of Information Requirements for Studies of CO₂ Effects*, ed. M.R. White (Washington: US Department of Energy, 1985); Rose & Hurst, *Can Nature Survive Global Warming?*

¹⁵ Enquete Commission, *Climate Change - A Threat to Global Development*, pp. 93-135; Report of the World Health Organisation Commission on Health and the Environment in R. Isberto, "No 'Common Language' between North and South", *Terra Viva*, 11 June 1992, p. 7; M. Okie-Fouracre, "Climate Change Causes Cholera", *Earth Summit Times*, 6 June 1992, p. 5; F. Pearce, "Grain Yields Tumble in Greenhouse World", *New Scientist*, 18 April 1992, p. 4; Reconvened WCED, *Our Common Future*, p. 15; Rose & Hurst, *Can Nature Survive Global Warming?*

¹⁶ P.D. Tyson, "Modelling Climatic Change in Southern Africa: A Review of Available Methods", *South African Journal of Science* 86 (1990), pp. 318-330.

¹⁷ Department of Environment Affairs (hereafter cited as the DEA), *Building the Foundation for Sustainable Development in South Africa* (Pretoria, 1992), pp. 79-80; A.L. du Pisani & T.C. Partridge, "Effects of Global Warming on Crop Production in South Africa", *South African Journal of Science* 86 (1990), pp. 306-311.

¹⁸ IPCC, *The IPCC First Assessment*.

¹⁹ *Ibid.*

²⁰ P. Hughes & G.B. Brundrit, "The Vulnerability of the False Bay Coast Line to the Projected Rise in Sea Level", *Transactions of the Royal Society of South Africa* 47 (September 1991), pp. 519-534. See also D. Lewis, "Urban Politics and Energy Options", in *Restoring the Land*, eds M. Ramphela & C. McDowell (London: Panos, 1991), pp. 127-128.

11.1.4 Responding to the Facts

The facts are therefore powerful and warrant urgent global action to limit greenhouse gas emissions. However, any realistic strategy to reduce CO₂ emissions must begin with the fact that the industrialised North, representing one-fourth of the world's population, accounts for over three-quarters of all carbon emissions from fossil fuels.²¹ Consequently, the South has argued, developing countries cannot be expected to bear the costs of the North's past patterns of development.²² Yet many of the developing countries are most likely to experience the worst impacts of climate change, as the incidence of drought, famine and floods increase.²³ This is further complicated by the increased demand for energy and better living standards in less developed nations.²⁴

In short, there is a need to reduce energy and natural resource consumption in developed countries and increase the standards of living in the developing world, while keeping the sum within the ecological carrying capacity of the planet.²⁵ This will only be possible if industrialised countries are prepared to take the necessary actions and make the necessary investments; the former in the shape of firm commitments to reduce fossil fuel emissions, the latter in the form of financial aid and access to technologies for energy efficiency.²⁶ Cooperation is thus a prerequisite to stabilising the climate, particularly since developing countries, such as India and China,²⁷ have vast reserves of coal which are key to their development plans. Increased financial and technical

²¹ See F. Pearce, "Ecology and the New Colonialism", *New Scientist*, 1 February 1992, pp. 55-56; Reconvened WCED, *Our Common Future*, p. 15; South Centre, *Environment and Development: Towards a Common Strategy of the South in the UNCED Negotiations and Beyond* (n.p., 1991), p. 21; UN Conference on Trade and Development (hereafter cited as UNCTAD), *Combating Global Warming. Study on a Global System of Tradeable Carbon Emission Entitlements* (UNCTAD/RDP/DFP/1), 1992, pp. 96-97.

²² F. Pearce, "No Southern Comfort at Rio?", *New Scientist*, 16 May 1992, pp. 38-41; South Centre, *Environment and Development...*, p. 21.

²³ Enquete Commission, *Climate Change - A Threat to Global Development*, p. 120; P. Hunt, "Storm Warning over Southeast Asia", *New Scientist*, 29 February 1992, pp. 18-19.

²⁴ See South Centre, *Environment and Development...*, pp. 22-23.

²⁵ The World Wide Fund for Nature (hereafter cited as the WWF) define this objective as "Convergence". See WWF, "Action Points for UNCED: Climate Change", March 1992. See also C. Raghavan, "Climate Convention: Little Movement on N-S Issues", *Third World Resurgence*, no. 14/15 (October/November 1991), pp. 49-50.

²⁶ South Centre, *Environment and Development...*, pp. 22-23.

²⁷ See D.E. Pitt, "Gloom Looms, but Journey's Just Begun", *Earth Summit Times*, 7 June 1992, p. 3.

support is therefore critical to enable them to take less polluting paths which will still meet the needs and aspirations of their people.

11.1.5 Finding a Solution

Clearly then, equity, efficiency, sustainability and development underpin any solution to this complex situation.²⁸ One such solution, based on the global allocation of carbon emission permits, has been forwarded by the UN Conference on Trade and Development (UNCTAD).²⁹ Under such a scheme, developing countries would sell the "emission rights" to developed countries, providing incentives for industrialised countries to pollute less, and providing developing countries with much-needed capital to start emission-control programmes of their own. Compliance could be monitored by the UN, and opening up the procedure to non-governmental participation could render the system very effective.

11.1.6 Greenhouse Gas Emissions in South Africa

Inequitable patterns of energy use are certainly not confined to the poles of North and South. Almost 60% of the electricity generated in Africa is produced in South Africa,³⁰ which comprises only 4% of the land area and 7% of the population of the African continent.³¹ Yet over two-thirds of the South African population do not have access to electricity and use wood, paraffin, coal and gas to meet their energy needs.³² Despite this domestic demand for electrification, South Africa is a net exporter of energy and additionally has excess capacity in the form of power stations not being

²⁸ These factors are identified by the South Centre, *Environment and Development...*, pp. 21-23; and UNCTAD, *Combating Global Warming...*, p. 8.

²⁹ UNCTAD, *Combating Global Warming...* See also Handbook of the same name (UNCTAD/RDP/DFP/2), 1992.

³⁰ B. Huntley, R. Siegfried & C. Sunter, *South African Environments into the 21st Century* (Cape Town: Human & Rousseau Tafelberg, 1989), p. 68.

³¹ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 75.

³² P. Theron, A.A. Eberhard & C. Dingley, "The Provision of Electricity in Urban Areas of South Africa: Towards a New Policy Framework", *Urban Forum* 2(2) (1992), p. 1.

used.³³ An abundant and cheap supply of coal, providing 82% of South Africa's primary energy needs, underpins these capabilities.³⁴

The contribution of South Africa to the estimated world total of greenhouse gases is only 2%,³⁵ and is thus relatively small when compared to a "greenhouse giant" such as the United States (US) which contributes 25% to the world total.³⁶ Nevertheless, its cumulative CO₂ emissions rank fourteenth in the world.³⁷ If population and Gross National Product are taken into account, South Africa assumes the rather dubious status of being the third highest CO₂ emitter in the world.³⁸ The South African challenge thus mirrors the solution required on a global scale: a concurrent need to increase energy efficiency and reduce wasteful energy consumption amongst the "developed" sector of South Africa, increase access to energy and improve standards of living in the "developing" sector of the country, while keeping the sum within sustainable ecological limits.

11.2 APPRAISAL OF THE TREATY

Given the range and political complexity of the issues at stake, it is not surprising that it took five sessions and 18 months³⁹ for the Intergovernmental Negotiating Committee for the Framework Convention on Climate Change (INC/FCCC) to reach consensus on the final draft of the treaty.⁴⁰ The result does not reflect a policy response to global warming that matches the environmental threat spelt out by the

³³ DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 23.

³⁴ *Ibid.*

³⁵ Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 52.

³⁶ UNCTAD, *Combating Global Warming ...*, pp. 96-97.

³⁷ *Ibid.*

³⁸ *Ibid.*

³⁹ See Centre for Our Common Future, "Those Elusive Conventions", *Network '92*, no. 15 (March 1992), p. 3; and Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee (INC/FCCC)", *Brundtland Bulletin*, no. 16 (July 1992), p. 26.

⁴⁰ As requested by the UN General Assembly, Resolution 45/212.

IPCC.⁴¹ Nevertheless, over 150 countries⁴² have signed the treaty, and a rapid ratification is anticipated.⁴³ The Convention will be examined in some detail in this section: key points are summarised in the conclusion. Comments are included as italicised text.

11.2.1 Objective⁴⁴

The treaty's objective is "the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system ... within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner".⁴⁵

11.2.2 Commitments

The Convention commits countries to:

- national policies and corresponding measures to mitigate climate change by limiting emissions of greenhouse gases;⁴⁶

*The implementation of the treaty is thus mainly up to national governments' willingness to put effective strategies in place.*⁴⁷

⁴¹ See N. Dubash & S.A. Hajost [representing the Climate Action Network], "Climate Change Convention: All Compromise and No Commitment", *Network '92*, no. 17 (May 1992), p. 11.

⁴² UN, "154 Signatures on Climate Convention in Rio", Earth Summit Press Release, Rio de Janeiro, 13 June 1992.

⁴³ Maurice Strong, Secretary-General of UNCED, has called on governments to move quickly to ratify and strengthen the treaty. See also Centre for Our Common Future, "The Rio Results", *Brundtland Bulletin*, no. 16 (July 1992), p. 5; D.E. Pitt, "History will be the Judge", *Earth Summit Times*, 15 June 1992, p. 16.

⁴⁴ Article 2.

⁴⁵ Yet the final text of the Convention does not force governments to take actions that would move towards the attainment of this objective. See Friends of the Earth International (hereafter cited as FOE), "No Targets, Dates: An Empty Climate Convention", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 14.

⁴⁶ Article 4, para. 1(b).

⁴⁷ See Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee", p. 26.

- the protection of its greenhouse gas sinks;⁴⁸

The Convention adopts a "comprehensive approach" which allows nations to claim credit both for increasing "sinks" for CO₂ (such as forests) in their own and other countries, and for reducing greenhouse gas emissions.⁴⁹ This approach is encouraged by giving equal weighting to limiting emissions and to protecting/enhancing sinks. However, the scope for creative accounting is vast since there is scant scientific knowledge.⁵⁰

- develop, periodically update, publish and make available national inventories of greenhouse gas emissions by sources and removals by sinks;⁵¹

These measures do not, however, carry mandatory time-limits or strict monitoring mechanisms.

- communicate, within six months of entry into the Convention, and periodically thereafter, a detailed plan of action on the signatory's policies and measures, with the aim of returning individually or jointly to 1990 levels their emissions of CO₂ and other greenhouse gases - this commitment applies specifically to the developed countries;⁵²

This is widely regarded as the only hopeful element in the treaty,⁵³ since it provides for a mechanism under which nations would meet periodically to report on each others

⁴⁸ Article 4, para. 1(d).

⁴⁹ Article 3, para. 3.

⁵⁰ See "Don't Let us Drown, Islanders Tell Bush", *New Scientist*, 13 June 1992, p. 6. Greenpeace International's Scientific Director, Jeremy Leggett, has claimed that this approach is inequitable since it "would give equal weightings to the carbon dioxide emissions of American gas guzzlers and the methane emissions of subsistence rice farmers in the developing world" - *Ibid*.

⁵¹ Article 4, para. 1(a).

⁵² Article 4, para. 2(b).

⁵³ See for example, F. Pearce, "Draft Treaty Fails to put Limits on Emissions", *New Scientist*, 16 May 1992, p. 5; and D.E. Pitt, "Bush Going to Rio", *Earth Summit Times*, 13 May 1992, p. 23; Pitt, "Gloom Looms, but Journey's Just Begun", p. 3.

*progress in curbing emissions. It will also be a forum for policymakers to stay abreast of the latest scientific data.*⁵⁴

- at least two reviews of the adequacy of commitments of developed countries before 1998;⁵⁵

As with the previous provision, this could provide a framework for future action.

- the principle of "common but differentiated responsibilities"⁵⁶ of rich and poor countries in addressing climate change;

*This is an important principle in the Convention since it contains an admission that developed countries should take the lead in addressing climate change.*⁵⁷ *Furthermore, the specific needs and special circumstances of developing countries are recognised.*⁵⁸

- continued scientific research through the existing IPCC, specifically allowing for tougher rules as new science emerges;⁵⁹ and

*However, the treaty has a poor scientific foundation. The Convention does not protect temperature-sensitive ecosystems or demand a comprehensive monitoring of both natural and human-made CO₂ emissions.*⁶⁰

- prepare for the impacts of climate change by developing integrated plans for coastal zone management, water resources and agriculture,⁶¹ and by taking

⁵⁴ See Pitt, "Bush Going to Rio", p. 23.

⁵⁵ Article 4, para. 2(d).

⁵⁶ Article 3, para. 1.

⁵⁷ See J. Berreen & A. Meyer, "A Package Marked 'Return to Sender'", *Network '92*, no. 18 (June/July 1992), pp. 6-7; and Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee", pp. 26-27.

⁵⁸ *Ibid.*

⁵⁹ Article 9; Article 21, para. 2.

⁶⁰ FOE, "No Targets, Dates: An Empty Climate Convention", p. 13.

⁶¹ Article 4, para. 1(e).

climate change considerations into account in socio-economic-environmental policies.⁶²

11.2.3 Non-Commitments

The text of the agreement, does not, however, commit countries to:

- the stabilisation, individually or jointly, of emissions of CO₂ by any particular time;⁶³ or

Earlier drafts of the Convention had included a specific commitment by the developed countries to stabilise CO₂ emissions by the year 2000 at the 1990 level.⁶⁴ Largely to accommodate the US, this initial commitment was dropped and replaced by general language urging signatories to "limit emissions" in ways that "demonstrate that the developed nations are taking the lead" and encouraging, rather than requiring, commitments to a timetable.⁶⁵

- a progressive reduction in emissions beyond the year 2000.⁶⁶

As well as deleting all formal targets for stabilisation, all references to reductions in emissions after 2000 have been eliminated.⁶⁷ This is despite a commitment in the Convention to maintain CO₂ levels in the atmosphere at safe levels - and a report from the Intergovernmental Panel on Climate Change, that stabilising CO₂ will require cuts in emissions of 60%.⁶⁸

⁶² Article 4, para. 1(f).

⁶³ See Berreen & Meyer, "A Package Marked 'Return to Sender'", pp. 6-7; Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee", pp. 26-27; FOE, "No Targets, Dates: An Empty Climate Convention", p. 13; and A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 25.

⁶⁴ Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee", p. 26; Pearce, "Draft Treaty Fails to put Limits on Emissions", p. 5.

⁶⁵ Article 4, para. 2(a).

⁶⁶ Centre for Our Common Future, "United Nations: Intergovernmental Negotiating Committee", p. 26; Harkavy, *The Earth Summit...*, p. 25; Pearce, "Draft Treaty Fails to put Limits on Emissions", p. 5.

⁶⁷ See "Don't Let us Drown, Islanders Tell Bush", p. 6.

⁶⁸ IPCC, *The IPCC First Assessment*.

11.2.4 Education, Training and Public Awareness

Countries should promote and facilitate the development and implementation of educational and public awareness programmes on climate change and its effects; encourage public participation in developing adequate responses to climate change; and ensure public access to information on climate change and its effects.⁶⁹

11.2.5 Ratification

The signing period for the treaty will last one year.⁷⁰ The Convention will then move to ratification by the participating countries' legislative bodies.⁷¹ The treaty will enter into force three months after 50 countries have ratified it.⁷² Since the treaty is vague, it is likely that ratification will be relatively quick; many states have already declared their intention to ratify speedily.⁷³

11.2.6 Implementation

The implementation of the treaty will be overseen by a Conference of the Parties,⁷⁴ a body of representatives of all the countries that ratify the treaty. The group will convene "no later than one year after the entry into force of the Convention"⁷⁵ to negotiate the financial mechanism, amounts of money involved in the implementation of the Convention, and the location of the Convention secretariat.

⁶⁹ Article 6.

⁷⁰ Article 20.

⁷¹ Article 22.

⁷² Article 23, para. 1.

⁷³ Canada for example, promised to ratify both the Climate and the Biodiversity Conventions by the end of 1992. See F.M. Strong, "Canada Supporting Biodiversity", *Earth Summit Times*, 2 June 1992, p. 1; and Centre for Our Common Future, "The Rio Results", p. 5.

⁷⁴ Article 7.

⁷⁵ Article 7, para. 4.

11.2.7 *Subsidiary Body for Scientific and Technological Advice*

The Convention establishes a body to provide the Conference of the Parties with scientific and technological advice on matters relating to the Convention.⁷⁶ It will provide assessments on the state of scientific knowledge relating to climate change and its effects, and on the effects of measures taken in the implementation of the Convention. Efficient technologies will be identified and advice given on means to promote their transfer.

11.2.8 *Financial Mechanisms*

The Convention provides for a financial mechanism to contribute funds "on a grant or concessional basis" but makes most of the contributions to such a fund voluntary.⁷⁷ This, together with the absence of specific targets and timetables for the reduction of CO₂ emissions, is a key weakness of the Convention.⁷⁸ However, the treaty does provide that developing country's compliance will be dependent on the effective implementation of provisions on financial resources.⁷⁹

The financial mechanism of the Convention has been left to the first Conference of the Parties.⁸⁰ As an interim arrangement, the Global Environmental Facility (GEF) is entrusted with the financial mechanism.⁸¹ A fuller discussion of the GEF and alternative financial mechanisms can be found in Chapter 10 of this dissertation.

⁷⁶ Article 5.

⁷⁷ Article 11.

⁷⁸ See Berreen & Meyer, "A Package Marked 'Return to Sender'", pp. 6-7; FOE, "No Targets, Dates: An Empty Climate Convention", p. 13; and "Climate Treaty Creeping Nearer", *Terra Viva*, 3 June 1992, p. 1.

⁷⁹ Article 4, para. 7.

⁸⁰ Article 11, para. 4.

⁸¹ Article 21, para. 3.

11.2.9 Technology Transfer

The only obligations contained in the Convention for technology transfer concern those necessary to fulfil reporting requirements.⁸² Chapter 10 of this dissertation contains a more detailed discussion of technology transfer, as it relates to Agenda 21.

11.3 FOLLOW-UP MECHANISMS

In preparing for the coming into force of the Convention, a number of actions could be taken by governments to speed up the processes to reduce the rate of climate change. Non-governmental organisations (NGOs) and prominent environmentalists have called on governments to:⁸³

- ratify the Convention by June 1993;
- conduct *ad interim* negotiations by December 1992 on a binding protocol to the Convention, with the aim of stabilising developed country's CO₂ emissions at 1990 levels by the year 2000, and to set targets and timetables for reductions of at least 20% thereafter;
- prepare national plans and strategies for implementing the Convention;
- prepare national emissions inventories;
- implement a grant mechanism to help developing countries; and
- prepare implementation strategies.

Therefore, although the Convention is weak and non-binding, it does offer considerable scope for national action and further fine-tuning.⁸⁴ For example, the Vienna Treaty for the protection of ozone was enormously strengthened by the addition

⁸² Article 4, paras 5, 8.

⁸³ Comprehensive follow-up actions are suggested in Dubash & Hajost, "Climate Change Convention: All Compromise and No Commitment", p. 11; J. MacNeill [past Secretary-General of the Brundtland Commission], "Honesty, Courage Needed to Save the Summit", *Earth Summit Times*, 3 June 1992, p. 12; WWF, "Climate Change Convention", May 1992; WWF, "WWF Urges Countries to Convert UNCED Decisions into Action", Press Release, Rio de Janeiro, 14 June 1992.

⁸⁴ See Centre for Our Common Future, "The Rio Results", p. 5; Dubash & Hajost, "Climate Change Convention: All Compromise and No Commitment", p. 11; and D. Runnalls, "Successes and Failures from Rio: Optimism must Guide us", *Earth Summit Times*, 15 June 1992, p. 7.

of protocols further reducing the use of CFCs.⁸⁵ The high degree of condemnation of the Climate Convention by the press, NGOs and government delegations is likely to speed a strengthening process along.⁸⁶

It is also encouraging that several industrialised countries⁸⁷ have publicly confirmed their earlier commitments to CO₂ reduction at 1990 levels by the end of the century.⁸⁸ Pledges such as these are backed by proposals, such as those forwarded by the European Community (EC)⁸⁹ to levy a tax on fossil fuels and all energy-intensive industries (except renewables).⁹⁰ This is hoped to change consumer's behaviour, encourage production of cleaner fuels, and generate funds to finance environmentally sustainable projects in developing countries.⁹¹

11.4 PROTECTION OF THE ATMOSPHERE IN AGENDA 21

Agenda 21 includes a chapter on protecting the atmosphere which has as its aim, the development of policies and programmes to promote increased understanding and effective action to combat climate change, stratospheric ozone depletion, and transboundary atmospheric pollution.⁹² The chapter was one of the most contentious

⁸⁵ See Pitt, "Gloom Looms but Journey's Just Begun", p. 3; and Raghavan, "Climate Convention: Little Movement on N-S Issues", p. 49.

⁸⁶ See Runnalls, "Successes and Failures from Rio: Optimism must Guide us", 15 June 1992, p. 7. It has, however, been pointed out that global warming is a far more complex phenomenon, and the signs of a dangerous warming trend will thus not be as easy to detect. See Pitt, "Bush Going to Rio", p. 23.

⁸⁷ See Centre for Our Common Future, "The Rio Results", p. 5; D. Kennedy, "Climate Change Convention Begins to Warm Up", *Earth Summit Times*, 1 June 1992, p. 16; Pearce, "Draft Treaty Fails to put Limits on Emissions", p. 5; D.E. Pitt, "Germans Back Warming Treaty", *Earth Summit Times*, 9 June 1992, p. 1; and "Italy in Favour of Energy Tax in Rich Countries", *Terra Viva*, 5 June 1992, p. 9.

⁸⁸ Whether or not these commitments are sincere is, however, disputable. For example, several reports indicate that Britain backed attempts by the United States to water down the Convention. See C. Ripa di Meana [European Community Environment Commissioner], "Why I won't go to Rio", *Terra Viva*, 9 June 1992, p. 2; and J. Vidal, "Britain 'Weakens' Climate Treaty", *Guardian*, 12 May 1992.

⁸⁹ See J. Elliott, "EC Tax on Fuel Consumption Weighed", *Earth Summit Times*, 9 June 1992, p. 5; Pearce, "Draft Treaty Fails to put Limits on Emissions", p. 5; Ripa di Meana, "Why I won't go to Rio", p. 2; C. Robinson & L.H. Ramirez, "Venezuela Backs EC Energy Tax Proposal", *Terra Viva*, 8 June 1992, p. 3; and "Italy in Favour of Energy Tax in Rich Countries", p. 9.

⁹⁰ However, major European Community energy-intensive industries may be exempt from the tax, and few targets exist for energy efficiency outside industry. See Pearce, "Draft Treaty Fails to put Limits on Emissions", p. 5.

⁹¹ "Italy in Favour of Energy Tax in Rich Countries", p. 9.

⁹² Agenda 21, chapter 9.

at the UN Conference on Environment and Development, mainly due to the objections of oil-producing countries to the emphasis on energy efficiency and renewable energy sources.⁹³ All references to fossil fuels were successfully deleted by these countries.⁹⁴

The issues discussed in this chapter are mostly incorporated in other international agreements such as the Climate Convention and the Montreal Protocol. Many of the energy-related measures, however, extend beyond those included in the Climate Convention. These are described in Box 44. In addition to these measures, states are urged to:

- ratify or accept the Montreal Protocol and its 1990 amendments;⁹⁵
- develop and apply pollution control and measurement technologies;⁹⁶
- establish regional agreements for transboundary air pollution control;⁹⁷
- strengthen early warning systems and response mechanisms for transboundary pollution resulting from industrial accidents;⁹⁸ and
- promote research to improve the understanding of processes affecting and being affected by the atmosphere.⁹⁹

⁹³ See M. Okie-Fouracre, "Renewable Energy Options Threatened", *Earth Summit Times*, 8 June 1992, p. 5; and "A Summary of the Proceedings of the UN Conference on Environment and Development 3-14 June 1992", *Earth Summit Bulletin* 2(13) (16 June 1992), pp. 2-3.

⁹⁴ See D.E. Pitt, "Atmosphere and Finance Wind up Negotiations", *Earth Summit Times*, 14 June 1992, p. 16; and "A Summary of the Proceedings of the UN Conference on Environment and Development...", pp. 2-3.

⁹⁵ Chapter 9, para. 24(a).

⁹⁶ Chapter 9, para. 27(a).

⁹⁷ Chapter 9, para. 28(a).

⁹⁸ Chapter 9, para. 28(b).

⁹⁹ Chapter 9, para. 8(a).

BOX 44. PROTECTION OF THE ATMOSPHERE¹⁰⁰

Energy Development, Efficiency and Consumption

Governments, with the cooperation of relevant organisations and the private sector, should:

- cooperate in identifying and developing economically viable and environmentally sound energy sources, methodologies and technologies;
- promote the development of capacities to develop, produce, and use more efficient and less polluting forms of energy;
- review current energy supply mixes to determine how renewable energy systems could be increased;
- coordinate energy plans regionally and subregionally, studying the feasibility of distribution of environmentally sound energy;
- promote awareness campaigns and label products to inform decision-makers and consumers about "opportunities for energy efficiency"; and
- promote energy efficiency and emission.

Transportation

Governments, with the cooperation of relevant organisations and the private sector, should:

- develop and promote cost-effective, more efficient, less polluting and safer transport systems and technologies; and
- integrate transport and planning strategies, with a view to minimising the environmental impacts of transport.

Industrial Development

Governments, with the cooperation of relevant organisations and the private sector, should:

- promote policies to minimise industrial pollution and adverse impacts on the atmosphere;
- encourage and support industry to strengthen its capacity to develop less polluting technologies, processes and products, and use resources more efficiently;
- cooperate in the development and transfer of such technologies; and
- develop and apply environmental impact assessments to foster sustainable industrial development.

Terrestrial and Marine Resource Development and Land Use

Governments, with the cooperation of relevant organisations and the private sector, should:

- promote policies and programmes which encourage environmentally sound land-use practices and discourage those which are inappropriate and polluting; and
- promote the conservation and enhancement of sinks and reservoirs of greenhouse gases.

Cost

- The annual cost of implementing these activities is estimated at approximately \$20 billion from the international community on grant or concessional terms.

¹⁰⁰ Agenda 21, chapter 9.

11.5 IMPLICATIONS FOR SOUTH AFRICA

Since the Climate Change Convention as it stands now does not contain any binding commitments to reducing CO₂ emissions, there is little reason for South Africa not to ratify it. Indeed, South Africa's signing of the Montreal Protocol¹⁰¹ to reduce CFCs, which are important greenhouse gases, indicates that further Conventions concerning greenhouse gas emissions are likely to be recognised. It is perhaps noteworthy that every one of South Africa's neighbouring countries have already signed the Climate Convention.¹⁰²

It is unclear as to what South Africa's status would be as a signatory to the Convention. If assessed as a developing nation, it would have to make its initial communication within three years of ratifying the treaty.¹⁰³ This would include a national inventory of greenhouse gas emissions by sources and removals by sinks, and a general description of steps taken to implement the Convention. As a developing country, it would qualify for financial and technical support in compiling and communicating this information.¹⁰⁴ If assessed as an industrialised country, South Africa would have to make these same communications within six months of ratifying the Convention. As an industrialised country, it would be required to prepare a detailed plan of action of policies and measures, aimed at reducing CO₂ emissions to 1990 levels by the end of the century.¹⁰⁵

In South Africa, firm commitments to targets aimed at reducing CO₂ emissions are likely to be assessed against an increasing demand for energy, and a heavy reliance on the use and export of coal for economic development.¹⁰⁶ Although a tax system

¹⁰¹ See DEA, *Building the Foundation for Sustainable Development in South Africa*, p. 127.

¹⁰² See UN, "154 Signatures on Climate Convention in Rio".

¹⁰³ Article 12, para. 5.

¹⁰⁴ Article 12, para. 7.

¹⁰⁵ Article 12, para.5.

¹⁰⁶ President's Council, *Report of the Three Committees ...*, p. 53.

such as that proposed above by the EC could work well in an affluent society, it would be difficult to implement in South Africa without disadvantaging the poor.¹⁰⁷

Yet a number of steering instruments are available to decrease dependence on fossil fuels and minimise their detrimental effects. Starting points of a climate policy could examine the abundant, cheap energy supplies provided to South Africa's mines, industry, commerce, transport, commercial agriculture and wealthier residential sectors.¹⁰⁸ More energy is used per unit of economic output than many other countries,¹⁰⁹ and energy policy has favoured intensive use rather than encouraging the conservation and efficient use of energy.¹¹⁰ Furthermore, the full environmental and social costs of providing this energy (eg effects of pollution, acid rain) have not been reflected in its pricing.

The substitution of polluting, non-renewable energy sources by those which are more sustainable is another area which warrants more attention in South Africa. To-date, a fraction of the government's budget has been allocated to renewable energy sources.¹¹¹ Yet in rural areas remote from the grid, renewable energy technologies such as photovoltaics and solar and wind energy, are receiving increasing acclaim as feasible energy alternatives.¹¹²

South African efforts at reducing CO₂ emissions are thus likely to involve a mix of strategies,¹¹³ combining increased energy efficiency technologies with a decreasing dependency upon coal. A much-lauded long-term strategy involves the generation of

¹⁰⁷ Implementing pollution taxes in South Africa is discussed in an article by J. Hanks & J. Hobbs, "Environment, Economics and Enterprise: A Role for the Polluter Pays Principle?", *Resource* (September/October 1991), pp. 6-8.

¹⁰⁸ See K. de Selincourt, "South Africa takes the Apartheid out of Power", *New Scientist*, 7 September 1991, pp. 25-26.

¹⁰⁹ A.A. Eberhard & H. Trollip, "Background on the South African Energy System", Energy for Development Research Centre, University of Cape Town, 1992, p. 8.

¹¹⁰ *Ibid.*; M. Gandar, "The Imbalance of Power", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), p. 108.

¹¹¹ The Environmental Monitoring Group report that only 0.1% of the amount spent on research and development of nuclear energy is directed towards renewable energy sources. See Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), p. 58.

¹¹² See DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 26-27.

¹¹³ See also "Drought Boosts Vast Electricity Grid Plan", *The Argus*, 24 August 1992, p. 11.

hydro-electric power from neighbouring countries.¹¹⁴ An encouraging sign is that the President's Council Report on a National Environmental Management System,¹¹⁵ as well as African National Congress,¹¹⁶ Pan Africanist Congress,¹¹⁷ and Inkatha Freedom Party¹¹⁸ policy, all advocate a re-orientation of energy strategy towards clean and renewable energy sources and increased efficiency.

11.6 CONCLUSIONS

In conclusion, the Climate Convention as it stands now is widely regarded by diplomats and non-government groups alike, as inadequate and toothless.¹¹⁹ This pertains particularly to the removal of binding commitments on greenhouse gas emissions. Indeed, some organisations are proclaiming that a weak Convention is worse than no Convention at all, since it conveys the false impression that something is being done to address the problem.¹²⁰

Given the real threats of climate change, the Convention reflects a glaring gap between agreement and commitment.¹²¹ Despite these shortcomings, however, the pact is the first international legal instrument to recognise that global warming is of

¹¹⁴ See DEA, *Building the Foundation for Sustainable Development in South Africa*, pp. 25-26; President's Council, *Report of the Three Committees ...*, p. 54.

¹¹⁵ President's Council, *Report of the Three Committees ...*, pp. 257-259.

¹¹⁶ African National Congress, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy" (n.p., n.d.).

¹¹⁷ B. Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", *History in the Making* 3(1) (1991), p. 48; Pan Africanist Congress of Azania (South Africa), "The Energy Policy" (E/P/1992) (1992), pp. 1-6.

¹¹⁸ Inkatha Freedom Party, "Environmental Policy of the Inkatha Freedom Party", *History in the Making* 3(1) (1991), p. 50.

¹¹⁹ Dubash & Hajost, "Climate Change Convention: All Compromise and No Commitment", p. 11; MacNeill, "Honesty, Courage Needed to Save the Summit", p. 12; F. Pearce, "How Green was our Summit?", *New Scientist*, 27 July 1992, p. 13; Pitt, "Gloom Looms but Journey's just Begun", p. 3 (interestingly, this article records US President Bill Clinton, then presidential nominee, denigrating the treaty as worthless); Third World Network, The Forum of Brazilian NGOs, Greenpeace, Friends of the Earth International, "UNCED ignores ten critical issues", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 11; WWF, "WWF Criticises Climate Treaty Compromise", Press Release, 7 May 1992.

¹²⁰ Dubash & Hajost, "Climate Change Convention: All Compromise and No Commitment", p. 11; "Statement of the Environment Protection Society, Malaysia", *SEA News*, no. 3 (July/September 1992), p. 3.

¹²¹ Pearce, "How Green was our Summit?", p. 13.

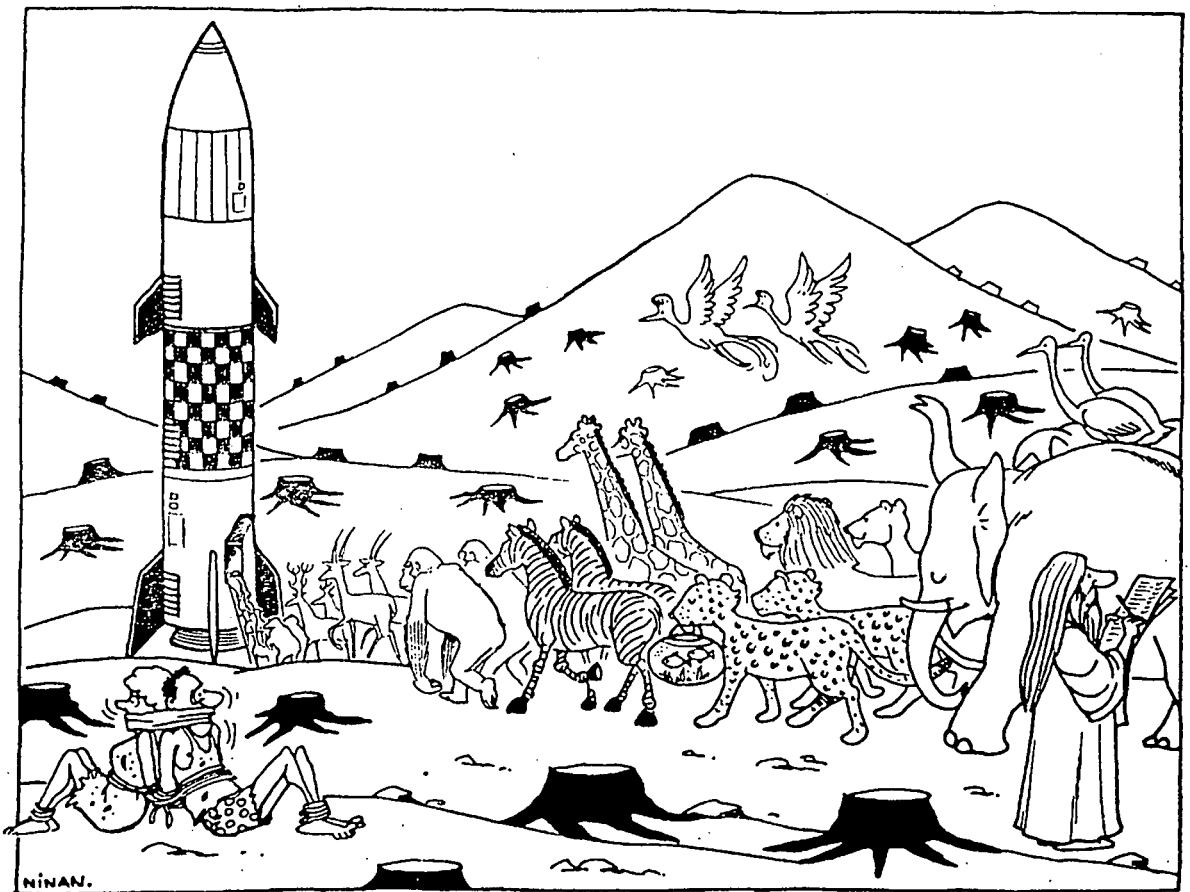
planetary concern.¹²² In doing so, the notion that nations must consider the global environmental consequences of internal economic decisions is incorporated into international law. Moreover, the Convention does establish follow-up provisions which will act as an important channel through which NGOs can lobby governments to strengthen commitments and fulfil the objective of the Convention. Since solutions to climate change are rooted in local development strategies, the implementation of the treaty is mainly up to national governments' willingness to put effective strategies in place. This, essentially, will determine the success of the Convention.

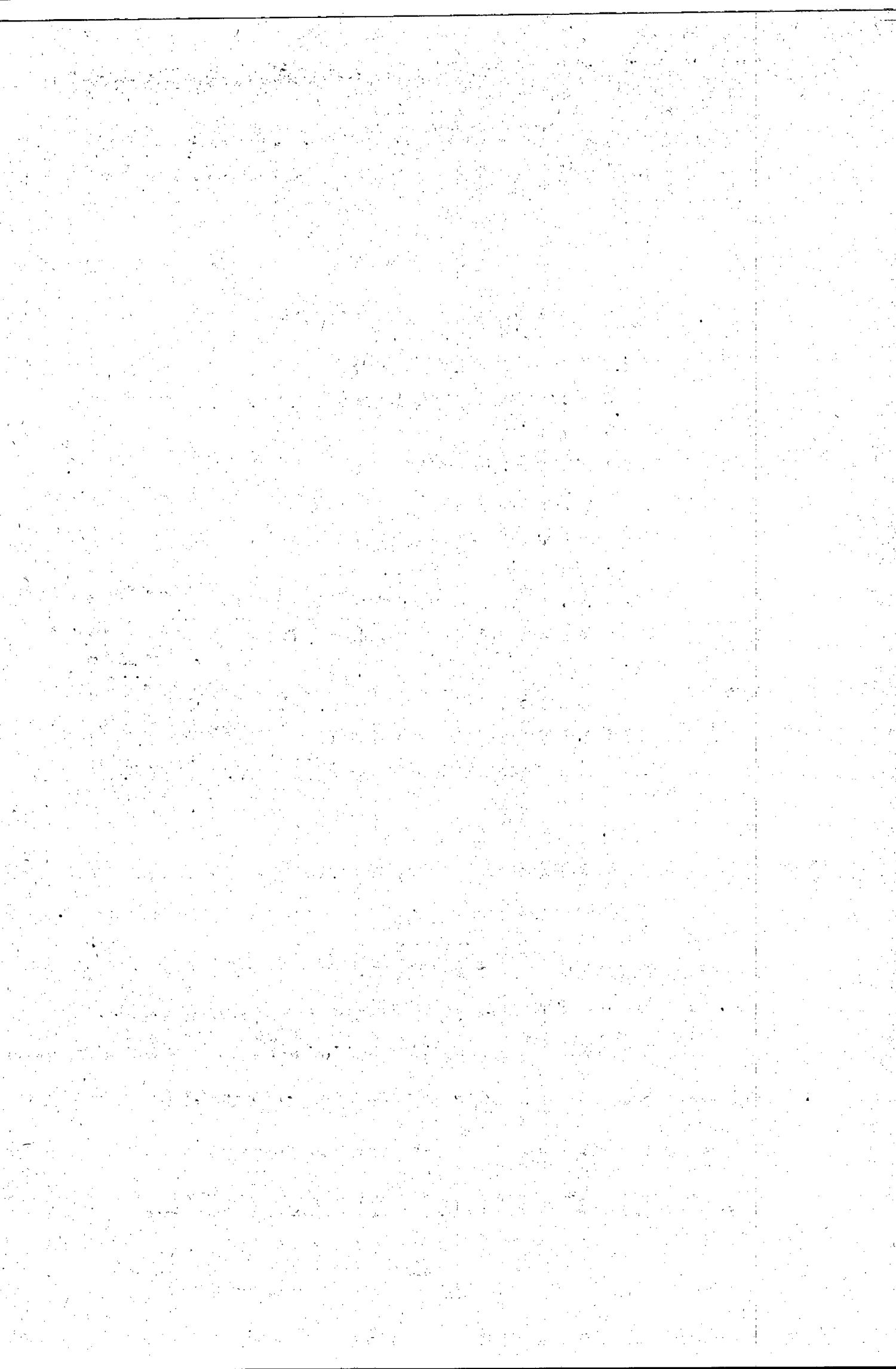
This concludes Chapter 11 which has examined the evidence for climate change, detailed the negotiations for a Climate Convention, and assessed the resulting treaty. This chapter has additionally considered whether or not South Africa should sign the Convention. Chapter 12 examines the Convention on Biological Diversity. □

¹²² Pitt, "Gloom Looms, but Journey's just Begun", p. 3; J. Porritt, "Two Worlds, One Planet", *BBC Wildlife Magazine* 10(8) (August 1992), p. 6.

Chapter 12

THE CONVENTION ON BIOLOGICAL DIVERSITY





Chapter 12

THE CONVENTION ON BIOLOGICAL DIVERSITY

12.1 BASIS FOR ACTION

Biological diversity is the term used to describe the variety of life forms found on earth: plants, animals, micro-organisms, the genes they contain and the ecosystems they form. While some 1.4 million species have been formally identified,¹ the total number of species in the world is difficult to assess. Estimates vary from 5 to 80 million, taking account of all insects, microorganisms and marine life forms yet to be identified.²

Over the past 600 million years, species have died out at a rate of less than ten per year.³ Today, the rate is thousands of times higher. The United Nations Environment Programme (UNEP) estimates that rates of extinction accelerated from one species per day in 1970, to one species every twelve minutes in 1992.⁴ These figures imply that one quarter of the earth's total biota may face extinction within 20-30 years.⁵ Almost all of these extinctions result from human activities. Habitat destruction, over-exploitation, foreign plant and animal invasions, and pollution are but a few of the

¹ United Nations (hereafter cited as the UN), "Protecting the Diversity of Species on the Planet", *Earth Summit in Focus*, no. 7 (1992); UN Educational, Scientific and Cultural Organisation (hereafter cited as UNESCO), "Of Cockroaches and Roses: The Role of Biodiversity", Information pamphlet produced for the UN Conference on Environment and Development (hereafter cited as UNCED), (1992).

² UN, "Protecting the Diversity of Species on the Planet"; UNESCO, "Of Cockroaches and Roses: The Role of Biodiversity".

³ UN, "Protecting the Diversity of Species on the Planet".

⁴ UN, "Protecting the Diversity of Species on the Planet"; UN Environment Programme (hereafter cited as UNEP), "Conservation of Biological Diversity", in *Only One Earth* (n.p., 1991).

⁵ UNEP, "Conservation of Biological Diversity", in *Only One Earth* (n.p., 1991); The World Conservation Union, the United Nations Environment Programme & World Wide Fund For Nature (hereafter cited as the IUCN, UNEP, WWF respectively), *Caring for the Earth* (Gland, 1991), p. 28.

effects causing species destruction.⁶ Added to this are the possible impacts of global warming on biodiversity.⁷

12.1.1 Biodiversity in Southern Africa

As in the rest of the world, species extinctions in southern Africa have occurred at an increasingly rapid rate.⁸ The present network of protected areas includes a very high percentage of southern Africa's biotic diversity⁹ which is fortunate since species richness in the region is amongst one of the highest in the world.¹⁰ However, this proportion (6%)¹¹ still falls short of international objectives (10%),¹² a target few countries have achieved.¹³ Moreover, it does not result from a holistic biodiversity strategy for the region. On the contrary, political boundaries have resulted in a myriad of largely uncoordinated bodies responsible for protecting biodiversity in southern Africa.¹⁴ As a result, work is often duplicated and gaps in biodiversity conservation are not effectively addressed.¹⁵

⁶ UN, "Protecting the Diversity of Species on the Planet"; World Commission on Environment and Development (hereafter cited as the WCED), *Our Common Future* (Oxford: Oxford University Press, 1987), pp. 152-154.

⁷ C. Rose & P. Hurst, *Can Nature Survive Global Warming?* (Gland: WWF, 1992); UN, "Protecting the Diversity of Species on the Planet".

⁸ J. Ledger, "Biodiversity: The Basis of Life", in *Going Green*, eds J. Cock & E. Koch (Cape Town: Oxford University Press, 1991), p. 236.

⁹ W.R. Siegfried, "Preservation of Species in Southern African Nature Reserves", in *Biotic Diversity in Southern Africa*, ed. B.J. Huntley (Cape Town: Oxford University Press, 1989), p. 199.

¹⁰ Ledger, "Biodiversity: The Basis of Life", p. 234.

¹¹ B. Huntley, R. Siegfried & C. Sunter, *South African Environments into the 21st Century* (Cape Town: Human & Rousseau Tafelberg, 1989), pp. 43-45; Republic of South Africa President's Council, *Report of the Three Committees of the President's Council on a National Environmental Management System* (Cape Town, 1991), p. 75; Siegfried, "Preservation of Species in Southern African Nature Reserves", p. 189.

¹² See President's Council, *Report of the Three Committees...*, p. 75.

¹³ See for example, UN, *Nations of the Earth Report*, 2 vols (Geneva, 1992) for summaries of National Reports submitted to UNCED.

¹⁴ Ledger, "Biodiversity: The Basis of Life", p. 239.

¹⁵ G.R. Preston & W.R. Siegfried, "The Protection of Biological Diversity in South Africa: Profiles and Perceptions of Professional Practitioners in Nature-Conservation Agencies and Natural History Museums", *Conservation Biology*, forthcoming.

Because South African conservation is rooted in the colonial era, it has generally been exclusive, reflecting only the interests of the privileged, white minority.¹⁶ Conservation-led initiatives have excluded social factors and have often resulted in land and resource dispossession among rural communities.¹⁷ These two factors have largely accounted for the hostile, or at best indifferent attitudes towards conservation amongst the majority of the population. Conservation in a democratic South Africa will thus only be effective if it plays a functional role in rural development.¹⁸

12.1.2 The Importance of Biodiversity

There are two fundamental reasons for giving importance to biodiversity. First and foremost, it is essential for ecological processes.¹⁹ Increased diversity implies increased resilience, allowing organisms and ecosystems to better withstand stress and to adapt to changing environments. Since humankind is an integral part of this process, the erosion of biodiversity has direct implications for us. Secondly, sustainable development will simply not work if we do not adopt a new ethic - one that recognises the intrinsic value of all species, ourselves included.²⁰

Although often difficult to measure in monetary terms, biodiversity is also a source of food, fuel, medicines and a range of industrial products.²¹ In addition to global benefits, plant resources supply many of the basic needs of people in southern Africa in the form of food supplements, fuelwood, fencing, building materials and medicines.²² Wildlife exploitation is increasingly being regarded as an important

¹⁶ Environmental Monitoring Group, *Towards Sustainable Development in South Africa* (Cape Town, 1992), p. 31; F. Khan, "Mass Environmental Politics: Responding to the Environmental Crisis", *Southern African Discourse* 2(1) (August 1990), p. 25; E. Koch, D. Cooper & H. Coetzee, *Water, Waste and Wildlife* (London: Penguin, 1990), pp. 15-25.

¹⁷ Centre for Community Organisation Research, "Regaining Control", in *Restoring the Land*, eds M. Ramphela & C. McDowell (London: Panos, 1991), pp. 65-78; J. Cock, "The Politics of Ecology", in *Restoring the Land*, p. 13; Koch et al., *Water, Waste and Wildlife*, pp. 15-25; F. Wilson & M. Ramphela, *Uprooting Poverty* (Cape Town: David Philip, 1989), pp. 215-225.

¹⁸ Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 32; T. Hart, "Socio-Political Factors", in *Environmental Management in South Africa*, eds R.F. Fuggle & M.A. Rabie (Cape Town: Juta, 1992), p. 58.

¹⁹ See for example, R.L. Smith, *Ecology and Field Biology*, 3rd ed. (New York: Harper & Row, 1980).

²⁰ W. Fox, *Toward a Transpersonal Ecology* (Boston: Shambhala, 1990); IUCN, UNEP, WWF, *Caring for the Earth*, p. 28.

²¹ WCED, *Our Common Future*, pp. 155-159; WWF, *The Importance of Biological Diversity* (Gland, n.d.), pp. 15-24.

²² A.B. Cunningham, "Indigenous Plant Use: Balancing Human Needs and Resources", in *Biotic Diversity in Southern Africa*, pp. 93-106.

component of rural development in terms of food production and employment generation.²³ Furthermore, ecotourism is fast becoming one of the largest income generators in southern Africa²⁴ and its success depends on the effective conservation of biodiversity.

Biotechnology has produced the largest economic bounties from biodiversity.²⁵ Traditional biotechnology has been used and respected for centuries by farmers and food preparers and has formed the basis for modern biotechnology.²⁶ In addition to cellular manipulations, the new biotechnology uses genetic engineering to transform genes into novel life forms. The applications are wide - ranging from industry through to agriculture and medicine.²⁷ The rewards - for the transnational corporations who largely control the new technologies - are enormous. Biotechnology is now recognised as a booming multibillion dollar industry.²⁸ This, together with the industry's ultimate dependence on biodiversity, is largely the reason for biotechnology and biodiversity being elevated simultaneously onto the agendas of governments and decision-makers.

12.1.3 Negotiating for a Biodiversity Convention

These are powerful and universal reasons for us to conserve biodiversity. Yet regarding biodiversity as a global commons is inequitable, since two-thirds of the world's biodiversity is located in developing countries, while most of the benefits from

²³ See for example, African National Congress (hereafter cited as the ANC), "Mayibuye iAfrika: An Introduction to ANC Environmental Policy" (n.p., n.d.); V. Munnik, "Living with Lions: Conservation in Kangwane", *New Ground* no. 6 (Summer 1991/92), pp. 16-18; S.S. Sangweni, "Statement of the ANC to UNCED", Rio de Janeiro, 10 June 1992.

²⁴ Huntley et al., *South African Environments into the 21st Century*, p. 45.

²⁵ See V. Shiva, *Biotechnology and the Environment* (Penang: Third World Network, 1992), pp. 1-37.

²⁶ E. Rugumayo, "Biodiversity, Biotechnology and UNCED 1992", *Network '92*, no. 5 (March 1991), p. 3; South Centre, *Environment and Development: Towards a Common Strategy of the South in the UNCED Negotiations and Beyond* (n.p., 1991), p. 23; UN, "Protecting the Diversity of Species on the Planet".

²⁷ See Rugumayo, "Biodiversity, Biotechnology and UNCED 1992", p. 3; and Shiva, *Biotechnology and the Environment*, pp. 1-37.

²⁸ M. Crawford, "Wall Street Takes Stock of Biotechnology", *New Scientist*, 23 November 1991, pp. 36-37; P.J. Hilts, "US Says it will Speed Gene-Product Approvals", *New York Times*, 6 March 1992; Shiva, *Biotechnology and the Environment*, pp. 1-37.

its commercialisation accrue to private industries in industrialised nations.²⁹ This, essentially, has framed the debate during negotiations for a Convention on Biological Diversity.

At issue is the question of Intellectual Property Rights (IPRs). With regard to biotechnology, IPRs allow life forms and processes to be patented: they are essentially legal instruments to monopolise privileges and technologies.³⁰ Corporations controlling biotechnology regard patenting as crucial to "make capitalism's invisible hand rock the cradle of the infant biotechnology industry".³¹ Aside from the moral considerations involved in patenting life forms, the creation of IPRs is inequitable. Countries from where genetic material originates and in particular local peoples who have contributed to the discovery and development of these resources, receive little if any compensation.³²

Any agreement on biodiversity, the South has argued, should thus establish not only rights and obligations regarding the conservation and management of biodiversity, but also rights regarding access to the resulting knowledge and technology.³³ Furthermore, profits accruing from biotechnology should be more equitably distributed. Additionally, industrialised countries should provide financial support to allow developing countries to conserve biodiversity as well as to eradicate poverty.³⁴

²⁹ For further detail see T.E. Lovejoy, "Some Thoughts on Biological Diversity", *Network '92*, no. 9, Special Network Supplement (August 1991); C. Raghavan, "Biodiversity: 'One Step Forward, Two Steps Back'", *Third World Resurgence*, no. 14/15 (October/November 1991), p. 43; V. Shiva, *Biodiversity: A Third World Perspective* (Penang: Third World Network, 1992), pp. 14-18; V. Shiva, "Biodiversity, Biotechnology and Bush", *Third World Network Earth Summit Briefings*, no. 23 (1992); South Centre, *Environment and Development...*, p. 23; and UN, "Protecting the Diversity of Species on the Planet".

³⁰ South Centre, *Environment and Development...*, p. 23; UN, "Protecting the Diversity of Species on the Planet".

³¹ Quote from the Environment Affairs Manager for Du Pont Chemicals, in D. Marti, "Patented Plants, Animals are Negotiating Key", *Earth Summit Times*, 3 June 1992, p. 3.

³² Centre for Our Common Future, "Those Elusive Conventions", *Network '92*, no. 15 (March 1992), p. 3; C.Y. Ling, "Unequal Negotiations in an Unequal World", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 9; South Centre, *Environment and Development...*, p. 23.

³³ See Shiva, *Biodiversity: A Third World Perspective*, pp. 24-28; Shiva, "Biodiversity, Biotechnology and Bush"; South Centre, *Environment and Development...*, pp. 23-24; and UN, "Protecting the Diversity of Species on the Planet".

³⁴ C. Raghavan, "Biodiversity Concerns too North-Biased", *Third World Resurgence*, no. 14/15 (October/November 1991), p. 45; Rugumayo, "Biodiversity, Biotechnology and UNCED 1992", p. 3; Shiva, *Biodiversity: A Third World Perspective*, pp. 24-28.

The Biodiversity Convention is an attempt to address these complex and critical issues but should not be viewed in isolation. Several other international conservation treaties exist, although they are quite specific (eg the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES);³⁵ the *Convention for the Conservation of Wetlands of International Importance especially as Waterfowl Habitats* (RAMSAR)³⁶). Other documents which relate to the Biodiversity Convention include the World Conservation Strategy (1980),³⁷ the Caring for the Earth Strategy (1991),³⁸ the Biodiversity Action Plan (1991)³⁹ and the Caracas Declaration (1992).⁴⁰

12.2 APPRAISAL OF THE TREATY

The UNEP first called on governments to consider an international legal instrument for the conservation and sustainable use of biodiversity in 1987.⁴¹ A year later, UNEP established a working group to initiate negotiations for a Convention. Five sessions of difficult negotiations were held by an Intergovernmental Negotiating Committee (INC) before adopting the final text in May 1992 at Nairobi.⁴² The final document contains only that which the international community could agree to and is considered far weaker than earlier drafts.⁴³ It comprises 41 articles which set out conservation measures, and regulate access to genetic resources, technology transfer, biotechnology and intellectual property rights. Over 150 countries, including all of

³⁵ The 1973 *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES) entered into force in 1975. It aims to protect endangered species from the animal and plant trades by a system of import-export permits. For a recent review of CITES see D. Concar & M. Cole, "Conservation and the Ivory Tower", *New Scientist*, 29 February 1992, pp. 29-33.

³⁶ The 1971 *Convention for the Conservation of Wetlands of International Importance especially as Waterfowl Habitat* (RAMSAR) obligates contracting parties to use all wetlands under their jurisdiction wisely. Each contracting party also agrees to designate for conservation at least one wetland of international importance.

³⁷ IUCN, UNEP, WWF, *World Conservation Strategy* (Gland, 1980).

³⁸ IUCN, UNEP, WWF, *Caring for the Earth*.

³⁹ WRI (World Resources Institute), IUCN, UNEP, *Global Biodiversity Strategy*, forthcoming.

⁴⁰ Adopted at the Fourth World Congress on National Parks and Protected Areas in Caracas, Venezuela on 21 February 1992. For a critique of the Declaration and how it relates to UNCED, see Centre for Our Common Future, "UNCED and National Parks", *Network '92*, no. 15 (March 1992), p. 4.

⁴¹ Cited in UN, "Convention on Biological Diversity", in *Earth Summit: Press Summaries* (New York, 1992), p. 4.

⁴² See Centre for Our Common Future, "United Nations: UN Environment Programme", *Brundtland Bulletin*, no. 16 (July 1992), p. 23.

⁴³ Ibid.

South Africa's neighbours, have signed the treaty.⁴⁴ The Convention will be examined in some detail below: comments are included as italicised text.

12.2.1 Objectives

The treaty's objectives are "the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation 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."⁴⁵

*These objectives have been regarded in a positive light since they not only relate to the conservation of global biodiversity, but recognise many of the concerns voiced by developing countries.*⁴⁶

12.2.2 Principle

The principle underlying the Convention is that states have the sovereign right to exploit their own resources in accordance with their own environmental policies. Activities within a country's domain should not cause damage to the environment of other states.⁴⁷

*Although national sovereignty over species is recognised, that of the local communities which have conserved biodiversity and whose cultural survival is linked to biodiversity is not.*⁴⁸

⁴⁴ UNEP, "Convention on Biological Diversity: Signature", News Release, 13 June 1992.

⁴⁵ Article 1.

⁴⁶ Marti, "Patented Plants, Animals are Negotiating Key", p. 3; C. Raghavan, "To Sign or Not To Sign", *SUNS* 3 (10 June 1992), p. 3.

⁴⁷ Article 3.

⁴⁸ V. Shiva, "Why Biodiversity Convention may Harm the South", *Third World Resurgence*, no. 24/25 (August/September 1992), p. 16; Shiva, "Biodiversity, Biotechnology and Bush".

12.2.3 Conservation Measures

The Convention commits countries to:

- develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity;⁴⁹

This is one of the most important provisions of the Convention.⁵⁰ However, it is qualified by "as far as possible and as appropriate" and "in accordance with particular conditions and capabilities". This language provides a potential loophole through which countries could exempt themselves from their commitments.⁵¹ Most commitments in the Convention are preceded by similar clauses.

- identify⁵² and monitor⁵³ components of biodiversity important for its conservation and sustainable use, as well as activities having adverse impacts;⁵⁴

Since only 10% of the total biodiversity on the planet is currently described, this call for inventory work is important as it will form the basis for future action programmes.⁵⁵ However, there is no time-table for completing the survey, no guidelines for posting the findings, and no requirement to follow up the survey. In addition, no mention is made of the need for inventories of agencies charged with biodiversity protection.

⁴⁹ Article 6(a).

⁵⁰ WWF, "Biodiversity Convention: The Essential First Step", Press Release, 22 May 1992.

⁵¹ Raghavan, "To Sign or Not To Sign", p. 4; WWF, "Key Elements for the Convention on Biological Diversity" (SL/IGJAN292/4), 6 January 1992.

⁵² Article 7(a).

⁵³ Article 7(b).

⁵⁴ Article 7(c).

⁵⁵ Lovejoy, "Some Thoughts on Biological Diversity".

- establish a system of protected areas and guidelines⁵⁶ for the selection of these areas, and to promote environmentally sound development in areas adjacent to protected areas;⁵⁷
- promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species;⁵⁸
- develop legislation for the protection of threatened species and ecosystems;⁵⁹
- rehabilitate and restore degraded ecosystems and promote the recovery of threatened species;⁶⁰
- control the risks associated with the use and release of living modified organisms resulting from biotechnology;⁶¹
- prevent the introduction of, control or eradicate alien species which threaten endemic ecosystems, habitats or species;⁶²
- respect and preserve the knowledge, innovations and practices of indigenous and local communities who embody traditional lifestyles relevant for the conservation and sustainable use of biodiversity. The wider application of these practices should be promoted, and the benefits equitably shared;⁶³ and
- adopt measures and establish facilities for the *ex-situ* conservation of biodiversity, predominantly for the purpose of complementing *in-situ* measures.⁶⁴

⁵⁶ Article 8(a).

⁵⁷ Article 8(e).

⁵⁸ Article 8(d).

⁵⁹ Article 8(k).

⁶⁰ Article 8(f).

⁶¹ Article 8(g).

⁶² Article 8(h).

⁶³ Article 8(j).

⁶⁴ Article 9.

12.2.4 Promoting the Sustainable Use of Biodiversity

In promoting the sustainable use of components of biodiversity, countries should:

- support local involvement in restoring degraded areas;⁶⁵
- encourage traditional uses of biological resources which are sustainable;⁶⁶
- encourage cooperation between government and private sectors for the sustainable utilisation of biodiversity;⁶⁷
- integrate these considerations into national decision-making;⁶⁸
- adopt measures which minimise adverse impacts on biodiversity;⁶⁹ and
- adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of biological resources.⁷⁰

This is an important provision, which provides the incentive to make sustainable utilisation of biological resources a more attractive financial alternative to unsustainable usages.⁷¹

⁶⁵ Article 10(d).

⁶⁶ Article 10(e).

⁶⁷ Article 10(e).

⁶⁸ Article 10(a).

⁶⁹ Article 10(b).

⁷⁰ Article 11.

⁷¹ WWF, "Key Elements for the Convention on Biological Diversity".

12.2.5 Research, Training, Information and Education

Countries should:

- establish and support training programmes and research which contribute to the conservation and sustainable use of biodiversity;⁷²
- develop public awareness and educational programmes;⁷³
- facilitate information exchange;⁷⁴
- promote international technical and scientific cooperation, strengthen national capabilities, and develop technologies which promote the aim of the Convention;⁷⁵ and
- report on measures taken regarding provisions of this Convention, and their effectiveness in meeting the objectives.⁷⁶

A subsidiary body for the provision of scientific, technical and technological advice has been established by the Convention.⁷⁷

*The setting up of this body by the Convention is significant since it will ensure the independence of the Convention from other scientific bodies and will allow for regional representation of scientists from all over the world.*⁷⁸

⁷² Article 12.

⁷³ Article 13.

⁷⁴ Article 17.

⁷⁵ Article 18.

⁷⁶ Article 26.

⁷⁷ Article 25, para. 1.

⁷⁸ WWF, "Key Elements for the Convention on Biological Diversity".

12.2.6 Impact Assessment

The Convention commits countries to:

- introduce procedures requiring environmental impacts assessments for projects, programmes and policies likely to have adverse impacts on biodiversity - public participation should be an integral part of these procedures;⁷⁹ and

*No provision is made, however, to enhance the positive attributes of projects.*⁸⁰

- prevent or minimise adverse effects on biodiversity in areas beyond the limits of national jurisdiction.⁸¹

12.2.7 Access to Genetic Resources

- The authority to determine access to genetic resources rests with national governments and is subject to national legislation.⁸²
- Access is to be granted by means of "mutually agreed terms"⁸³ and is to be "subject to prior informed consent of the country providing the resource".⁸⁴
- Access to genetic resources for environmentally sound uses should be facilitated between countries.⁸⁵
- Genetic resources referred to in this Convention are only those provided by "countries of origin of such resources".⁸⁶

⁷⁹ Article 14(a).

⁸⁰ G. Preston, Environmental Evaluation Unit, University of Cape Town, pers. comm.

⁸¹ Article 14(c,d).

⁸² Article 15, para. 1.

⁸³ Article 15, para. 4.

⁸⁴ Article 15, para. 5.

⁸⁵ Article 15, para. 2.

⁸⁶ Article 15, para. 3.

The definition of "country of origin" means the country possessing genetic resources in in-situ conditions.⁸⁷ Yet the Convention's definition of in-situ conditions allows laboratories and botanical gardens to fit the term.⁸⁸ In practice, this builds up a legal case for institutions to claim patent rights over genetic materials in their collection and endows these institutions with the same rights as those of the countries of origin.⁸⁹ This is a cause for concern among developing countries.⁹⁰

- Scientific research, based on genetic resources provided by other signatories to the Convention, should be "with the full participation of, and where possible in, such Contracting Parties". Measures should be taken to allow for countries providing the genetic material to participate in biotechnological research.⁹¹
- Legislative, administrative or policy measures should be taken by governments to ensure that research and benefits arising from the utilisation of biological resources and from biotechnology are shared fairly and equitably.⁹²

This ensures that benefits arising out of research will be shared with the parties providing the resources.⁹³ However, nothing in the Convention would protect a country providing access to their materials from receiving inadequate compensation.

⁸⁷ Article 2.

⁸⁸ Ibid.

⁸⁹ Third World Network, "Biodiversity Convention Could Open Doors to Patenting of Genetic Resources in Gene Banks, and Reduced Bargaining Position of South", *Earth Summit Briefings*, no. 24 (8 June 1992).

⁹⁰ Ibid.

⁹¹ Article 15, para. 6.

⁹² Article 15, para. 7.

⁹³ See M. Makkapati, "Patenting Life Forms: A Cause for Concern", *Development Alternatives* 2(9) (July 1992), p. 4; and Raghavan, "To Sign or Not To Sign", p. 3.

12.2.8 Access to and Transfer of Technology

- Access to and the transfer of technology relevant to the conservation and sustainable use of biodiversity should be encouraged between countries.⁹⁴ For developing countries, this should be provided under fair and favourable terms.⁹⁵

*Although this is an attempt at achieving some degree of equity, the language used is vague and there is no requirement for developed countries to supply technologies to less developed nations.*⁹⁶

- With regard to technology subject to patents, access and transfer shall be provided "on terms which recognise and are consistent with the protection of intellectual property rights".⁹⁷
- Legislative, administrative or policy measures should be established to ensure that those countries supplying genetic resources are provided with access to and transfer of technology, including technology protected by IPRs.⁹⁸

*Thus, although no limits are imposed on patenting, the provision does suggest that patents are a constraint on the transfer of technology.*⁹⁹

- Access to the transfer of technology in developing countries should be facilitated by the private sector.¹⁰⁰
- Contracting Parties "recognising that IPRs may have an influence on the implementation of this Convention, shall cooperate subject to national legislation

⁹⁴ Article 16, para. 1.

⁹⁵ Article 16, para. 2.

⁹⁶ Letter of Dr Simon Lyster, Senior Conservation Officer, WWF-International, sent to Prime Minister John Major of the United Kingdom, Press Statement, 5 June 1992.

⁹⁷ Article 16, para. 2.

⁹⁸ Article 16, para. 3.

⁹⁹ "Bush: Why I Won't Sign the Treaty", *New Scientist*, 6 June 1992, p. 6.

¹⁰⁰ Article 16, para. 4.

and international law in order to ensure that such rights are supportive of and do not run counter to its objectives".¹⁰¹

This provision was cited by the United States (US) as one of the three main reasons for not signing the Convention.¹⁰² By accepting the clause, the ongoing deregulation in the US would be illegal under international law. In addition, US attempts to impose its IPRs on other countries through its Trade Act and through the General Agreement on Tariffs and Trade (GATT) would be frustrated.¹⁰³

12.2.9 Handling of Biotechnology

- The need for a protocol concerning the safe transfer, handling and use of living and modified organisms resulting from biotechnology should be considered.¹⁰⁴

There is clear need for an international code of conduct on biotechnology - to make companies and institutions liable for any adverse consequences of biotechnology, and to institute a fundamental public right to know which particular foodstuffs and products involve biotechnology.¹⁰⁵

- Available information concerning safety regulations, usage, and adverse impacts of genetically engineered organisms should be provided to countries introducing these organisms.¹⁰⁶

¹⁰¹ Article 16, para. 5.

¹⁰² D.R. Abbasi, "US Nixes Biodiversity", *Earth Summit Times*, 1 June 1992, pp. 1, 16.

¹⁰³ For further detail see Shiva, "Why Biodiversity Convention may Harm the South", pp. 17-18; Shiva, "Biodiversity, Biotechnology and Bush"; "Corporate Colonialism: Guidelines for the US at UNCED", *NGONET*, no. 4 (March 1992); "If it's not All Take and No Give, Don't Sign", *Crosscurrents*, 3 June 1992, p. 12; and "Bush: Why I Won't Sign the Treaty", p. 6.

¹⁰⁴ Article 19, para. 3.

¹⁰⁵ See for example, P. Leon, "Free Exchange of Genetic Resources a Must", *Terra Viva*, 10 June 1992, p. 16; C.Y. Ling, "'We Don't Want to be Testing Ground for Biotech' says South", *Third World Resurgence*, no. 14/15 (October/November 1991), p. 48; and WWF, "WWF Urges Countries to Convert UNCED Decisions into Action", Press Release, Rio de Janeiro, 14 June 1992.

¹⁰⁶ Article 19, para. 4.

A second reason for the US not signing the Convention is that "unacceptable" regulations controlling export would damage US companies.¹⁰⁷

12.2.10 Financial Resources and Mechanisms

- All signatories are obliged to provide financial support and incentives to national activities to achieve the objectives of the Convention.¹⁰⁸

These obligations are, however, subject to accordance with countries' capabilities and national policies.¹⁰⁹

- Developed countries are obliged to provide "new and additional financial resources" to enable developing countries to meet the costs of implementing measures of this Convention.¹¹⁰

This accepts that the North must help the South financially and recognises that financial assistance must be in addition to current levels of development assistance.¹¹¹

- Developing countries signing the treaty can determine the "policy, strategy, programme of priorities and eligibility criteria relating to the access and utilisation of such resources".¹¹²

This clause is the third reason for the US not signing the treaty, on the grounds that it gives developing countries too large a say over funding for the conservation of biological diversity.¹¹³

¹⁰⁷ Hiltz, "US Says it will Speed Gene-Product Approvals"; Shiva, "Biodiversity, Biotechnology and Bush"; Shiva, "Why Biodiversity Convention may Harm the South", p. 18; "I didn't come to apologise", *Terra Viva*, 13 June 1992, p. 2.

¹⁰⁸ Article 20, para. 1.

¹⁰⁹ *Ibid.*

¹¹⁰ Article 20, para. 2.

¹¹¹ Centre for Our Common Future, "United Nations: UN Environment Programme", p. 24; Raghavan, "To Sign or Not To Sign", p. 4.

¹¹² Article 20, para. 2.

¹¹³ See WWF, Letter of Dr Simon Lyster to Prime Minister John Major; "Bush: Why I Won't Sign the Treaty", p. 6; "I didn't come to apologise", p. 2; and "If it's not All Take and No Give, Don't Sign", p. 12.

- Contributions "shall take into account the need for adequacy, predictability and timely flow of funds" and the importance of burden sharing among the contributing developed parties.¹¹⁴
- The extent to which developing countries achieve their commitments will depend on the provision of adequate funds and technology transfer by developed countries.¹¹⁵
- The mechanism providing financial resources to developing countries shall be on a grant or concessional basis.¹¹⁶
- The mechanism will function "under the authority and guidance of, and be accountable to the Conference of the Parties". The Conference will decide the institutional structure at its first meeting.¹¹⁷
- The Conference of Parties will determine financial amounts, priorities and criteria to access funds. The mechanism will operate within "a democratic and transparent system of governance".¹¹⁸
- The Global Environmental Facility (GEF) will act as the financial interim arrangement until the first Conference of Parties.¹¹⁹ Chapter 10 of this dissertation describes the GEF in detail.

¹¹⁴ Article 20, para. 2.

¹¹⁵ Article 20, para. 4.

¹¹⁶ Article 21, para. 1.

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ Article 39.

12.2.11 Omissions

The Convention does not:

- recognise the role and the rights of women, farmers, indigenous peoples and local communities in conserving biological diversity and developing traditional biotechnology;¹²⁰
- establish a global list of species and protected areas;

This would have given the Convention some focus and would have helped to set priorities for conservation and funding. Countries did not want to be held responsible for local species depletions and hence resisted this idea.¹²¹

- address the need to protect marine biological diversity;¹²² or
- include the world's gene banks.

These so-called "gene banks" are estimated to hold 85% of known genetic resources of the most important agricultural crops.¹²³ Over two million seed samples, collected from developing countries by Northern corporations and research institutions are stored in the banks.¹²⁴ Developing countries regard their exclusion from the Convention as a fundamental flaw since this implies that the material will be patented and made available to biotechnology corporations. As a result, developing countries will have to

¹²⁰ Friends of the Earth International, "Raw Deal for the Earth", Press Release, Rio de Janeiro, 12 June 1992; Shiva, "Why Biodiversity Convention may Harm the South", p. 16.

¹²¹ WWF, Position Statement on the Fifth Revised Convention on Biological Diversity to be considered by the Intergovernmental Negotiating Committee in Nairobi, 11-19 May 1992.

¹²² See A. Harkavy, *The Earth Summit: A Progress Report on Preparatory Negotiations for the UN Conference on Environment and Development* (n.p.: Cape '92, 1992), p. 25; and "Forgotten Oceans 'In Peril'", Press Release no. 183, Global Forum, Rio de Janeiro, 8 June 1992.

¹²³ Third World Network, "Biodiversity Convention Could Open Doors..."; "Earth Summit's Biodiversity Treaty: Legalised Theft - Should not be Signed in Rio", Press Release, Rio de Janeiro, 1992.

¹²⁴ *Ibid.*

*pay high prices for seeds and will receive no compensation for having been the original source of the seeds.*¹²⁵

2.2.12 Ratification

The Convention will be open for signature until 4 June 1993.¹²⁶ Ratification will occur following the approval from the participating countries' legislative bodies.¹²⁷ The Convention will enter into force three months after 30 countries have ratified it.¹²⁸ This process is expected to take 2-3 years.¹²⁹

2.2.13 Implementation

A Conference of the Parties will oversee the implementation of the treaty.¹³⁰ The first Conference of the Parties will be convened within a year following the Convention's coming into force.¹³¹ UNEP will continue to house the interim secretariat, until there is agreement on the location and mandate of a permanent structure.¹³²

12.3 FOLLOW-UP MECHANISMS

As with the Climate Convention, there is considerable scope for national action and the addition of powerful protocols.¹³³ In preparing for the Convention, governments should:¹³⁴

¹²⁵ Raghavan, "To Sign or Not To Sign", p.3; Shiva, "Why Biodiversity Convention may Harm the South", p. 17; Third World Network, "Biodiversity Convention Could Open Doors..."; "Earth Summit's Biodiversity Treaty: Legalised Theft...".

¹²⁶ Article 33.

¹²⁷ Article 34.

¹²⁸ Article 36, para. 1.

¹²⁹ Centre for Our Common Future, "The Rio Results", *Brundtland Bulletin*, no. 16 (July 1992), p. 5.

¹³⁰ Article 23.

¹³¹ Article 23, para. 1.

¹³² Article 40.

¹³³ See D.E. Pitt, "Gloom Looms, but Journey's Just Begun", *Earth Summit Times*, 7 June 1992, p. 3; and D. Runnalls, "Successes and Failures from Rio: Optimism must Guide us", *Earth Summit Times*, 15 June 1992, p. 7.

¹³⁴ See WWF, "WWF Urges Countries to Convert UNCED Decisions into Action", Press Release, Rio de Janeiro, 14 June 1992.

- ratify the treaty by June 1993;
- agree to fund the first round of projects;
- identify areas in need of immediate protection, including important pockets of marine biodiversity;
- prepare preliminary plans and strategies;
- provide technical expertise to assist developing countries in managing protected areas;
- conduct negotiations on an international legally binding instrument to regulate biotechnology;
- establish a mechanism to compensate countries of origin of genetic diversity for their contribution to commercial applications of biotechnology; and
- reform trade regulation and liberalisation measures, including the GATT and the North American Free Trade Agreement to concur with the objectives of the Convention.

A number of diverse strategies have already been proposed as follow-up activities. The US has advanced a two-tiered plan which would promote biodiversity management schemes at an international level, whilst undertaking surveys and inventories at a national level.¹³⁵ A scientific committee involving UNEP would develop and disseminate appropriate methodologies. The "Darwin Plan",¹³⁶ proposed by the United Kingdom would give developing nations easy access to British technology, whilst opening channels between these nations and British companies. A third initiative,¹³⁷ drawn up by the IUCN, World Resources Institute, UNEP and others, conflicts with both plans and appears to ignore developing country concerns.¹³⁸

¹³⁵ "Biodiversity: US Reveals its Plan", *Terra Viva*, 12 June 1992, p. 5. See also, "Britain Clashes with US over Survival of the Species", *New Scientist*, 20 June 1992, p. 6.

¹³⁶ See "Britain Clashes with US over Survival of the Species", p. 6; and "British Eco-Technology Transfer Initiative", *Terra Viva*, 13 June 1992, p. 14.

¹³⁷ WRI, IUCN, UNEP, *Global Biodiversity Strategy*. See also "Britain Clashes with US over Survival of the Species", p. 6.

¹³⁸ See A. Gray, "The Impact of Biodiversity Conservation on Indigenous Peoples", in *Biodiversity: Social and Ecological Perspectives* (Penang: World Rainforest Movement, 1991), pp. 59-74; Shiva, *Biodiversity: A Third World Perspective*, pp. 18-24; and "Britain Clashes with US over Survival of the Species", p. 6.

The creation of a "Permanent Forum of the South" to focus on biodiversity and biotechnology has been proposed by Cuba.¹³⁹

12.4 BIODIVERSITY AND BIOTECHNOLOGY IN AGENDA 21

Agenda 21 includes two chapters on biodiversity¹⁴⁰ and biotechnology.¹⁴¹ While it is supposed that the texts of the Convention and the corresponding chapters should be equivalent, there is no obligation for them to say exactly the same things.¹⁴²

The chapter on biodiversity calls for the early entry into force of the Biodiversity Convention¹⁴³ and largely reflects the language and commitments in the Convention. There is only one programme area - the "Conservation of biological diversity".

Programme areas within the chapter on "Environmentally Sound Management of Biotechnology"¹⁴⁴ consist of: Increasing the availability of food, feed and renewable raw materials; Improving human health; Enhancing protection of the environment; Enhancing safety and developing international mechanisms for cooperation; and Establishing enabling mechanisms for the development and the environmentally sound application of biotechnology.

Briefly, the approach taken in the biotechnology text in Agenda 21 is top-down and is widely perceived to give industry a free hand, whilst neglecting public interest.¹⁴⁵ Two main criticisms have been directed at the text. Firstly, the report only deals with the applications of new high-technology biotechnologies and ignores the

¹³⁹ L. Ramirez, "Fidel Castro: 'Ecological Debt Should be Paid, not Foreign Debt'", *Terra Viva*, 13 June 1992, p. 5.

¹⁴⁰ Agenda 21, chapter 15.

¹⁴¹ Agenda 21, chapter 16.

¹⁴² See "Why is the US Refusing to Sign the Agreement on Biodiversity?", *Terra Viva*, 9 June 1992, p. 3.

¹⁴³ Agenda 21, chapter 15, para. 4(a).

¹⁴⁴ Agenda 21, chapter 16.

¹⁴⁵ Biotechnology Working Group (USA), "Critique of Agenda 21 Chapter 16 'Environmentally Sound Management of Biotechnology'", Global Forum, Rio de Janeiro, June 1992; NGO Task Force on Biotechnology, "Why UNCED has got Biotech All Wrong", *Third World Resurgence*, no. 24/25 (August/September 1992), pp. 19-20; "Biotech Program Anti-Public, Pro-Industry", *SUNS* 3 (10 June 1992), p. 2.

potential of different technologies such as traditional agro-systems.¹⁴⁶ Secondly, biotechnology is presented as a panacea for all the world's problems, yet there is little reference to the problems and risks associated with genetic engineering.¹⁴⁷

12.5 IMPLICATIONS FOR SOUTH AFRICA

Apart from legal logistics, there is little reason for South Africa not to ratify the Biodiversity Convention immediately. Indeed, many of the treaty's required actions relating to conservation measures, research and impact assessment have already received attention in South Africa, albeit in a piecemeal form.¹⁴⁸ Included in the respective policies of the government, African National Congress (ANC), Pan Africanist Congress (PAC) and Inkatha Freedom Party (IFP) is the need to conserve biodiversity.¹⁴⁹

One of the Convention's more important commitments requires countries to develop national strategies, plans or programmes for the conservation and sustainable use of biodiversity. There is a clear need for a holistic biodiversity strategy in southern Africa,¹⁵⁰ and the Convention could provide a foundation from which to work.

Recent thinking in South Africa regarding the sustainable utilisation of biodiversity¹⁵¹ closely parallels international trends. Convention provisions with

¹⁴⁶ Biotechnology Working Group (USA), "Critique of Agenda 21 Chapter 16 'Environmentally Sound Management of Biotechnology'"; NGO Task Force on Biotechnology, "Why UNCED has got Biotech All Wrong", pp. 19-20.

¹⁴⁷ Ibid. See also "Biotech Program Anti-Public, Pro-Industry", p. 2.

¹⁴⁸ See for example, B.J. Huntley, ed., *Biotic Diversity in Southern Africa*; President's Council, *Report of the Three Committees...*

¹⁴⁹ ANC, *Ready to Govern: ANC Policy Guidelines for a Democratic South Africa*, adopted at the National Conference, 28-31 May, 1992, p. 32; B. Desai, "An Environmental Policy for the Pan Africanist Congress of Azania", *History in the Making* 3(1) (1991), p. 47; Inkatha Freedom Party, "Environmental Policy of the Inkatha Freedom Party", *History in the Making* 3(1), p. 50; President's Council, *Report of the Three Committees...*, p. 66-67.

¹⁵⁰ See Preston & Siegfried, "The Protection of Biological Diversity in South Africa: Profiles and Perceptions of Professional Practitioners in Nature-Conservation Agencies and Natural History Museums"; and Siegfried, "Preservation of Species in Southern African Nature Reserves", p. 199-200.

¹⁵¹ See for example, ANC, "Mayibuye iAfrika: An Introduction to ANC Environmental Policy"; Environmental Monitoring Group, *Towards Sustainable Development in South Africa*, p. 32; Munnik, "Living with Lions: Conservation in Kangwane", pp. 16-18; Sangweni, "Statement of the ANC to UNCED".

respect to this are considered by the ANC's environmental policy¹⁵² in particular. Adopting the Convention would further strengthen community-based conservation initiatives.¹⁵³

The South African biotechnology industry is in its infancy although holds enormous potential for growth.¹⁵⁴ Research and development still constitute the focus of the industry and as yet, few products have entered the market.¹⁵⁵ Thus many of the Convention's proposals concerning genetic resources are not directly relevant in South Africa. While early botanists in the region used the customary knowledge of African people to identify potentially important plants, there has been a general lack of local applied work on indigenous plants and animals.¹⁵⁶ South African research which is being conducted has seldom proved to be commercially viable and the idea of compensating communities for this knowledge has thus not emerged. Given the present lack of control, the equitable distribution of benefits certainly requires attention should the products become commercialised.

There is a code of conduct regulating the use of biotechnology in South Africa,¹⁵⁷ although this is not legally binding. Both the Biodiversity Convention and Agenda 21 give short shrift to the risks of biotechnology yet indicate the need for an international, legally-binding regulatory document. This, together with the inclusion of biotechnology in the ANC's science and technology policy,¹⁵⁸ point towards the need to demystify the science and open up the issue to public scrutiny in South Africa.

¹⁵² ANC, *Ready to Govern...*, pp. 30, 32.

¹⁵³ See for example, E. Boonzaier, "People, Parks and Politics", in *Restoring the Land*, pp. 155-162; Centre for Community Organisation Research, "Regaining Control", pp. 65-78; and P. Matlala & V. Munnik, "Bop Starts on the Right Foot", *New Ground*, no. 9 (Spring 1992), pp. 15-17.

¹⁵⁴ J. Thompson, Professor of Microbiology, Department of Microbiology, University of Cape Town, pers. comm.

¹⁵⁵ *Ibid.*

¹⁵⁶ Cunningham, "Indigenous Plant Use: Balancing Human Needs and Resources", p. 95.

¹⁵⁷ The South African Committee for Genetic Experimentation (SAGENE), as constituted by the *Government Gazette*, no. 13979 (15 May 1992), pp. 10-11, has drafted procedures and a questionnaire on the importation, trial release or general release of genetically modified organisms.

¹⁵⁸ ANC, *Ready to Govern...*, p. 57.

12.6 CONCLUSIONS

The Convention has succeeded on many counts. For the first time in history biodiversity has been popularised and there is consensus among nations on the need to conserve and sustainably use it.¹⁵⁹ It is also the first time that the relationship between environment and development has been put into legal practice: environmental objectives have effectively been coupled to the need for economic development in developing countries.¹⁶⁰ The result is a structure for the exchange of Southern genetic riches and Northern technology.

The Convention addresses many developing nation's concerns.¹⁶¹ It recognises that natural resources are the property of states, that the benefits of biotechnology should be shared, and that access to genetic resources should be on "mutually agreed terms". It includes commitments for funding and the access to and transfer of technologies.

However, the Convention excludes the world's gene banks from its provisions¹⁶² and does not address the moral issue of patenting living organisms.¹⁶³ Agenda 21 assumes an autocratic approach to biotechnology and promotes the interests of industry - and transnational corporations in particular - rather than those of society.¹⁶⁴ Inadequate recognition is given to the risks of biotechnology.¹⁶⁵

Many of the key paragraphs of the Convention are ambiguous and are qualified by language to ensure the obligations are not too strong.¹⁶⁶ The treaty is weakened

¹⁵⁹ WWF, "Biodiversity Convention: The Essential First Step".

¹⁶⁰ Marti, "Patented Plants, Animals are Negotiating Key", p. 3; WWF, "Biodiversity Convention: The Essential First Step".

¹⁶¹ See Centre for Our Common Future, "The Rio Results", p. 5; and Makkapati, "Patenting Life Forms: A Cause for Concern", p. 4.

¹⁶² Shiva, "Why Biodiversity Convention may Harm the South", p. 17; "Biotech Program Anti-Public, Pro-Industry", p. 2.

¹⁶³ Shiva, "Why Biodiversity Convention may Harm the South", p. 17.

¹⁶⁴ NGO Task Force on Biotechnology, "Why UNCED has got Biotech all Wrong", pp. 19-20; "Biotech Program Anti-Public, Pro-Industry", p. 2.

¹⁶⁵ Ibid.

¹⁶⁶ Centre for Our Common Future, "The Rio Results", p. 5.

considerably by the exclusion of a global list of protected areas.¹⁶⁷ Linkages between biodiversity and sustainable economic development have been understated, as has the role of local communities.¹⁶⁸

Implementation of the treaty will largely depend on actions taken by individual governments and agreements they enter into. The mechanics of the treaty are still unresolved and it is unclear as to how the Convention will be reconciled with conflicting trade practices (eg GATT).¹⁶⁹ The rejection of the treaty by the US further complicates future agreements.

In concluding, the treaty will, despite weak obligations, be a useful tool to promote the conservation of the planet's rapidly diminishing biodiversity.¹⁷⁰ However, the success of the Convention is likely to depend on the extent to which developing countries are paid to protect their resources and on the sincerity of individual governments.

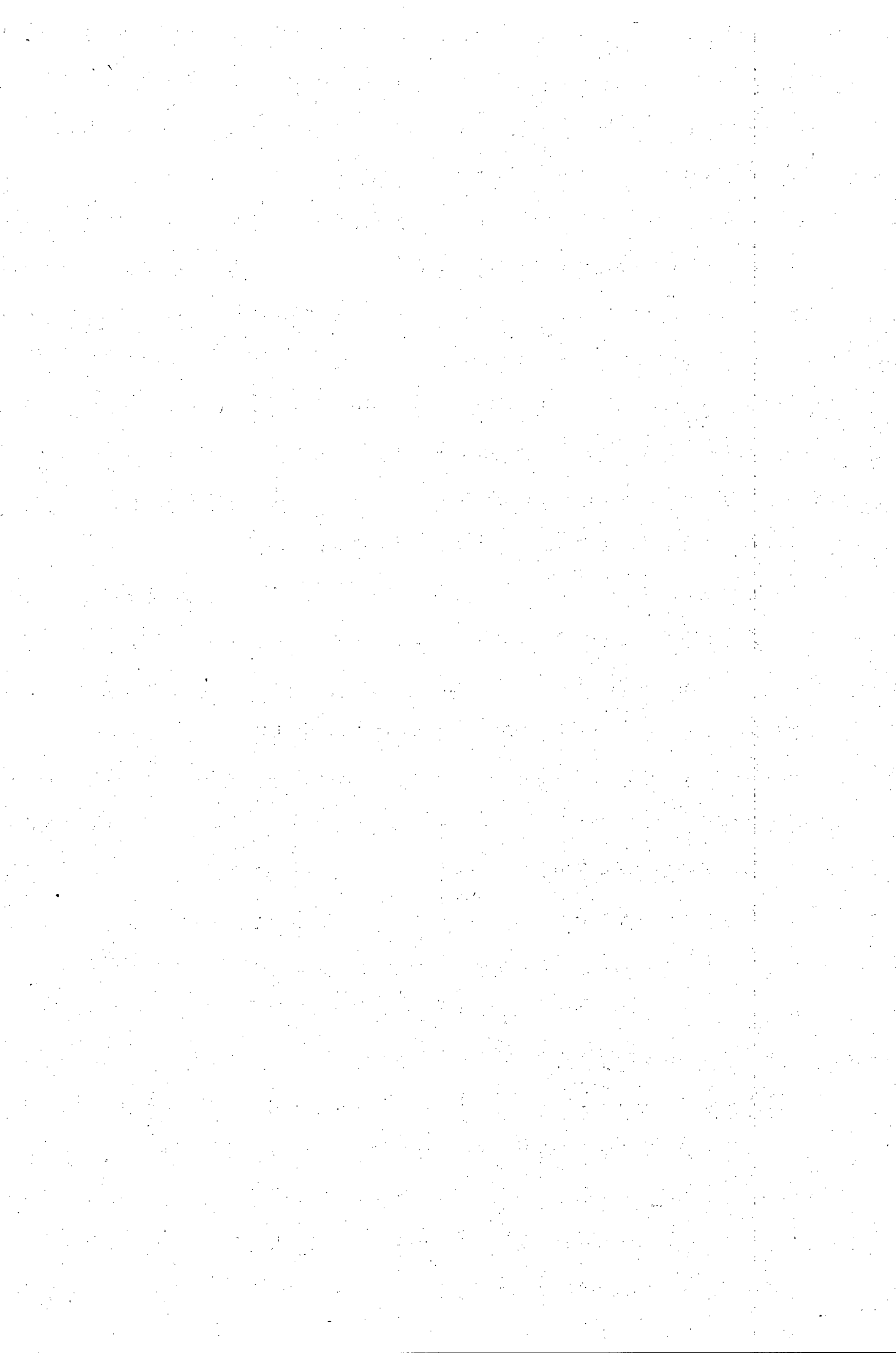
This concludes Chapter 12 which has documented the reasons for biodiversity being projected as a global concern as well as negotiations leading up to the Convention. The Convention has been evaluated and implications for South Africa of signing the treaty discussed. The following chapter summarises the preceding twelve chapters and concludes this dissertation. □

¹⁶⁷ WWF, Position Statement on the Fifth Revised Convention on Biological Diversity.

¹⁶⁸ For further detail, see Friends of the Earth International, "Raw Deal for the Earth"; Harkavy, *The Earth Summit...*, p. 25; and Shiva, "Why Biodiversity Convention may Harm the South", p. 17.

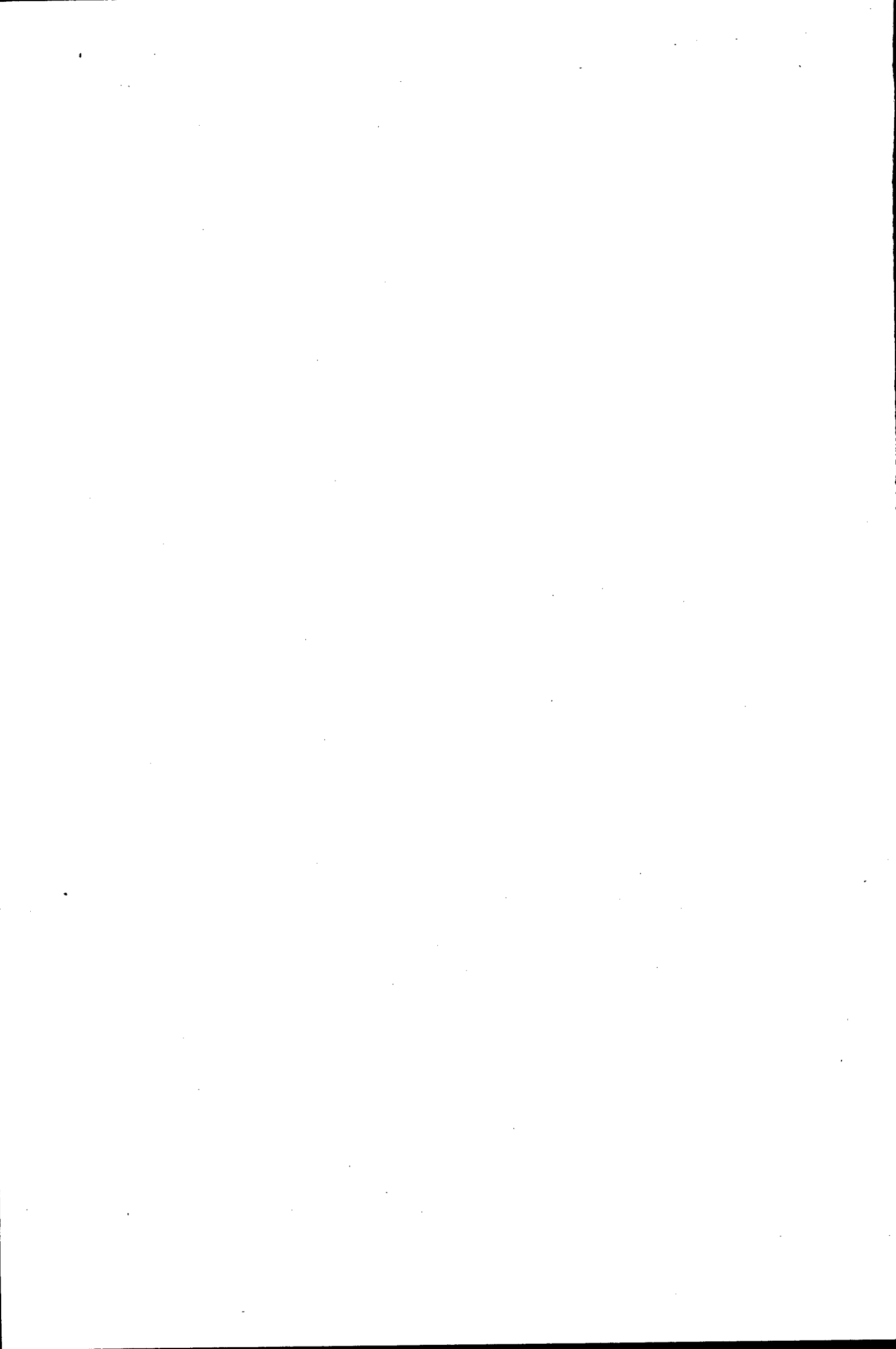
¹⁶⁹ W. Novaes, "The Future of Biodiversity", *Terra Viva*, 10 June 1992, p. 11.

¹⁷⁰ See WWF, Letter of Dr Simon Lyster to Prime Minister John Major.



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SUMMARY OF CONCLUSIONS

13.1 INTRODUCTION¹

In a collective bid to safeguard the Earth, almost 50 000 people gathered in Rio de Janeiro during June 1992 for what has been described as the inception of the Environmental Revolution. Among them were 103 heads of state, 9 000 journalists, a range of governmental delegations and non-governmental organisations, indigenous peoples, women's groups, youth and children, trade unions, business and industry, academics, religious groups and concerned individuals. Two unique events were central to this gathering: the chiefly governmental United Nations Conference on Environment and Development (UNCED), attracting the largest-ever assembly of world leaders and country delegations; and the non-governmental Global Forum representing the largest-ever gathering of independent sectors.

Twenty years ago, a United Nations (UN) conference was held in Stockholm in the first international attempt to agree on actions to protect the environment. While this event was considered a milestone both in the development of international environmental law and in increasing public awareness regarding the environment, the health of the planet has deteriorated at an unprecedented rate since Stockholm. This has mostly been due to the failure of governments to integrate development and environment in economic policy and decision-making. In addition, environment has largely remained a marginal issue on the political agenda. The publication of *Our Common Future* by the World Commission on Environment and Development in 1987 recognised these failings, resulting in the passing of a resolution by the UN General Assembly to hold a conference in Rio de Janeiro on the 20th anniversary of Stockholm. It was decided that nations should be represented by their heads of state, thus making it the first ever "Earth Summit".

¹ See Chapter 1 of this dissertation.

13.1.2 UNCED and South Africa

The South African government was not officially represented at either UNCED or its preparatory meetings, although it was invited to attend the conference as an observer and was asked to submit a report on the country's environmental situation and development trends. A contingent of South Africans - including extraparliamentary political groups, youth and religion representatives, environment and development non-governmental organisations (NGOs), journalists and industrialists - did, however, attend UNCED and the Global Forum. The African National Congress (ANC), accorded observer status at the Earth Summit, delivered a speech endorsing the main principles and guidelines of Agenda 21. Also represented at UNCED was the Pan Africanist Congress (PAC) which presented its energy policy.

13.2 THIS DISSERTATION ²

This dissertation has been written by a South African participant in the Global Forum who was present at the Rio meetings. It represents the scholastic version of a popular report which has been widely distributed. The dissertation has attempted to condense and analyse the mass of documentation emanating from Rio and to place UNCED proposals within a South African context. While based on personal impressions, it has aimed to be as objective as possible and thus to be useful to an array of diverse sectors. Where appropriate, pointers have been provided as to conspicuous gaps in present and proposed national policies. The focus is on what we as South Africans can do to achieve sustainable development.

Each of the five documents agreed on at Rio has been discussed in detail in the 12 chapters of this dissertation. Each chapter has been placed within both a global and South African context. Agenda 21 proposals have been included as "Boxes" in the text and have been evaluated where appropriate. A section on the implications for South

² Ibid.

Africa has concluded each chapter. For the purposes of this dissertation, South Africa has been classified as a developing nation.

13.3 PREPARATIONS FOR UNCED ³

In the two years preceding UNCED, four meetings or "PrepComs" were held to formulate documents and negotiate issues. Several diverse inputs informed this process, including meetings of all five UN Regional Economic Commissions, over 100 national reports on sustainable development, and a series of independent sector activities. During negotiations, governments were mostly split into two blocs: Northern industrialised countries and Southern developing nations.

As at Stockholm, a deep schism between North and South undermined attempts to address the requirements for sustainability and many of UNCED's aims were consequently not attained. However, a set of five agreements was forged between governments imploring countries to chart a more sustainable course:

- The Rio Declaration on Environment and Development - a set of non-binding principles intended to inform and guide all other UNCED documents
- Agenda 21 - a non-binding plan of action for sustainable development, covering 40 chapters and 115 programme areas
- A Declaration of Principles on Forests
- The Framework Convention on Climate Change
- The Convention on Biological Diversity

³ Ibid.

13.4 THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT ⁴

The Rio Declaration comprises 27 principles for state and interstate behaviour. Initially intended to be an ethical backbone to UNCED (an "Earth Charter") and the environmental equivalent of the UN Declaration on Human Rights, the Rio Declaration was substantially weakened by conflicting visions between North and South. There is broad consensus that a more meaningful agreement should be negotiated at the 50th anniversary of the UN in 1995.

13.5 AGENDA 21

13.5.1 The Prospering World: trade systems and the integration of environment and development in decision-making ⁵

It is generally agreed that UNCED failed to reform economic structures, regulate transnational corporations, tackle the debt crisis and the South's falling terms of trade, and address the environmental impacts of free trade. Moreover, UNCED largely failed to internalise environmental and social costs and restructure the relevant decision-making processes.

The international debate concerning these issues has highlighted areas in which South Africa should tread carefully. South Africa's self-sufficiency has allowed for relative independence within the global economy and this may well be to our advantage in attaining sustainable development. Present and future foreign investment in South Africa should be subject to careful scrutiny and be in accordance with agreed codes of conduct.

⁴ See Chapter 2 of this dissertation.

⁵ See Chapter 3 of this dissertation.

*13.5.2 The Just World: population, poverty and consumption*⁶

Discussion of population at UNCED and its preparatory meetings was mired in confusion and controversy. This was chiefly due to North/South divisions, opposition from the Catholic Church as well as the sensitivity to matters pertaining to population control among women's groups. Poverty, and urban poverty in particular, was inadequately addressed at UNCED. A common criticism directed at Agenda 21 was that poverty, rather than affluence, was identified as the chief cause of environmental degradation. References to overconsumption and unsustainable lifestyles were systematically deleted by industrialised countries and the final text addresses these issues only indirectly.

Despite these inadequacies, UNCED has provided some general pointers for South Africa. Firstly, effective solutions to population growth, poverty and overconsumption will only be found if we confront these issues in an integrated fashion. To-date, a fragmented narrow vision has typified thinking on these matters. Secondly, empowering women and uplifting their status is the most crucial ingredient to controlling population growth. In South Africa, there have been few attempts to holistically embrace a women's empowerment programme. Thirdly, long-term efforts to reduce poverty are likely to depend upon effective, low-cost initiatives which promote self-reliance among communities and are focused on basic needs. In South Africa, past initiatives to alleviate poverty have typically induced dependency rather than self-reliance. Finally, the basic needs approach advocated by Agenda 21 aims to reduce inequalities between population groups and thus directly contradicts the luxury consumption patterns evident among wealthy South Africans. Among poorer South Africans, aspirations towards luxury consumption patterns will need to be sensitively challenged. Environmentalists should become allied with mass-, worker- and community-based organisations to demonstrate the links between basic needs and environmental issues.

⁶ See Chapter 4 of this dissertation.

13.5.3 *The Habitable World: human settlements, urban water supplies, solid waste, urban pollution and health*⁷

Discussion of urbanisation at UNCED was uncontroversial. If adopted, Agenda 21 proposals could go a long way to creating more sustainable urban environments. These endorse an "enabling approach" which promotes public and private sector investment and a facilitating climate to further generate resources needed to improve people's living and working environments. Other strong themes include cooperation, partnership and the full participation of all sectors in decision-making processes.

Many of Agenda 21's proposals are in line with urban priorities in South Africa and match ANC - and to a lesser extent - government policy in several respects. For example, Agenda 21 promotes redistributive financial mechanisms and supports labour-intensive, energy-efficient, local construction activities. Both the PAC and the Inkatha Freedom Party also subscribe to the broad objectives of these proposals. Areas of Agenda 21 highlighted as requiring attention in South Africa include the proposal for governments to develop incentives and control measures for the environmentally sound use of land. Agenda 21 additionally underscores the inefficient and inequitable management of urban water resources and solid waste in South Africa.

13.5.4 *The Fertile World: freshwater resources, agriculture, forests, desertification and drought*

a. Water⁸

Agenda 21's text on freshwater embraces important principles including the need for integrated water management, recognition of the critical role of women in managing water, treating water as an economic as well as a social good, and the right to water for all users and water-dependent ecosystems. However, several NGOs criticised Agenda 21 for its inadequate discussion of ways to deal with the effects of water problems on society, environment and the economy.

⁷ See Chapter 5 of this dissertation.

⁸ See Chapter 6 of this dissertation.

Many of the actions proposed by Agenda 21 match the national water management strategy presently being defined by the South African Department of Forestry and Water Affairs. There is a similar matching of policies - for the ANC, IFP and government - as regards the "polluter pays" principle and the need for increased efficiency in water use. There are, however, no mechanisms in the government's national strategy to integrate community management of water into the context of overall planning, as recommended by Agenda 21. Other Agenda 21 proposals requiring attention relate to the provision of a basic water and sanitation infrastructure. While there is broad consensus that this is a priority in South Africa, the institutional, legal and financial mechanisms to achieve this are unclear.

b. Sustainable Agriculture and Rural Development ⁹

This chapter represented one of the few successful attempts of Agenda 21 to integrate environment and development. The text is significant in that it provides a mandate for a global shift towards sustainable agriculture in all aspects of production. This switch has been firmly endorsed by UN agencies, including the Food and Agricultural Organisation (FAO), the UN Environment Programme (UNEP) and the UN Development Programme (UNDP).

The widely accepted need to restructure agriculture in South Africa is in keeping with Agenda 21's call for a review of national and regional agricultural policies. Scant attention, however, has been given to the viability of sustainable agriculture in South Africa. In this regard, Agenda 21's proposals provide valuable guidelines: combining land reform with more sustainable practices could provide an opportunity to promote sustainable development. Furthermore, the lower production costs and labour-intensive nature of sustainable agriculture indicate that this approach might be more appropriate for local conditions. The strengthening of rural institutional capacity, and the provision of appropriate infrastructure, training, credit and services to rural areas are proposals which have tremendous relevance in South Africa. Similarly, Agenda 21's linkage of agroforestry to rural energy needs is a proposal which warrants considerable attention.

⁹ Ibid.

c. **Drought and Desertification** ¹⁰

Of all Agenda 21's programmes, those dealing with drought and desertification are most pertinent to southern Africa. If adopted, these proposals will constitute important steps towards combating desertification and drought. Regarding drought, virtually every proposed action requires attention in South Africa - a fact which reinforces the inadequacy of past and present drought relief programmes in the country. Of greatest significance to African countries is the call for a UN framework convention on desertification, to be finalised by June 1994.

d. **Forests** ¹¹

Two documents emerged from UNCED concerning forests: an Agenda 21 chapter on combating deforestation, and a statement of principles on the conservation of forests. The Agenda 21 text, although general, provides a meaningful basis on which to move ahead on a work programme for the next decade. In contrast, the statement of principles is extremely weak, retrogressing from existing international agreements. This was chiefly due to conflict between industrialised countries and developing countries, sovereignty of forests being the divisive issue.

Agenda 21 points to severe inadequacies in commercial forestry practices in South Africa. For example, the large-scale and expanding afforestation programmes presently underway involve alien species, often in upper catchment areas. This has severe implications for a drought-prone country like South Africa. In addition, the development of commercial forests is directed towards pulp and paper and the export market, rather than towards satisfying people's basic needs for firewood and building materials.

13.5.5 The Common World: protection of the oceans ¹²

The Agenda 21 text on oceans was widely criticised at UNCED for reflecting a lack of specificity regarding actions required for sustainability. This is most evident in

¹⁰ Ibid.

¹¹ Ibid.

¹² See Chapter 7 of this dissertation.

sections relating to coastal management and overfishing on the high seas. In addition, there is little regulation of commercial fishing in areas under national jurisdiction. Of significance is the proposal for UNEP to call an emergency inter-governmental meeting on land-based marine pollution. Despite these weaknesses, there is sufficient scope in Agenda 21 to considerably improve marine protection, but this will depend on individual governments and their respective capacities.

A number of issues raised by Agenda 21 have direct relevance for the management of the South African marine and coastal environment. For example, Agenda 21 emphasises the well-recognised need for a comprehensive coastal zone management policy in South Africa. Agenda 21's call to improve the protection of existing reserves and establish additional reserves both along and off the coastline similarly accords with priorities for coastal and marine environmental protection in South Africa. Considerable attention is given in the text of Agenda 21 to the importance of protecting small-scale artisanal fisheries, an issue pertinent to South Africa since several traditional fishing communities have been displaced by large fishing conglomerates and apartheid legislation. Finally, Agenda 21 emphasises the crucial roles which NGOs and local communities have to play in effective management of the marine environment.

*13.5.6 The Clean World: managing chemicals and waste*¹³

Despite weak, non-committal language in several sections, Agenda 21 programmes regarding toxic chemicals, hazardous and radioactive wastes have far-reaching implications. Many of the principles and proposals embraced by Agenda 21 echo both those of the Council for Scientific and Industrial Research's (CSIR) recent report on hazardous waste management and ANC policy. These include commitments to waste minimisation and a cradle-to-grave approach to waste management; the adoption of the "polluter pays" principle; recycling, treatment and disposal of waste as close as possible to its place of origin; the need to integrate waste management policies into national planning; and the establishment of an information clearing house.

¹³ See Chapter 8 of this dissertation.

Requiring attention is the "right to know" principle endorsed by Agenda 21 and the need for a code of conduct for companies investing and operating in South Africa.

*13.5.7 The People's World: people participation and responsibility*¹⁴

The successful implementation of Agenda 21 programmes will depend upon the commitment and active participation of all social groups including women, youth, children, indigenous peoples and their communities, NGOs, trade unions, business and industry, local authorities, farmers and the scientific and technological community. Agenda 21 examines the role of each of these groups in a series of chapters.

Of all groups throughout the UNCED process, the women's lobby was the best organised and consequently the most effective. This is reflected in the strong emphasis on women throughout Agenda 21: the final text is considered to be a historical acknowledgement of the importance of women's contribution to environment and development and to decision-making. The growing importance of NGOs is also noteworthy. NGO involvement and cooperation throughout the UNCED process occurred on a scale unprecedented for UN conferences. Their role will be crucial in follow-up activities. Another precedent was set with the involvement of business and industry. Heavily criticised by NGOs for their "hijacking of UNCED", the Business Council for Sustainable Development and the International Chamber of Commerce played key roles in the UNCED preparatory process. Their involvement was largely associated with the failure of UNCED to strengthen international monitoring and regulation of the private sector.

Broad public participation and decentralised decision-making as advocated by Agenda 21 are highly relevant to South Africa, particularly in the light of past authoritarian approaches. However, for public participation to be truly representative, a climate of tolerance, accountability and cooperation will first need to be fostered. This should be accompanied by a mass-based environmental literacy programme. Agenda 21 recommendations concerning women are especially applicable in South Africa, a society

¹⁴ See Chapter 9 of this dissertation.

which has a history of gender discrimination. Black women in particular are one of the most exploited and poverty-stricken groups in the country. Equally important are the proposals of Agenda 21 concerning trade unions. Trade unions in South Africa could represent one of the most powerful allies of the environmental movement and could play a crucial role in monitoring industry and promoting socially responsible development. Agenda 21 recommendations present an enormous challenge for South African NGOs. Strengthening NGO input into government and UN policy will require expertise, consensus, credibility, cooperation, good organisation and - most importantly - the integration of development and environment NGOs.

In many respects, South Africa is well-placed to promote regional sustainable development initiatives. For example, as one of the few countries in Africa to have strong scientific and technological capacities, the relevant South African communities could play an important regional role. Business and industry are similarly well-placed to promote regional initiatives towards cleaner and more efficient production processes. However, this will require strengthening current private sector endeavours and accelerating the adoption of environmentally responsible production processes.

13.5.8 The Essential Means: financial, technological, institutional and legal mechanisms

a. Financial Resources and Mechanisms ¹⁵

Implementing Agenda 21 will cost \$600 billion per year between 1993-2000. International foreign aid from developed countries is anticipated to contribute \$125 billion annually. The remaining \$475 billion is expected to come from developing countries. Funding sources include a reaffirmed, albeit vague, commitment from developed countries to the target of 0.7% of Gross National Product for official development assistance to developing nations; other financial commitments from developed countries; a possible "Earth Increment" as part of the International Development Association's 10th replenishment; contributions from the Global Environmental Facility; debt relief for the poorest indebted countries; and a variety of

¹⁵ See Chapter 10 of this dissertation.

other funding sources. Financing arrangements constituted one of the major disappointments of UNCED. Little attention was given to innovative ways to generate financial resources and financial commitments from developed countries were meagre. Developing countries have further denounced UNCED financing arrangements for failing to rethink the concept of aid.

b. Transfer of Environmentally Sound Technology ¹⁶

Whilst Agenda 21 considers facilitating the access of developing nations to environmentally sound technology a major goal, it does nothing to ensure affordable terms for technology transfer. A second area of concern relates to the over-protection of intellectual property rights in the Agenda 21 text. This attempt to blend environmental concern and the profit motive could well prove inappropriate for developing countries, considering their lack of political, social and economic infrastructure to attract international technical cooperation and commercial investment.

c. International Institutional Arrangements ¹⁷

One of the most positive outcomes of UNCED was the provision of a comprehensive institutional package as well as a forum - the Sustainable Development Commission - to build consensus on areas for future negotiation and action. The Commission will play an important role in monitoring and reviewing progress on the implementation of Agenda 21, environmental conventions, and the integration of environment and development goals throughout the UN system. If vested with sufficient powers it could help to make financial institutions such as the World Bank and the International Monetary Fund (IMF) accountable for the environmental impacts of their lending. A further positive aspect of the institutional arrangements is the expanded and formalised role for NGOs in the work of the UN. This, together with the Earth Council - an independent NGO entity which will be set up in Costa Rica in 1993 to monitor compliance with Agenda 21 - is likely to focus international attention on non-compliers.

¹⁶ Ibid.

¹⁷ Ibid.

d. International Legal Instruments and Mechanisms ¹⁸

Agenda 21 is widely perceived to inadequately address the shortcomings of international environmental law. Positive features of the Agenda 21 text include provisions relating to more effective participation of developing countries in international law-making, and the non-binding initiative for governments to establish national reporting systems on the implementation of international legal instruments.

e. Implications for South Africa ¹⁹

Changing structures and relationships in South Africa present an ideal opportunity to promote sustainable development and infuse relevant aspects of Agenda 21 into an overall development strategy. At present, apartheid has resulted in an administrative and legislative structure which is top-down in approach, fragmented, polarised and inefficient. Existing links between environment and development authorities are often inadequate, and institution-building outside government has been stunted. However, South Africa is better placed than most other developing countries in having strong technological, scientific and management capacities.

One factor requiring careful consideration in a democratic South Africa is that of cooperation with international organisations, in particular the UN. Although there are valuable ways in which existing national organisations and institutions could liaise with UN agencies, this needs to be approached cautiously. International cooperation will be best effected from a strong national basis and it may be prudent to initially concentrate efforts here. Since international cooperation and development aid may also entail World Bank and IMF obligations, South Africa's needs and priorities must be judiciously assessed. The lack of financial commitment at UNCED indicates that South Africa's development strategies will need to be based on locally-generated resources rather than on foreign capital.

¹⁸ Ibid.

¹⁹ Ibid.

13.6 CONVENTIONS SIGNED AT RIO

*13.6.1 The Framework Convention on Climate Change*²⁰

The Framework Convention on Climate Change is widely regarded to be inadequate and toothless. This pertains particularly to the absence of binding commitments on greenhouse gas emissions. Given the real threats of climate change, the Convention reflects a glaring gap between agreement and commitment. Despite these shortcomings, the pact is the first international legal instrument to recognise that global warming is of planetary concern. Moreover, follow-up provisions are established in the Convention which will act as an important channel through which NGOs can lobby governments to strengthen commitments and fulfil the objective of the Convention. Since solutions to climate change are rooted in local development strategies, the implementation of the treaty is mainly up to national governments' willingness to put effective strategies in place.

As the Convention does not contain any binding commitments to reducing carbon dioxide (CO₂) emissions, there is little reason for South Africa not to ratify it. It is, however, unclear as to what South Africa's status would be as a signatory to the Convention. If assessed as a developing nation, South Africa would have to make its initial communication within three years of ratifying the treaty. This would include a national inventory of greenhouse gas emissions by sources and removals by sinks, and a general description of steps taken to implement the Convention. As a developing country, it would qualify for technical and financial support in compiling and communicating this information. If assessed as an industrialised country, South Africa would have to make these same communications within six months of ratifying the Convention. As an industrialised country, it would be required to prepare a detailed plan of action of policies and measures, aimed at reducing CO₂ emissions to 1990 levels by the end of the century.

²⁰ See Chapter 11 of this dissertation.

In South Africa, firm commitments to reducing CO₂ emissions are likely to be assessed against an increasing demand for energy among disadvantaged communities, and a heavy reliance on the use and export of coal for economic development. However, more energy is used per unit of economic output than in many other countries and energy policy has favoured intensive use rather than encouraging conservation and efficiency. To-date, a fraction of the government's budget has been allocated to renewable energy sources, despite the increasing acclaim of renewable energy technologies in rural areas.

13.6.2 *The Convention on Biological Diversity*²¹

The Biodiversity Convention, negotiated to conserve and manage biodiversity and establish rights regarding access to the resulting knowledge and technology, has succeeded on many counts. For the first time in history biodiversity has been popularised and there is consensus among nations on the need to conserve and sustainably use it. It is also the first time that the relationship between environment and development has been put into legal practice: environmental objectives have effectively been coupled to the need for economic development in developing countries.

Key weaknesses of the treaty include its exclusion of the world's gene banks and its failure to address the moral issue of patenting living organisms. Furthermore, biotechnology is promoted as a panacea with inadequate attention being given to associated risks. The treaty is weakened considerably by the exclusion of a global list of protected areas and species. Nonetheless, the Convention will be a useful tool to promote the conservation of biodiversity. Its success is likely to depend on the extent to which developing countries are paid to protect their resources and on the sincerity of individual governments.

Many of the treaty's required actions have already received attention in South Africa and there is little reason for South Africa not to ratify the Convention immediately. There is a clear need for a holistic biodiversity strategy in southern Africa

²¹ See Chapter 12 of this dissertation.

and the Convention could provide a framework from which to work. As regards biotechnology, the South African industry is in its infancy although there is enormous potential for growth. The equitable distribution of benefits certainly requires attention should products become commercialised. Also requiring attention is the need to demystify biotechnology and open up the issue to public scrutiny in South Africa.

13.7 CONCLUSION

UNCED failed on many accounts but, given its ambitious agenda, this should not come as a surprise. What has tended to be overlooked by the popular media are the successes of the Rio Conferences. First, if governments do what they are called on to do in UNCED documentation, the rate of environmental degradation will decrease. Second, there is no doubt that securing political commitment for these agreements has legitimised the connections between environment and development, placing the notion of sustainability firmly upon the international diplomatic agenda. Third, the Rio Conferences have succeeded in establishing broad intellectual consensus on what needs to be done to reverse environmental degradation and improve the livelihoods of poor people. Fourth, an enormous increase in public awareness has been stimulated through extensive media coverage of the issues. Fifth, new pathways have been opened for public participation in intergovernmental negotiations, allowing for increased cooperation and communication between governmental and non-governmental organisations. Sixth, the networks and agreements established between NGOs would in themselves warrant calling Rio a success. And finally, a clear role and responsibility has been created for all sectors of society. For the message, repeated over and over again at Rio is universal: real change is most likely to come from ordinary people. □

ANNEXES

Annex 1

LIST OF ISSUES AND AREAS OF INTEREST RELEVANT TO SOUTH AFRICA

ISSUES AND AREAS OF INTEREST IDENTIFIED BY ORGANISATIONS AT A PRE-UNCED WORKSHOP AS BEING RELEVANT TO SOUTH AFRICA

Sustainable Development

- Case studies
- New economic paradigms
- Environmental ethics

Ecopolitics

- The North/South debate and its implications for South Africa

Conservation

- Small-scale, subsistence utilisation of marine resources
- Wetland rehabilitation
- Conservation strategies regarding land use
- Biodiversity
- Strategies to reduce extinctions
- Strategies for water conservation
- Guidelines for setting up projects which integrate environment and development

Community Involvement in Managing Resources

- Public participation and the decision-making process
- Case studies and strategies for involving local communities in managing resources
- Communal tenure vs private ownership in agriculture and animal husbandry, especially in arid lands

Ecotourism

- Case studies

Urban Environments

- Strategies for sustainable urban development
- Housing issues and the environment
- Guidelines for a "Green City"
- Bioregionalism
- Strategies for sustainable industrial development
- Energy provision
- Environmentally friendly transport strategies

Networking

- Networking with environmental groups in squatter communities
- Youth networks
- International networks and databases
- Networking with NGOs from Eastern Europe

Environmental Education

- Environmental education, technology training and youth
- Resources and strategies to integrate environmental education in the broader education system

Non-Governmental Organisations

- The growth and development of environmental NGOs

Culture and the Environment

- Theatre as a platform for environmental education and discussion

Religion

- Strategies for religious groups to take environmental issues forward

Media

- Role of the media in promoting sustainable development

Annex 2

THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT

Principle 1: Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.

Principle 2: States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

Principle 3: The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.

Principle 4: In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.

Principle 5: All States and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world.

Principle 6: The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.

Principle 7: States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

Principle 8: To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies.

Principle 9: States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of

scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies.

Principle 10: Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

Principle 11: States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

Principle 12: States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus.

Principle 13: States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.

Principle 14: States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health.

Principle 15: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

Principle 16: National authorities shall endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

Principle 17: Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority.

Principle 18: States shall immediately notify other States of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States so afflicted.

Principle 19: States shall provide prior and timely notification and relevant information to potentially affected States on activities that may have a significant adverse transboundary environmental effect and shall consult with those States at an early stage and in good faith.

Principle 20: Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development.

Principle 21: The creativity, ideals and courage of the youth of the world should be mobilized to forge a global partnership in order to achieve sustainable development and ensure a better future for all.

Principle 22: Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognise and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

Principle 23: The environment and natural resources of people under oppression, domination and occupation shall be protected.

Principle 24: Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary.

Principle 25: Peace, development and environmental protection are interdependent and indivisible.

Principle 26: States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the Charter of the United Nations.

Principle 27: States and people shall cooperate in good faith and in a spirit of partnership in the fulfilment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

Annex 3

THE NON-GOVERNMENTAL EARTH CHARTER

PREPARED BY THE NON-GOVERNMENTAL ORGANISATIONS
GATHERED TOGETHER IN RIO DE JANEIRO

JUNE 3-14, 1992

PREAMBLE

*We are Earth, the people, plants and animals
rains and oceans
breath of the forest and flow of the sea.*

We honour Earth as the home of all living things.

We cherish Earth's beauty and diversity of life.

We welcome Earth's ability to renew as being the basis of all life.

*We recognise the special place of Earth's Indigenous Peoples,
their territories, their customs
and their unique relationship to Earth.*

*We are appalled at the human suffering, poverty and damage to Earth
caused by inequality of power.*

*We accept a shared responsibility to protect and restore Earth
and to allow wise and equitable use of resources
so as to achieve an ecological balance
and new social, economic and spiritual values.*

In all our diversity we are one.

Our common home is increasingly threatened.

*We thus commit ourselves to the following principles,
noting at all times the particular needs
of women, indigenous peoples, the South, the disabled
and all those who are disadvantaged.*

PRINCIPLES

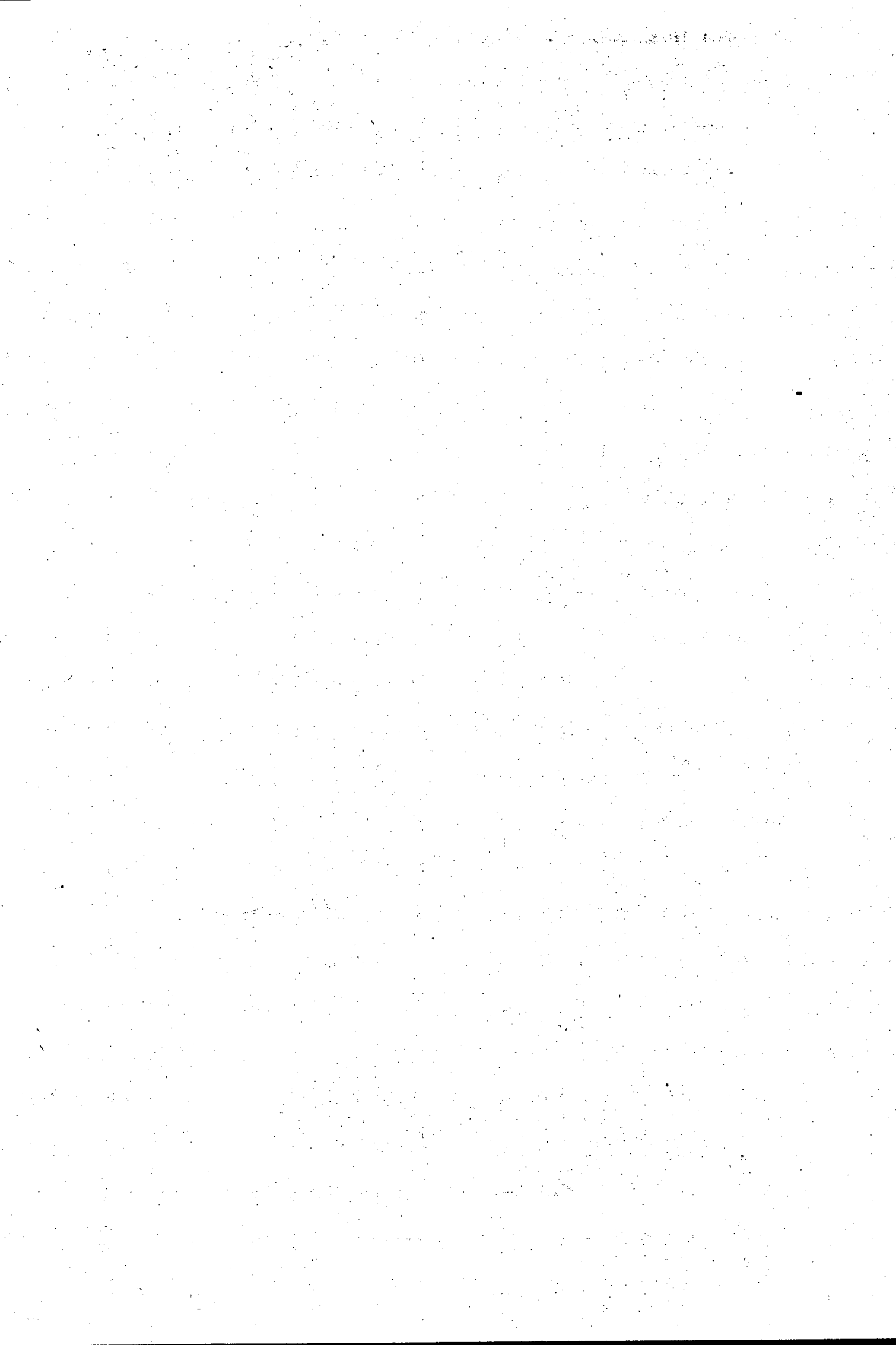
1. We agree to respect, encourage, protect and restore Earth's ecosystems to ensure biological and cultural diversity.
2. We recognise our diversity and our common partnership. We respect all cultures and affirm the rights of all people to basic environmental needs.
3. Poverty affects us all. We agree to alter unsustainable patterns of production and consumption to ensure the eradication of poverty and to end the abuse of Earth. This must include a recognition of the role of debt and financial flows from the South to the North and opulence and corruption as primary causes. We shall emphasise and improve the endogenous capacity for technology creation and development. Attempts to eradicate poverty should not be a mandate to abuse the environment and attempts to protect or restore the environment should not ignore basic human needs.
4. We recognise that national barriers do not generally conform to Earth's ecological realities. National sovereignty does not mean sanctuary from our collective responsibility to protect and restore Earth's ecosystems. Trade practices and transnational corporations must not cause environmental degradation and should be controlled in order to achieve social justice, equitable trade and solidarity with ecological principles.
5. We reject the build up and use of military force and the use of economic pressure as a means of resolving conflict. We commit ourselves to pursue genuine peace, which is not merely the absence of war but includes the eradication of poverty, the promotion of social justice and economic, spiritual, cultural and ecological well-being.
6. We agree to ensure that decision-making processes and their criteria are clearly defined, transparent, explicit, accessible and equitable. Those whose decisions or activities may affect the environment must first prove the absence of harm. Those likely to be affected, particularly populations in the South and those in subjugation within existing States, should have free access to information and effectively participate in the decision-making processes.
7. States, institutions, corporations and peoples are unequal in their contribution to environmental harm, experience of ecological degradation and ability to respond to environmental destruction. While all are responsible for improving environmental quality, those who have expropriated or consumed the majority of the Earth's resources or who continue to do so must cease such expropriation or reduce such consumption and must bear the costs of ecological restoration and protection by providing the majority of financial and technological resources.
8. Women constitute over half of Earth's human population. They are a powerful source for change. They contribute more than half the effort to human welfare. Men and women agree that women's status in decision-making and social

processes must equitably reflect their contribution. We must shift from a society dominated by men to one which more accurately reflects the valued contributions of men and women to human and ecological welfare.

We have come to realise that the threats to the biosphere which sustains all life on Earth have increased in rate, magnitude and scale to such an extent that inaction would be negligent.

EARTH CHARTER ACTION PLAN

1. We shall adopt the spirit and principles of the Earth Charter at the individual level and through concrete actions within our Non-Governmental Organisations.
2. We will use existing mechanisms and/or create an international network of the signatories hereto to disseminate the Earth Charter as principles for action at the local, national and global levels.
3. The Earth Charter shall be translated into all the languages of the Earth.
4. We shall commit ourselves to the preparation of "OBJECTIVE 1995" by which the United Nations will celebrate its 50th anniversary at which time we want them to adopt this Earth Charter.
5. Non-Governmental Organisations world wide shall initiate a combined campaign "WE ARE EARTH" through to 1995 and the adoption of this Earth Charter by the United Nations.
6. Every individual, organisation, corporation and state shall dedicate a percentage of their operating budget and their profit as an "Earth Percentage" dedicated to the restoration, protection and management of Earth's ecosystems and the promotion of equitable development.
7. We call for a second Global Forum to be held in 1999 to evaluate and reaffirm our commitment to the relationships made, the accomplishments achieved and the goals sought at this "1992 Global Forum".



Annex 4

NON-GOVERNMENTAL ALTERNATIVE TREATIES

TREATIES ARISING FROM THE INTERNATIONAL FORUM OF NGOS AND SOCIAL MOVEMENTS RIO DE JANEIRO

JUNE 1992

NGO Cooperation and Institution Building

- NGO Earth Charter
- Treaty of the People of the Americas
- Process to Prepare a Code of Conduct for NGOs
- Rio Framework Treaty on NGO Global Decision Making
- Treaty on Technology Bank
- Treaty for NGO Cooperation and Sharing of Resources
- Communication, Information, Media and Networking Treaty

Alternative Economic Issues

- Treaty on Alternative Economic Models
- NGOs treaty on TNCs: Democratic Regulation of TNC conduct
- Alternative Treaty on Trade and Sustainable Development
- NGO Debt Treaty

Major Environmental Issues

- Citizens Commitment on Biodiversity
- Alternative Non-Governmental Agreement on Climate Change
- Global Forum '92 NGO treaty on Energy
- Treaty on Forests
- Treaty on Waste

Food Production

- NGO Sustainable Agriculture Treaty
- NGO Food Security Treaty
- NGO Fresh Water Treaty
- Fisheries Treaty

Cross-sectoral issues

- Treaty on Urbanisation: Towards Just, Democratic and Sustainable Cities, Towns and Villages
- NGO Treaty on Militarism, the Environment and Development
- International Treaty between NGOs and Indigenous peoples
- Youth treaty
- Treaty on Environmental Education for Sustainable Societies and Global Responsibility
- Draft Treaty Against Racism
- NGO treaty on Population, Environment and Development
- Treaty on Consumption and Lifestyle

ANNEX 5

LIST OF ADDRESSES

United Nations Conference on
Environment and Development
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P.O. Box 80
CH-1231 Conches
Switzerland
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FAX (41-22) 789-3536

GEF/Technical Advisory Division
United Nations Development
Programme
One United Nations Plaza
New York, NY 10017
USA
Telephone (212) 906-5044
FAX (212) 906-5365

GEF/UNEP
Clearing House
P.O. Box 30552
Nairobi
Kenya
Telephone (254-2) 333-930
FAX (254-2) 226-886

GEF Administrator
Environment Department
World Bank
Washington, DC 20433
USA
Telephone (202) 473-1053
FAX (202) 477-0551

The Organising Committee of the Earth
Council
Casilla Postal
San Jose
Costa Rica
Telephone (506) 233-418
FAX (506) 552-197

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