



THE WILDLIFE SOCIETY OF SOUTHERN AFRICA
DIE NATUURLEWEVERENIGING VAN SUIDER AFRIKA

Reg. No. 05/04658/08

(Incorporated Association not for gain)
(Ingeelyde Vereniging sonder winsoogmerk)

FRN 01 1000 78 000 3

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NATIONAL OFFICE /NASIONALE KANTOOR
"Northwards"
21 Rockridge Road/Weg
Parktown 2193, Johannesburg
☒ 44189, Linden 2104
South Africa/Suid Afrika
☎ (011) 482-1670
Fax (011) 482-2436

21 September 1993

The Secretary
Constitutional Committee
P O Box 307
ISANDO
1600

Dear Sir

I have been directed by the Wildlife Society of Southern Africa to submit the following representations to your Technical Committee for inclusion in the Interim Constitution for the Republic of South Africa presently under consideration by your committee.

The Society is of the view that such constitution should include not only a fundamental human right relating to environmental conservation and protection but also directive principles to guide the State in its use and management of the environment. The Society further considers that the draft clauses appearing in previous drafts of the proposed Interim Constitution, the last of which in our possession is contained in clause 30 of the Combined Reports of your committee dated 10th August 1993, have been too anthropocentric in that the emphasis has been placed only on human health and the "health" of the environment itself has not been considered.

It is now accepted worldwide that human welfare and ultimately survival is dependent upon a sound and properly conserved environment. Reference in this regard may be made inter alia to the publication "Caring for the Earth", published by the World Conservation Union (IUCN/UNEP/WWF). As background I enclose under separate cover a locally published transcription of this document where the key principles and recommendations are presented in a South African context.

Our Society accordingly proposes, for the consideration of your committee, the inclusion of the following fundamental right and directive principles in the Interim Constitution.

1. Fundamental Right

Every person has the right to a satisfactory, ecologically sustainable, and healthy environment, and has the duty to protect it.

2. Directive Principles

2.1 The State shall ensure that renewable natural resources are used by the State, corporations and individuals in a manner which :

2.1.1 benefits both present and future generations;

2.1.2 promotes the ideal of sustainable development;

2.1.3 maintains ecosystems and related ecological processes, in particular those important for food production, health and other aspects of human welfare and development;

2.1.4 maintains biological diversity by ensuring the natural survival of all species of fauna and flora;

2.1.5 takes into account the environmental impact of such use, preferably by a scientifically based method of environmental evaluation; and

2.1.6 enhances the conservation of areas of cultural, historic and natural value.

2.2 The State shall, insofar as waste management and pollution control are concerned, actively promote :

2.2.1 the treatment of waste at source;

2.2.2 the reduction, re-use and recycling of waste; and

2.2.3 the promotion of clean technologies.

Please place this before your committee for its consideration. I have refrained from including in this letter any extensive motivation for the proposals. Should any such motivation be required please advise me and I will arrange for the preparation of a memorandum. Alternatively, if your committee would prefer, I will arrange for a delegation from our Society to address the committee on such motivation.

It is my understanding that the Technical Committee is at present not inclined to support the need for a set of Directive Principles relevant to fundamental rights statements. The Wildlife Society firmly believes that in the complex area of rights relating to the environment, this is not a valid view. We urge you therefore to consider ways and means to include these principles in some way so that a fuller effect can be given to the right which, out of necessity, has to be very briefly stated.

The Society further strongly supports the draft clauses 23 and 24 in the Combined Reports dated 10th August 1993 referred to above, relating to access to information and reasons for administrative decisions. The Society further strongly supports draft clauses 7 and 22 relating to Locus Standi for individuals and associations. Without these clauses the right to a sound and healthy environment enshrined in this submission would be rendered virtually worthless.

I enclose a brief description of the Wildlife Society so that you may gauge the level of support that this submission represents.

Yours sincerely

A A Ferrar

for T I STEENKAMP
PRESIDENT



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THIS IS THE WILDLIFE SOCIETY

The Wildlife Society (WLS) is South Africa's largest and oldest voluntary conservation organisation, based on personal and group membership. It has occupied a leadership position for over 65 years as an authoritative, scientifically-based body, representing the environmental concerns of all South Africans.

It is a democratic and truly independent organisation functioning at the community level throughout the country. It emphasises personal involvement in conservation and environmental education in both urban and rural areas. It is a needs-driven, growth-orientated Society, working through public advocacy based on reliable information. In keeping with its founding membership of the IUCN (World Conservation Union) the WLS works towards achieving more sustainable relationships between people and their environment.

The WLS employs a team of over 30 professional staff in all provinces, primarily in the fields of environmental education and conservation ecology. It is supported by 25 000 paid up members organised into 72 centres countrywide.

The WLS plays a key role in representing the environmental interests of its members and in public advocacy and lobbying at all levels. It uses environmental issues to help the democratisation process in planning and decision making.

The WLS promotes environmentally sound ethics and lifestyles through public education and through individual and community action. The conservation of wildlife and biodiversity is a high priority, especially in protected areas, and the Society plays a vital watchdog role in all aspects of environmental degradation and threat.

The WLS has a holistic perspective of the environment and is collaborative and consensus-seeking in its style. It is assertive but restrained in pursuing its objectives and depends on logical scientific argument to develop its policies. Clearly articulated policies have been developed on over forty environmental issues from Aids to Whaling, which are available to the public on request.

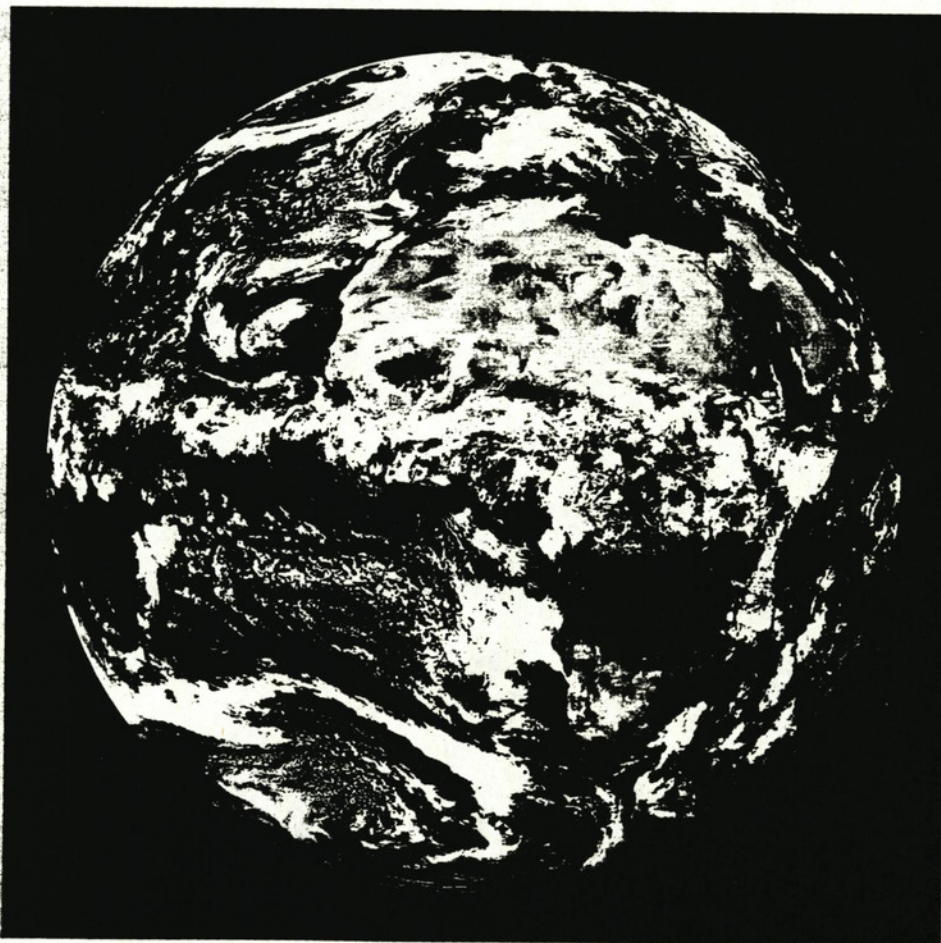
AAF/29 July 1993

CARING FOR THE EARTH

SOUTH AFRICA

A strategy for sustainable living

BY JOHN YELD



CARING FOR THE EARTH SOUTH AFRICA

A strategy for sustainable living

By John Yeld



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in partnership with the World Conservation Union (IUCN)

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PREFACE

THE publication of *Caring for the Earth – South Africa* is a significant step in the follow-up to *Caring for the Earth*, the parent document, which was published in 1991 by IUCN, UNEP and WWF. *Caring for the Earth* is a global strategy for sustainable living. The principles that it explains are universal, but they need to be interpreted in the light of local and national conditions. Some of the actions that it recommends can be followed up anywhere, but others will need to be adapted in different ways to different locations.

Indeed, the full value of *Caring for the Earth* will be realised only if it is seen as a pattern that must be cut to fit local circumstances, a basis for determining what must be done on the ground where it counts. Only to the extent that this happens, will it be a real success. That is why I am so pleased to welcome the publication of *Caring for the Earth – South Africa*, one of the first works of its kind.

South Africa offers the opportunity to subject the strategy of caring to a crucial test. Once enjoying a magnificent and diverse environment, South Africans must now undertake the difficult tasks of rehabilitating those ecosystems that have been seriously degraded and conserving those that remain healthy and productive. Facing in addition the need to overcome the crucial social problems that are the legacy of apartheid and economic discrimination, securing sustainable living will call for exceptional levels of understanding, tolerance and patience.

The fact that *Caring for the Earth – South Africa* recognizes the scope, scale and character of these issues and establishes an ethical basis for dealing with them is extremely encouraging. The need now is to ensure that there are opportunities for all South Africans to take the next steps together. □

David A Munro, Project Director, CARING FOR THE EARTH

“*South Africans must now undertake the difficult tasks of rehabilitating those ecosystems that have been seriously degraded and conserving those that remain healthy and productive.*”

EXECUTIVE SUMMARY

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ABOVE

The 1980s witnessed increasing global environmental problems, including atmospheric pollution and ozone depletion.

ing hundreds of millions of people around the globe.

While the 1980s saw some progress in this regard, it also witnessed huge setbacks through increased environmental problems – greater global pollution, ozone depletion and rainforest losses, for example – and, in many areas, worsening human poverty with its associated environmental destruction.

In 1991, the three international environmental bodies again joined resources to produce *Caring for the Earth: A Strategy for Sustainable Living*. This strategy offers an effective escape from the global logjam of environmental chaos and human misery by applying the philosophy of sustainable development: “Improving the quality of human life while living within the carrying capacity of supporting ecosystems”. This involves eliminating human poverty and hardship, reducing unnecessary and wasteful consumption patterns, and the wise management of ecosystems and ecological processes like the formation of clean air, water and soil on which all human life ultimately depends.

Caring for the Earth emphasises the need for an ethical underpinning of such sustainable development, and draws attention to the need to

MORE than a decade ago, three of the world's most influential environmental agencies – the World Conservation Union (IUCN), World Wide Fund for Nature (WWF) and the United Nations Environment Programme (UNEP) – published the *World Conservation Strategy* and warned that humanity had no future unless nature and natural resources were utilised wisely – or, more popularly, conserved. They also emphasised that successful conservation depended on sensible development to alleviate the poverty and misery afflict-

empower people, to enable them to make their own environmentally sound decisions. Its ultimate goal is a global sustainable society, which can be achieved by applying the following nine principles for sustainable living.

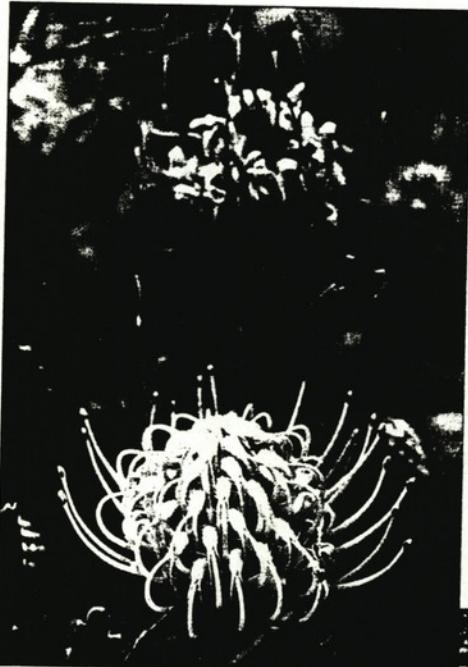
- ◆ Respect and care for the community of life
- ◆ Improve the quality of life
- ◆ Conserve the Earth's vitality and diversity
- ◆ Minimise the depletion of non-renewable resources
- ◆ Keep within the Earth's carrying capacity
- ◆ Change personal attitudes and practices
- ◆ Enable communities to care for their own environments
- ◆ Provide a national framework for integrating development and conservation
- ◆ Create a global alliance.

SOUTH AFRICA has its own unique history of exploitation of natural resources and its own political framework. Therefore, to achieve a sustainable society acceptable to the majority of its people, this country will have to implement these nine principles in its own particular way. This document sets out a suggested series of priority actions across a broad spectrum of human activities – including land ownership and property management, energy provision, the management of water resources, agriculture and forestry, mining, the exploitation of marine resources and the coastal zone, commerce and industry, population development and education, urbanisation, individual and group lifestyles, and controlling the spread of alien invasive species – to achieve this goal. Responsibility for such actions must be shared between the central government and regional and local authorities, commerce and industry, community groups, non-government conservation organisations, and families and individuals.

Environmental, political, social and economic issues are inextricably bound up with each other. Because of this, South Africa's political negotiations must include environmental issues, so that the universally accepted ethic for sustainable living can be enshrined in a new constitution and reflected in all subsequent legislation. Also, South Africa must, as a matter of urgency, develop a comprehensive, cross-sectoral national strategy for sustainable living.

The philosophy of sustainable development offers this country the best prospects for a new, just, socially equitable and environmentally sound society; it shows the way forward by which the numerous and varied scars of the past can be healed and the future social and environmental health of the nation can be assured. □

“
*The philosophy of
sustainable development
offers this country the best
prospects for a new, just,
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environmentally sound
society.*”



JOHN YELD



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INTRODUCTION

Why we need to care for the Earth

EVER since the very first living creature emerged miraculously from Earth's primaeval gaseous cloak millions of years ago, the planet has maintained a capacity to support life in a myriad of ever-changing forms. These forms range from the tiniest, most primitive micro-organisms drifting in water or air, through a host of increasingly complex plant and animal species so vast in number and design that many have yet to be described, to the mightiest and most majestic of all: like the huge blue whale, the towering yellowwoods of the Tsitsikamma forest, the dignified and sociable African elephant.

Of all these countless species that have evolved during Earth's long history, *Homo sapiens* has undoubtedly been among the most successful. In a mere blink of geological time, the human race has progressed from a relatively small, highly vulnerable group to a huge, confident and unassailable mass of people who make their presence felt in every corner of the globe. No part of the natural world remains untouched; no major ecosystems are now unaffected by human behaviour.

It is this seemingly infinite and unbridled capacity of people to effect change that has made it so vital to care for the Earth as the 21st century looms. For the scale of change people have wrought has been massive; the effect on their environments has been comprehensive and often permanent.

Yet, however unlikely this may seem to millions of today's city dwellers, humanity still remains intimately connected to nature and natural processes. Despite impressive technological advances, people remain totally dependent on Earth's capacity to sustain them with its natural life-support systems: air, water, soil. For human survival, the fertility and productivity of the planet must be assured.

To care for the Earth means two things: helping people everywhere achieve lives as long, healthy and

“However unlikely this may seem to millions of today's city dwellers, humanity still remains intimately connected to nature and natural processes.”



JOHN YELD



JOHN YELD

INTRODUCTION

“
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condemn the majority of
them to an even more
precarious and poverty-
stricken existence than that
endured by millions of
people today.”

fulfilling as possible, and at the same time conserving for all posterity the full range and complexity of life on Earth. By implication, that encompasses both conservation and development: conservation, to protect all those life-forms (including humankind) and the complex ecological processes which allow them to thrive, and development, which provides the material means for humans to prosper and grow.

In reality, of course, “conservation” and “development” are not mutually exclusive. Rather, they are flexible indicators on a scale which ranges from the complete protection of untransformed ecosystems on the one hand, to a state of total transformation through human actions on the other. Between these two extremes, it is possible to “conserve” through allowing “development”, if one is utilising a particular natural resource in a practical yet wise manner. Providing sensitively designed tourist facilities in game parks or nature reserves and using the resulting income to manage these protected areas wisely is an obvious case in point. However, it is useful to distinguish in broad terms between “conservation” and “development”, and these words are used throughout this text in a general, rather than in a particular, sense.

The strategy of *Caring for the Earth* sets out to demonstrate that this dual goal of conservation and development is justifiable, reasonable and – above all – achievable, provided certain basic requirements are met.

Firstly, there has to be a widespread and deeply-held commitment to a new ethic: the ethic of sustainable living. Secondly, there must be certain constraints on development, if we are to ensure that the material benefits that flow from it will be enjoyed by more than just one or two generations. Successive generations must not be left with an ecological debt that will condemn the majority of them to an even more precarious and poverty-stricken existence than that endured by millions of people today, and which will inevitably threaten the security of the minority who have attained well-being.

What do we mean by “sustainable”?

THE PHRASE “sustainable development” originated in German forest management practices during the 19th century but was popularised in the 1980s. In theory, it means development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This was the definition used by the United Nations-sponsored World Commission on Environment and Development, chaired by Norwegian prime minister Mrs Gro Harlem Brundtland, in its influential report of 1987, *Our Common Future*.

It is not possible to give an unequivocal definition of “sustainable development”. In the real world in which we live, there will always be choices to be made and trade-offs to be considered as we strive to optimise potential benefits while minimising costs and negative impacts. What sustainable development does imply, however, is the wise, inter-generational use

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of natural resources. Also, it emphasises that the international goal of conservation cannot be achieved without development to alleviate the poverty and misery of hundreds of millions of people across the globe. Development is essential to raise living standards, to allow people to reach their human potential, to enjoy lives of dignity, and to ensure the welfare of present and future generations.

But clearly, such development has to be responsible. It must be directed and controlled, taking full account of the needs of the present and all future generations. It must go hand-in-hand with conservation, allowing the fullest co-existence between humans and the rest of nature, of which we are an integral part.

Achieving sustainable development, therefore, is dependent on the notion of *Caring for the Earth*. This means protecting and safeguarding the fertility and productivity of our planet, which can be achieved by meeting three basic objectives:

- ◆ Maintaining essential ecological processes and life-support systems;
- ◆ Preserving genetic diversity; and
- ◆ Using any natural resources or ecosystems sustainably or, where this is not possible in the case of non-renewable resources, wisely.

We depend on the resources of the Earth to sustain our lives – from the most basic requirements such as air, water and food, through to the materials we use for shelter, transport, work opportunities and recreation. Some of these resources – like minerals and fossil fuels – are, in practical terms, finite and hence non-renewable. Their formation takes place over geological time spans and they will eventually run out if we continue exploiting them.

Most of the Earth's resources, however, are infinitely renewable, although only under certain strict conditions. They cannot be stressed beyond certain limits; cannot be reduced to less than certain critical levels or consumed excessively within too short a period of time, at a rate faster than their capacity to regenerate or reproduce themselves. They must be utilised sustainably if humans are to continue reaping their benefits.

If an activity is sustainable, it means – again in practical terms – that it can continue forever. Of course, there are no guarantees in this regard, for extinctions are an integral part of the natural order, and many factors are either unknown to us today or have as yet unpredictable consequences.

In 1991, three leading environmental agencies – the World Conservation Union (IUCN), World Wide Fund for Nature (WWF) and the United Nations Environment Programme (UNEP) – combined forces to produce *Caring for the Earth: A Strategy for*

BELOW
Urban influx in Maritzburg. The conservation goal cannot be achieved without development to alleviate poverty.



JOHN HANKS

INTRODUCTION

Sustainable Living as an effective blueprint for a new way of life to break the logjam that was causing environmental chaos throughout the world.

In this report, sustainable development is defined as "improving the quality of human life while living within the carrying capacity of supporting ecosystems". By implication, this means that ecosystems will have to be kept as undisturbed as possible, so that successive generations can also utilise them to improve their quality of life.

It follows then that a "sustainable economy" is the product of sustainable development. Such an economy can continue to develop – not through the old pattern of growth through an ever-increasing consumption of natural resources, but through improvements in human knowledge, better organisation, less waste, improved technical efficiency and the application of wise investment decisions. A sustainable economy does not exploit the natural resource base, from which all wealth on Earth ultimately derives, beyond its capacity to regenerate.

The ultimate goal of *Caring for the Earth* is a sustainable society, which can be achieved by applying the following nine principles for sustainable living:

- ❖ Respect and care for the community of life;
- ❖ Improve the quality of life;
- ❖ Conserve the Earth's vitality and diversity;
- ❖ Minimise the depletion of non-renewable resources;
- ❖ Keep within the Earth's carrying capacity;
- ❖ Change personal attitudes and practices;
- ❖ Enable communities to care for their own environments;
- ❖ Provide a national framework for integrating development and conservation;
- ❖ Create a global alliance.

The South African Context

SOUTH AFRICA is a unique country with unique problems. It has a developed world component which has been responsible for some of the worst environmental degradation on record, such as air pollution levels in parts of the eastern Transvaal which – arguably – match or even exceed the worst in industrial eastern Europe. Proportionately, taking income and population into account, South Africa is the world's third highest emitter of carbon dioxide. It also has a developing world component which, mainly because of the appalling heritage of former political policies, has also caused huge environmental destruction – like soil erosion in KwaZulu, Transkei and many other areas, and the loss of vegetation in areas like Ciskei through overcrowding and overstocking.

South Africa has a record unique in Africa for protecting its wildlife resources. It has recreated its decimated large mammal heritage and, overall, is universally acknowledged and admired for the sound protection of many of its natural and wilderness areas (although such protection has sometimes been practised in an autocratic manner that ignored the inter-

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INTRODUCTION

ests of local communities). The Kruger National Park, Lake St Lucia, the Kogelberg and other protected areas are of international significance.

Yet this nation has also allowed huge tracts of its land and numerous of its precious ecosystems to be damaged and destroyed. For example, in the Tugela basin in Natal, more than 90 per cent of the original wetland has been destroyed. The quagga is extinct and the wattled crane could soon follow. Each year during the rainy season, millions of tons of topsoil bleed from badly managed productive areas, stripping their potential. Overall, the capacity of the South African environment to support both human and other life has been greatly diminished.

"All changed, changed utterly", the poet WB Yeats wrote of his beloved Ireland in 1916. He might well have been referring to South Africa in 1990, when President FW de Klerk set the country on a changed course. South Africa now stands on the threshold of a new century and of a more just and equitable future for all its people. But to achieve that future will mean huge new demands on limited natural resources.

Widespread poverty – often chronic poverty – will have to be eliminated, for this is one side of the coin of environmental destruction in South Africa. In many parts of the country, impoverished and over-crowded communities are battling to survive. In such circumstances, environmental ethics are often irrelevant and conservation concerns a perceived superfluous luxury in the struggle for survival. Metaphorically – and sometimes in reality – people are forced to eat the seedcorn of their next year's crop. Degradation is seldom deliberate but, eventually and inevitably, an increasing number of humans in a limited area exacts an environmental toll. Woodlands, grasslands and the soil are destroyed, and water sources polluted. Ironically, people in these circumstances are damaging or destroying the very fabric on which they depend for their survival.

The flip side of this same coin of environmental destruction are those extravagant, wasteful lifestyles that are not sustainable. The demands of such lifestyles also cause widespread pollution and waste resources: huge state subsidies are squandered by agricultural communities; municipal landfill sites are full of discarded packaging and the other modern flotsam and jetsam of a throw-away society; precious water, purified to exacting drinking standards at great expense, runs to waste on wide expanses of exotic suburban lawn. Greed, over-consumption and corruption are widespread, and have become, if not morally acceptable, then at least no longer deserving of censure in some sectors of the community.

Under this twin onslaught of poverty and excess, South Africa's natural resource base is crumbling and its biological diversity dwindling. The devastating long-term effect of environmental neglect is a bankrupt nation with little hope of ecological and economic recovery. South Africa is not in this position yet; indeed, one of the major problems is that no-one can say with certainty just how close we may be. But what is certain is that we are well into debit, and the time has arrived for a critical audit. *Caring for the Earth* outlines the appropriate auditing process we should apply. □

“The devastating long-term effect of environmental neglect is a bankrupt nation with little hope of ecological and economic recovery.”

BUILDING BLOCKS

Principles for sustainable living

“All life on Earth is part of one great inter-dependent system; disturbing any section can affect the whole.”

Much previous and current development, both globally and in South Africa, has failed. Not only has it met human needs only partially – and then often at the expense of other humans – but it has also destroyed or degraded its resource base. What we need is development that is both people-centred, which concentrates on maximising improvements in the human condition, and that is at the same time conservation-based, so that the variety, vitality, diversity and productivity of nature is maintained.

Such development will enable us to build a sustainable, more equitable and just society. It may seem visionary or idealistic, but it is attainable, provided we accept the nine principles as the philosophical basis for a new way of living, and devise effective policies to give practical effect to those principles.

PRINCIPLE 1

Respect and care for the community of life

THIS fundamental principle provides the ethical base for the other eight principles which follow, and reflects each individual's duty to care for other people and other forms of life. “No man is an island, entire in himself,” wrote John Donne in the 16th century. All life on Earth is part of one great inter-dependent system; disturbing any section can affect the whole.

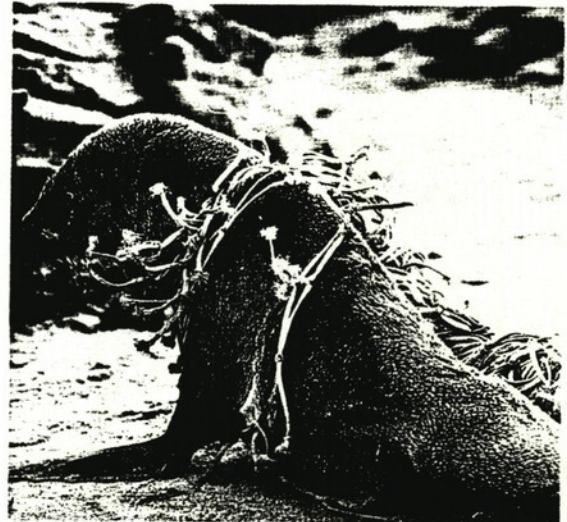
The natural world is increasingly dominated by human behaviour. It is a matter of both ethics and practical good sense to manage development so that it does not threaten the survival of other plant or animal species or eliminate their habitats, since our survival depends on the use of many of these species. But, in terms of this principle, even those species which do not appear to benefit human societies directly must be treated with respect and accorded the right to exist. Nature has to be cared for in its own right, and not just as a means of satisfying human needs. People must understand and accept the consequences of being part of the great community of life, and become conscious of the full effects of all their decisions.

Human rights are the building blocks of democracy. Every human being should be entitled to the same fundamental rights: to life, liberty and security; to freedom of expression, thought, religion, and education;

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to peaceful assembly and association. Those rights, expressed in one form or another, must be built into a new constitution for a democratic South Africa. But the ethics of democracy imply that rights also carry responsibilities – including responsibility to nature. So human development should not threaten the integrity of nature or the survival of other species. People must treat all other living beings decently, protect them from cruelty, avoid causing them suffering and halt unnecessary killing and destruction.



SAWF

**RESPECT FOR THE COMMUNITY OF LIFE
PRIORITY ACTIONS**

- South Africa's political negotiations must include environmental issues. A universally acceptable ethic for sustainable living that defines rights and responsibilities must be enshrined in any new constitution that is negotiated, and must also be reflected in all subsequent legislation.
- South Africa must develop a comprehensive, cross-sectoral national strategy for sustainable living as a matter of urgency.
- South Africa should become a founder member of the United Nations-proposed world organisation – as yet unnamed but similar in structure to Amnesty International – to monitor the implementation of a world ethic for sustainable living, and help prevent and combat serious breaches in its observation.
- All sectors of the South African community – including organised religious groups, teachers, economists, trade unionists and politicians – should see how they can contribute to developing the broad philosophy of the world ethic for living sustainably.
- Any proposals to harvest wild animals for profit – particularly where alternative, non-lethal methods of exploitation such as eco-tourism exist – must first be subjected to serious cost-benefit analyses and broad public debate, within the ambit of this first principle for sustainable living. □

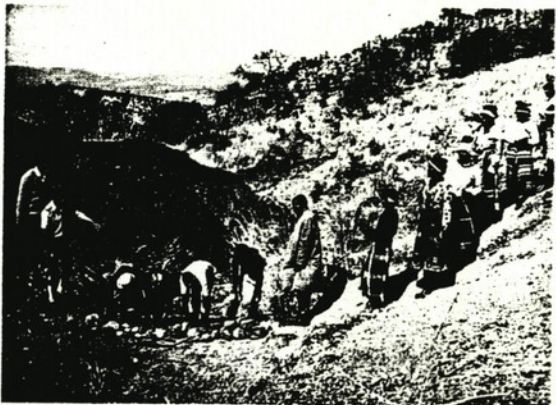
ABOVE
A Cape fur seal pup entangled in discarded fishing net.

RIGHT
Leading by example: Zulu King Goodwill Zwelithini supports a Green Trust tree planting project.

BELOW
An anti-erosion project in Kwa-Zulu.



LOUISE GUBB



SAWF

globally and in human needs only for humans – but a base. What we need is a condition, a variety, vital

more equitable basis for a political effect to

of life

other eight to care for the earth is part of an affect the

behaviour. It is development of species or of many of which do created with and for its needs. People of the great of all their

every human life, liberty education;

IMPROVING THE QUALITY OF LIFE
PRIORITY ACTIONS

- Services that promote a long and healthy life – such as electrification, complete immunisation programmes, adequate housing, access to clean water and sanitation facilities, and anti-malnutrition projects – must be implemented, strengthened or extended at both central and local government level, depending on their current status.
- Continuous action must be taken to promote development by private and state initiatives, and to attract increased foreign investment, although all investment proposals likely to impact on the natural environment must be subjected to full Integrated Environmental Management procedures.
- There must be universal primary schooling for all children, with a clear timetable to extend this to secondary education. Adult literacy programmes – particularly for women – must be supported and extended.
- South Africa must declare its willingness to be an integral member of a new world order, and to help negotiate and develop international agreements that outlaw military action – particularly deliberate damage to the environment and the use of any chemical, biological or nuclear weapons.
- Military expenditure must be reduced significantly, with investment redirected towards social programmes that improve the quality of life. Arms control and non-aggression agreements should be negotiated with neighbouring states.
- A significant proportion of military personnel, vehicles and equipment and military skills should be redeployed for conservation and development projects in a "land army" initiative. □

PRINCIPLE 2

Improve the quality of life

THE PURPOSE of development is to enable people to enjoy long, healthy and fulfilling lives. Some of the indicators of such lives can be measured and expressed in exact terms: life expectancy, survival rate of children, literacy, access to clean water and sewerage facilities, education rates, levels of employment, the level of access to goods and services like electricity. Others are less quantifiable, more subjective – like environmental quality, or cultural and spiritual fulfilment.

Depending on their social, political and cultural heritage, individuals are able to shape their own destinies to a greater or lesser extent. But the State still has major responsibilities in this regard, and must put into place social and environmental programmes which give all its citizens equal opportunities for achieving fulfilment. The government should therefore review its budgetary priorities to put even more emphasis on essential human development and environmental care, and there must be adequate investment to ensure the country's future skills, with special emphasis on science, technology and training.

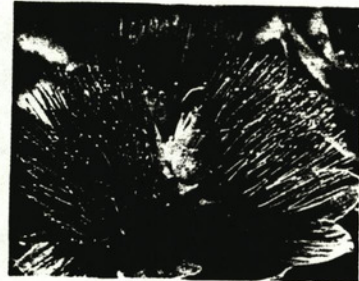
This principle demands that access to land and resources be as equitable as possible. Also, it requires concerted action to reduce gender disparities, by recognising and extending women's roles in the community. In South Africa, as in most countries, women have limited access to and control over income, credit, land, education, training, health care and information, and they suffer the worst effects of poverty and environmental degradation, with some discrimination still embedded in legislation.

PRINCIPLE 3

Conserve the Earth's vitality and diversity

BECAUSE the physical structure of the planet is constantly changing, the capacity of ecosystems to adapt must be maintained. In essence, this means:

- ❖ Conserving the life-support systems that nature provides – that is, those ecological processes that shape climate, clean the air and water, regulate water flows, recycle essential elements such as



nitrogen and oxygen, create and regenerate soil, and generally keep the planet fit for life;

- ❖ Conserving the diversity of all life on Earth; and
- ❖ Ensuring that all uses of renewable resources are sustainable.

Human activities are radically altering the ecological processes through pollution and the destruction or modification of ecosystems. "Greenhouse" gases are causing potentially catastrophic climate change; chlorofluorocarbons (CFCs) are destroying the protective ozone layer in the stratosphere; acid rain is killing aquatic life, damaging soils and devastating forests; soils and both surface and groundwaters have been so polluted by heavy metals and organic compounds that they are now unusable.

In South Africa, an estimated 419-million tons of industrial and mining waste – including air emissions and material discharged with waste water – are generated each year. Of this, 1,89-million tons are estimated to be hazardous. Of some 550 landfill sites, fewer than half are subject to State control; at most of them there is serious concern about possible contamination of the soil and/or water resources.

Generally, Earth's life-support systems are being threatened.

Biodiversity (more correctly biological diversity) describes the vast wealth of life on Earth: the tens of millions of micro-organisms, animals and plants, all the genes they contain and the intricate ecosystems they function in, which together form the living world. These plants and animals, evolving continuously over millions of years, have made the planet fit for human habitation. They help maintain the chemical balance of the Earth, and stabilise weather and climate. They supply all our food, much of our shelter and raw materials, and many of our medicines, among many other uses. But without adequate protection measures, as

“ Biodiversity describes the vast wealth of life on Earth: the tens of millions of micro-organisms, animals and plants ... and the intricate ecosystems they function in, which together form the living world. ”

PART 1 Building **BLOCKS**

“Natural diversity is possibly more threatened now than at any time since the dinosaurs became extinct 65 million years ago, and we are facing a potential crisis of similar, if not worse, proportions.”

many as one million of the world's wildlife species could become extinct within the next 20 years, taking with them an untapped biological and genetic treasure chest that could enrich humankind medically, physically (through new and more nutritious food sources), emotionally and spiritually.

South Africa, despite its tiny size in world terms, hosts an estimated 10 per cent of the world's diversity of plants, birds and fish. After Indonesia and Brazil, it has proportionately the richest plant and animal life of any country on Earth, with 227 mammal species – 5,8 per cent of the world's mammal population of 3 927 – and more than 700 birds – eight per cent of the world's 9 000. It has the richest flora in all of Africa, holding more than eight per cent of the world's higher plants (20 300 of the total of 250 000). An even smaller area, the Cape Floral Kingdom, is the richest by far of the world's six plant kingdoms, proportionate to area.

But this country's natural habitats have been diminishing at alarming rates, mainly since the arrival of the first European settlers in 1652 and particularly since the advent of the Industrial Revolution. During the past 350 years, the country's dry forests have been reduced by 46 per cent; grasslands by 62 per cent; mangrove swamps by 50 per cent; renosterveld vegetation by more than 90 per cent. Our natural wealth is slipping through our fingers.

CONSERVING EARTH'S VITALITY AND DIVERSITY PRIORITY ACTIONS

- A highly conservative approach – the “Precautionary Principle” – to pollution must be adopted by industry and government by minimising, and wherever possible preventing, the discharge of harmful substances. A “cradle-to-grave” approach should be applied to reduce or eliminate pollution at all stages of production, instead of concentrating only on cleaning-up operations at the “end of pipe”.
- Emissions of pollutants which cause acid rain, “greenhouse” warming and photochemical smog – such as sulphur dioxide, nitrogen oxides, CFCs, methane, carbon monoxide, carbon dioxide and hydrocarbons – must be cut significantly or eliminated completely where possible. South Africa must set tough yet realistic national targets in this regard, bearing in mind the huge energy needs of currently disadvantaged communities.
- Social costs – such as dealing with resulting pollution – should be internalised and reflected as part of the true costs of all goods and services.
- Climate change should be treated as a reality and all future planning should incorporate adequate preventative measures, particularly in low-lying coastal areas – for example, the lower Silvermine River valley at Fish Hoek.
- Because water is vital to all human communities, an integrated approach to land and water management must be adopted by all levels of government, using the drainage basin (or catchment area) as the unit of management.
- As much as possible of both “pristine” (unmodified) ecosystems and only slightly modified systems must be maintained in their present state, through adequate funding and legislative support for conservation agencies.
- Net deforestation must be halted.
- Everything possible must be done to prevent further extinctions of plants and animals, particularly endemic species. Threatened species should be restored to safe levels and stocks of non-threatened species must not be allowed to decline significantly.
- Knowledge and understanding of species and ecosystems must be improved through government and private sector support for well-managed, well-motivated research.

Natural diversity is possibly more threatened now than at any time since the dinosaurs became extinct 65 million years ago, and we are facing a potential crisis of similar, if not worse, proportions.

Renewable resources are the basis of much of our economic activity. They include water; the soil; products harvested from the wild such as timber, fish and other marine products and some wild animals; and domestic species harvested in agricultural production. If used sustainably, such resources will perpetually renew themselves. But, often because of ignorance but also because of irresponsible and greedy human behaviour, the exploitation of many forests, fisheries and grazing lands has not been sustainable. Eventually these naturally regenerating systems crash, sometimes with tragic results for human communities. For example, pilchard stocks off the West Coast have not yet recovered after being ruthlessly over-exploited in the 1960s, and the resulting economic hardship is still felt by fishing communities to the present day.

To conserve the Earth's vitality and diversity, it is essential to curtail pollution, which is defined as the process of over-loading the planet's natural capacity to cleanse its ecosystems of damaging materials and waste energy. Because of the vital role of water in human settlements – particularly in a mainly arid country like South Africa – high priorities must be given to protecting river systems and wetlands. Land-based sources must not be allowed to pollute the sea. Special attention must be given to sewage treatment, to minimising run-offs of agricultural fertilisers and livestock wastes from farmland, to curbing the persistent discharge of organic substances and heavy metals, and to reducing large-scale afforestation programmes in drought-prone areas.

PRINCIPLE 4

Minimise the depletion of non-renewable resources

MINERALS, oil and gas, are effectively non-renewable resources. Unlike plants, fish or soil, they cannot be used sustainably. However, their economically viable "life" can be extended by recycling, using less of a resource to manufacture a particular product by applying improved technologies, and by switching to renewable substitutes wherever possible. The widespread adoption of such practices is essential if Earth is to sustain billions more people in future and give



JOHN YELD

ABOVE

The protection of South Africa's rivers and wetlands must be given top priority.

PART 1 Building **BLOCKS**

MINIMISING THE DEPLETION OF NON-RENEWABLE RESOURCES PRIORITY ACTIONS

- A comprehensive, long-term strategy must be developed by the government to shift the main focus of South Africa's economy away from its previous dependence on non-renewable resources in the form of minerals and coal. This must be done in consultation with all sectors of the economy, and in particular with mining industry representatives (management and labour).
- Full Integrated Environmental Management (IEM) procedures must be applied to the proposed development of new mines, with proper cost-benefit studies to take into account the full environmental and social costs and possible threats to the community as a whole.
- The issue of whether to declare inviolate from any future exploitation of non-renewable resources those areas which are highly sensitive or valuable in natural and cultural resources – particularly those with huge economic value in terms of other activities, like the Kruger National Park and ecotourism – should be vigorously and openly debated. □

everyone a life of decent quality. In a country like South Africa, where much of its accumulated wealth has been generated by the exploitation of non-renewable resources in the form of minerals, it must be an urgent priority to plan for the transition to a more sustainable economy in the future.

Despite South Africa's vast coal reserves and the economic temptation to exploit these as rapidly as possible to earn capital for social upliftment programmes, the coal resource must be treated with particular caution, given its capacity to contribute to global warming wherever it is utilised.

“
Earth has a finite carrying capacity for its human population and the resources they consume; there is a maximum impact which it can withstand before its life-giving systems start to collapse.”

PRINCIPLE 5

Keep within the Earth's carrying capacity

HUMAN impact on the Earth depends on two things: the total number of people, and how much energy and other resources each individual person uses and ultimately discards as pollution. For example, the 128 countries classified as being low to medium-low energy consumers contain three quarters of the world's population of 5,4-billion, but are responsible for only 20 per cent of the world's commercial energy consumption. By contrast, the average citizen in one of the world's 40-odd countries with high or medium-high levels of energy consumption uses an estimated 18 times as much commercial energy as a person in a low-consumption country, and causes a correspondingly greater amount of pollution.

So, although rapidly increasing human numbers are a major problem for the Earth and must be contained as a matter of urgency, it is both simplistic and misleading to argue that this phenomenon alone is responsible for growing environmental degradation.

Earth has a finite carrying capacity for its human population and the resources they consume; there is a maximum impact which it can withstand before its life-giving systems start to collapse. That carrying capacity can be expanded by technology which improves the efficiency of the resource use, although this is often at the cost of reduced biological diversity or ecological services. But it cannot be expanded indefinitely; ultimately, it is limited by the system's capacity to renew itself – its sustainability – and to absorb wastes safely. And it is important to realise that we do not know exactly what that capacity is; by the time we find out, it may be too late.

Population growth is often highest where poverty is most intense, and in many instances people are locked into such poverty in a vicious cycle which includes malnutrition, a lack of health care, reduced education and – often for women – a lack of access to family planning facilities for those who want them. Therefore, there must be suitable development which allows them to break that cycle of poverty.

It is not sufficient for humans merely to survive – that is possible using very limited resources, but at a terrible social and physical cost. Instead, the ideal is for all people to prosper and live meaningful, quality lives. To stay within the Earth's carrying capacity – and sufficiently well within those limits to allow a real improvement in the quality of life and not just survival – governments and communities must:

- ❖ manage their environmental resources sustainably;
- ❖ address the issue of population growth and resource consumption in an integrated way;
- ❖ reduce excessive consumption and eliminate wasteful practices;
- ❖ provide better information about Earth's carrying capacity and the dangers of over-consumption, using both formal and informal education structures; and
- ❖ provide proper health care and family planning services, linked to the education of, and empowerment programmes for, women.

All these actions must be taken together: there must be an integrated approach in national development policies and planning to the use of resources and population issues.

PRINCIPLE 6

Change personal attitudes and practices

POOR people generally do not need to be convinced that a higher standard of living is desirable, for virtually everyone aspires to an improved quality of life. But often efforts to escape poverty, through the more concerted exploitation of natural resources, damage the environment. Although they may realise that their current actions are creating problems for the future, people in such circumstances are forced through poverty to do things that help them survive for the present.

By contrast, those people who enjoy higher incomes may accept in principle the need to reduce consumption, but very few would be willing to reduce their standards of living in practice. Not enough of them take environmental issues seriously enough to consciously adapt their own lifestyles – by conserving energy and water, recycling as much of their garbage as possible, reducing waste generally, and placing “environmental friendliness” above convenience or cheapness when shopping, for example.

KEEPING WITHIN EARTH'S CARRYING CAPACITY

PRIORITY ACTIONS

- Maternal and child health care must be improved substantially, and family planning services expanded rapidly. These should be funded as part of all rural and urban development programmes, at national and local level.
- “Green” organisations that promote consumer support for environmentally sensitive manufacturers and industrialists, and lobby effectively for the provision of facilities like recycling depots, must be actively encouraged by all levels of government.
- The greater efficiency of resource use through pricing mechanisms should be encouraged. □

PART 1 Building BLOCKS

CHANGING PERSONAL ATTITUDES AND PRACTICES PRIORITY ACTIONS

- The status of environmental education must be reviewed urgently and it should be introduced into the formal curriculum at all levels.
- Community-based organisations must be approached to assist with training, extension services and demonstrations by qualified extension workers who can help the users of resources – like farmers, fishermen, forest workers, artisans – adopt better and more sustainable practices.
- South Africa's national strategy for sustainable living must include action to motivate, educate and equip individuals to lead sustainable lives. □

RIGHT

Promoting a sustainable lifestyle: environmental protesters at the Earth Summit in Rio de Janeiro.



People across the socio-economic spectrum will need to be persuaded and helped to change their lifestyles, to adopt the ethic for sustainable living, and such attempts will have to be realistic. In particular, people must not be coerced; the dialogue on sustainable living must be broadened by talking not only to people but with them, and enabling them to talk amongst themselves around environmental issues.

This can be done; already there is a much more intense environmental awareness among many sectors of society. People can be persuaded to adopt the ethic for sustainable living when they are properly informed, but most formal education still does not provide the required knowledge and understanding. Also, advertising often promotes unsustainable lifestyles.

Therefore, a new approach is essential: an understanding of

how humans relate to the natural world must be built into the formal education curricula. Also, all possible non-formal education and communication media – particularly the advertising industry – must be harnessed to get across the message of why we should accept the ethic for living sustainably.

PRINCIPLE 7

Enable communities to care for their own environments

THE successful implementation of the *Caring for the Earth* strategy may ultimately depend on an individual belief in, and commitment to, the ethic for sustainable living, but people are essentially sociable beings and work best and most effectively in social groups like communities.

A sustainable community is one which cares for its own particular environment as well as that of the broader society of which it is part. It does not damage the environments of neighbouring communities while caring for its own; it uses its resources frugally and sustainably; it recycles materials wherever possible, minimises wastes and disposes of them safely. It does not always choose the cheapest and easiest options. Such communi-

ties attempt to meet their own needs as far as possible, but recognise the need to co-operate with others for the global good. To achieve this goal of sustainable living, communities must be empowered to organise themselves and manage local environments for their own benefit. Conservation actions, pollution control, the rehabilitation of degraded ecosystems and improvement of the urban environment are all essential elements in a proper community plan.

At the heart of this principle is the notion that for any conservation and development actions to be successful, they must involve local communities at all levels of decision-making, through planning and implementation, from the outset. All citizens must have the right to participate in actions that affect them; they must have an education which equips them to make sound environmental judgements; and they must have access to all relevant information.

There will always be conflict of varying degrees within communities, given the diverse nature of human thought and action. This should be handled by identifying all interest groups and inviting them to participate in proceedings. In South Africa, the long history of colonialism, followed by apartheid, and other historical influences have aroused intense feelings of suspicion, fear, anxiety and aggression in some sectors of society. It may often require a lengthy process of community-building before any common environmental action may be agreed and undertaken, just as on a broader scale the process of nation-building and healing will gather momentum slowly. Cognisance of this as a potentially limiting factor must be an essential part of any policy, programme or project planning.

PRINCIPLE 8

Provide a national framework for integrating development and conservation

JUST AS individuals must recognise the need for, and adopt, an ethic for sustainable living, so too must the nation. Through the central government, this ethic must be adopted as the critical element in the country's political philosophy. This means the government must develop a broadly acceptable national environmental framework that encompasses the duties and responsibilities of institutions, the country's economic policies, existing laws and regulations, and an accurate information base.

ENABLING COMMUNITIES TO CARE FOR THE ENVIRONMENT

PRIORITY ACTIONS

- Communities and individuals must be provided with secure access to resources, especially land, and an equitable share in managing them.
- There must be open access to information and to the required skills and technologies to understand and deal with environmental issues affecting communities.
- There must be enhanced participation in conservation and development planning, with local governments and community groups acting as full partners with the central government in helping to devise strategies, policies, programmes and projects that directly affect them.
- Because local governments are key elements in the environmental well-being of communities – especially in issues such as land use planning, water supply, waste treatment and health care – they must be structured effectively and in a politically acceptable form.
- Communities must be provided with proper financial and technical support from the central government and other agencies to enable them to apply sustainable programmes.
- South Africa must enshrine the right of freedom to information in its new constitution and promulgate a Freedom of Information Act.
- The right of locus standi must be broadened so that individual citizens and groups can challenge in court matters of environmental significance. □

PART 1 Building BLOCKS

“Future economic policies must take proper account of the need to sustain the country’s ecosystems and natural resources.”

Up until now, much of South Africa’s environmental policy has been reactive, responding to problems and situations after they have developed. The country’s major environmental agency – the Department of Environment Affairs – has been one of the weakest of the central government departments, under-staffed and under-funded. A sectoral approach has been employed, with environmental policy seldom being co-ordinated with national planning (this being the responsibility of an entirely separate department). Economic and developmental decisions have been taken without reference to environmental factors – like the political decision to develop the vast township of Khayelitsha on the Cape Flats at a much higher density than recommended by planners, and without regard for the Kuils River wetlands, the possible pollution of False Bay and the important Cape Flats aquifer, or the already greatly reduced vegetation of the area. It is the central government’s duty to ensure an effective national approach to integrating conservation and development, so that a culture of promoting sustainable development for the country as a whole takes root at all levels of government.

PROVIDING A NATIONAL FRAMEWORK FOR INTEGRATING DEVELOPMENT AND CONSERVATION

PRIORITY ACTIONS

- The government must adopt an integrated approach to environmental policy, with sustainability the overall goal.
- Overall responsibility for environmental management, policy development and planning on a national basis should be vested in a single government department or statutory authority like the Environmental Protection Agency in the United States.
- Strategies for sustainability must be developed and implemented directly at national level and through regional and local planning authorities.
- Proposed development projects, policies and programmes must be subjected to environmental impact assessment and proper economic appraisal, within the overall application of Integrated Environmental Management (IEM) procedures.
- South Africa’s Environment Conservation Act must be strengthened, made more comprehensive, and its provisions properly enforced.
- Existing legal and administrative controls which have patently failed to address environmental problems – notably water availability, air and noise pollution, coastal degradation, soil erosion and the disposal of hazardous waste – must be reviewed and restructured urgently.
- Economic policy must be used as one of the key instruments to attain sustainability, and all national policies, development plans, budgets and investment decisions must take full account of their effects on the environment i.e. social costs must be absorbed as private costs, where practicable.
- Economic incentives must be provided for conservation practices and efforts that promote the goal of sustainability.
- The government must remove any subsidies or other mechanisms that distort the true prices of natural resources, other than those introduced to promote sustainability. If necessary, taxes must be applied so that the prices of resources reflect their real cost to society, including indirect costs like the consequences of ill-health. Disadvantaged sectors of the community may have to be subsidised in the short-term in this regard.
- The scientific knowledge base must be maintained and strengthened; the monitoring of environmental changes must continue; and information on environmental matters must be made more accessible and disseminated more widely. There must be a holistic approach that avoids duplication of effort and expenditure of limited research budgets. □

Future economic policies must take proper account of the need to sustain the country's ecosystems and natural resources. Conversely, policies and regulations that aim to protect the environment and conserve resources without adequate economic incentives are likely to fail.

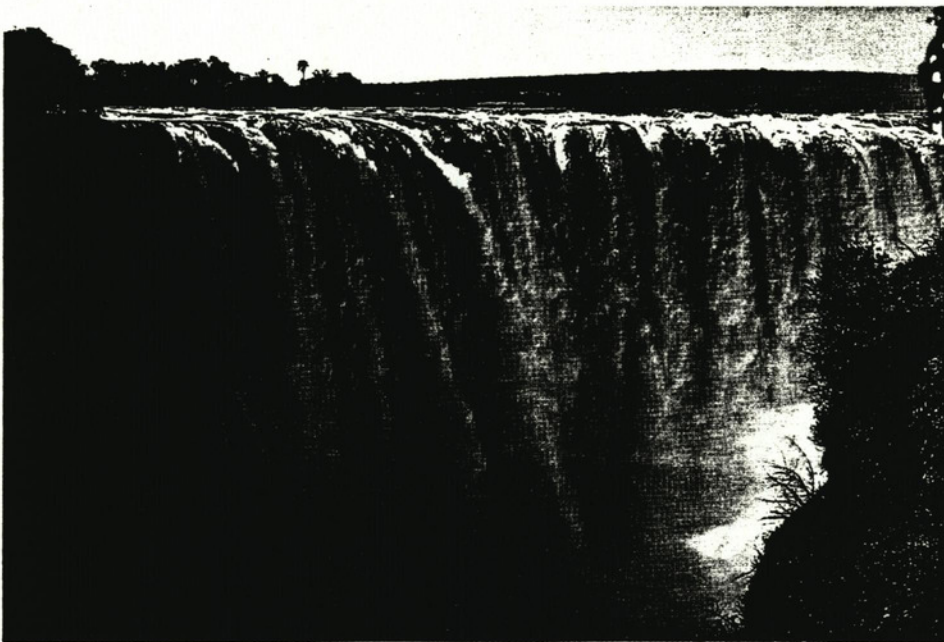
All economies, including South Africa's, depend on the environment for life-support services and raw materials. But until now, none of them has taken account of the true value of these services and materials, treating the natural environment as limitless and largely free of charge. This attitude has led to the rapid depletion of resources and the degrading of ecosystems. But new economic models that take the full social and environmental costs of policies, development plans, budgets and investment decisions into consideration are being developed world-wide, and these must be applied in South Africa as well. They are critical to the challenge of meeting sustainable human development.

PRINCIPLE 9

Create a global alliance

"**THINK** globally, act locally", says the conservation dictum. It's a sound principle, but not enough - we must act globally as well. All countries, including South Africa, have essentially artificial national boundaries. Yet in environmental terms, they are inextricably linked, for ecological processes, environmental features like oceans and rivers, and wildlife populations do not respect national boundaries. Air polluted by emissions from the giant coal-burning power stations of the eastern Transvaal drifts

"All nations have to recognise their common interest in the world environment, despite weaknesses in current international agreements."



JOHN YELD

LEFT
Victoria Falls on the Zambezi River. Environmental features like rivers often link nations and must be treated as global resources.

PART 1 Building BLOCKS

“South Africa has a huge regional responsibility, for its development of the richest economy of the sub-region has been achieved at least partly by using cheap resources like labour from its neighbours.”

BELOW

The supertanker Castillo de Belver burns off the West Coast. Environmental problems such as marine pollution often transcend national boundaries.

over Swaziland; oil from a stricken tanker off the Mozambique coast washes ashore on Natal and Cape beaches; elephant populations, when not restrained by electric fences, wander freely between the Kruger National Park and Gonarezhou National Park in Zimbabwe, or between northern Natal and southern Mozambique.

Any individual nation's efforts to reach a state of sustainability are dependent on international agreements to manage shared resources and deal in a co-operative fashion with shared problems, such as ozone depletion, climate change, pollution control and the loss of biodiversity. All nations have to recognise their common interest in the world environment, despite weaknesses in current international agreements.

We also share the world's human environment – we are all members of the same species and have a responsibility towards one another. Although the principle of national sovereignty is accepted world-wide, one inescapable international reality is the rising tide of refugees trying to escape desperate poverty, environmental degradation and economic ruin in their own countries.

The southern African sub-continent is no exception to this trend. The only way to stabilise the situation and eliminate existing or potential conflict is international co-operation on an unprecedented scale to promote sustainability in all societies, through environmentally sensitive development that will significantly improve the quality of life for all members of those societies.

South Africa in particular has a huge regional responsibility, for its development of the richest economy of the sub-region has been achieved at least partly by using cheap resources like labour from its neighbours. Also, it must assume full moral responsibility for its past actions – particularly its former policy of destabilisation – which have contributed to massive environmental destruction and social dislocation in these neighbouring countries.

International co-operation is possible. At the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in June 1992 – also known as the Earth Summit – 172 of the organisation's 178 members reached significant consensus on a number of pressing environmental issues. But international co-operation needs the backing of international law, and this body of law needs to be reshaped to reflect both the need of the world's peoples to live sustainably, and nations' obligations towards the Earth that they share.



THE ARGUS

Because of its former apartheid policies, South Africa has been effectively barred from the United Nations and many other international forums. This isolation – cultural, social, economic, scientific, environmental – has had a strong negative impact on the country. It is essential that this country is brought back into the international community as soon as possible, both to benefit from such contact and in order to fulfil its moral and ethical obligations, although it also needs to develop a strong national base to do this effectively. □

CREATING A GLOBAL ALLIANCE
PRIORITY ACTIONS

- There are many existing international agreements to conserve life-support systems and maintain biodiversity, including the Vienna Convention for the Protection of the Ozone Layer and its Montreal Protocol; the Geneva Convention on Long-Range Transboundary Air Pollution; the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal; the Rio Conventions on Biological Diversity and Climate Change; the Rio Declaration on Environment and Development and Agenda 21. Where it has not already done so, South Africa must become a party to all appropriate agreements already in existence, help to strengthen and revise these where necessary, and play a full part in concluding new agreements.
- A Universal Declaration and Covenant on Sustainability is an urgent international priority. South Africa must help motivate such a document and be among the first signatories.
- South Africa must be a key player in developing a comprehensive and integrated conservation regime for the Antarctic and the Southern Ocean;
- Although governments must accept the major responsibility for achieving sustainability, the value of non-government organisations (NGOs) in this regard must be recognised. In South Africa, the government should form productive partnerships with the many NGOs which are concerned with achieving sustainability, and also support their efforts logistically where possible and – particularly – with the full disclosure of information.
- South Africa must make every effort to be readmitted as a full member of the United Nations as soon as possible, and help strengthen the UN system as an effective force for global sustainability.
- South Africa's official debt should be renegotiated with a view to retiring as much of this debt as possible to help restore the country's economic progress. Legitimate "debt-for-nature" swaps could be included in these negotiations.
- South Africa's existing debt should be analysed to see whether any investments have caused unforeseen environmental problems and social costs. If this is the case, such debts should be renegotiated, taking account of the cost of rehabilitating any environmental degradation.
- Future foreign investments should be subject to a code of conduct which includes conditions on health, safety and the environment.
- Negotiations should be opened with developed nations on the transfer and/or donation of environment-friendly technology to South Africa as part of aid packages or "debt-for-nature" swaps, with due regard for restricting conditions.
- Links with other developing countries, particularly those in Africa, should be strengthened in order to improve bargaining power around technology transfer. South Africa must also recognise its regional responsibilities in terms of the development of the southern African sub-region. □

SITES OF STRUGGLE

Additional actions for sustainable living

LAND

Democracy and justice are at the heart of any system of sustainable living. All people in a country must have reasonable access to its natural resources and must, to some extent, be able to share in its wealth. Disparities in social, economic and political development must be eliminated as far as possible.

Unfortunately, because of its past history, South Africa's distribution of land – the primary natural resource – is manifestly unjust. The country has a surface area of some 1,2-million square kilometres. Because of the Land Acts of 1913 and 1936 and other colonial and apartheid legislation like the Group Areas Act, most South Africans have been rendered landless. Prior to the repeal of this legislation in 1991, some 87 per cent of the land was reserved for whites. Black South Africans, who make up three quarters of the population, were restricted to just 13 per cent of the land. In addition, some five million people were forcibly moved, often from

highly productive, sustainably utilised land to smaller areas of poor productivity and few natural resources. Because of such social engineering, many South Africans have been forced to live in crowded conditions on land that is no longer able to support them effectively, resulting in extreme poverty. In turn, this has exacerbated environmental degradation – the “pollution of poverty” – particularly of the soil but also of plant and water resources.

Soil erosion, despite being identified as a major environmental problem as far back as the 1920s, has escalated dramatically, with an

BELOW

QuaQua 1984. Apartheid forced five million South Africans to move, often to overcrowded areas of poor productivity.



JOHN HAWKES

estimated three tons of topsoil per hectare being lost annually – far higher than the rate of topsoil formation (0,1 ton per hectare per year). In the Tugela, Pongola and Mfolozi catchments in particular, topsoil losses have reached staggering proportions. At the same time, over-stocking in other highly populated rural areas has caused increased desertification: at least 250 000 hectares have been irretrievably lost, with more to follow unless urgent action is taken.

The combination of dispossession and being forced to live in degraded physical environments has severely reduced the quality of life of many South Africans and reduced their opportunities for social upliftment. Equally devastating, it has also alienated some people emotionally and spiritually from the land, creating attitudes to environmental issues ranging from apathetic to outright hostility. On the positive side, though, there is a growing “green consciousness” at grassroots level, as heralded in increasing support for such organisations as the Soweto-based National Environmental Awareness Campaign (NEAC), Trees for Africa, and the Catholic Church Welfare Bureau’s greening initiative Abalimi Bezekhaya in the Cape Town townships of Khayelitsha and Nyanga.

Nevertheless, without a broadly acceptable redistribution of land, many South Africans will not be able or inclined to adopt an ethic for sustainable living, and are unlikely to accept both the rights and responsibilities that are an integral part of caring for the land.

LAND RECOMMENDED ACTIONS

- An article on environmental rights must be enshrined in South Africa’s new constitution. It should state, inter alia, that the physical environment – all the land, water and the air – is the common heritage of all South Africans; that all citizens have the right to a healthy and ecologically balanced environment; and all have a duty to defend it.
- A Land Claims Commission or similar statutory body enjoying majority support of South Africans and full legal authority must be set up to review and mediate all land claims – including questions of ownership, rights of occupation, and rights to an equitable share in production by those who work the land.
- There must be an urgent, major revision of land-use planning, taking into account the need for a more equitable land distribution among all South Africa’s people. Such planning must set norms to ensure that an adequate proportion of each biome is effectively protected, and this must be structured into the national strategy for sustainability.
- This national strategy should include an overall nature conservation plan, depicting inviolate areas where no development should take place; intermediate areas where any development proposals must be subjected to full Integrated Environmental Management (IEM) procedures, incorporating environmental impact assessments (EIAs); and those areas where development can take place unhindered, although always within a framework of sound environmental management principles and wise land use. The plan must also assess to what extent the internationally accepted “ideal” of 10 per cent of the country’s surface area being formally protected is feasible in South Africa, and set realistic targets in this regard.
- The ecologically sound yet profitable management of wildlife resources by which local communities benefit specifically must be supported, with increased incentives being offered for conserving biological diversity. Successful projects such as those in KaNgwane, the Pilanesberg National Park in Bophuthatswana, the Richtersveld National Park, some Natal Parks Board reserves, and – particularly – among the Himba in the Kaokoveld of Namibia, as well as Zimbabwe’s Campfire project, should be used as role models.
- Effective, state-sponsored programmes to rehabilitate areas affected by soil erosion and desertification must be developed and introduced as soon as possible.
- South Africa’s legal system of property rights and land tenure should be adapted so that, in addition to conferring ownership, there is also a formal obligation on the part of the owner to protect and care for the land and to utilise its natural resources in a sustainable, non-damaging and productive way. □

“*A major environmental problem is that an estimated half of South Africa’s population relies on the non-sustainable use of fuelwood for their energy requirements.*”

ENERGY

IN GENERAL terms, energy use in South Africa is inefficient, wasteful and unsustainable. Overall, this country’s estimated share of two per cent of the world’s carbon dioxide production is a disproportionately high contribution to global warming and human-induced climate change – according to the United Nations, on a per capita basis South Africa is the world’s third highest emitter of carbon dioxide. As a general policy, instead of seeking to generate and sell more power – with all the attendant pollution problems – we need to manage demand so that overall consumption is reduced.

More than three quarters of South Africa’s energy is derived from coal, making the country’s dependence on this non-renewable resource one of the highest in the world. However, there are huge coal reserves here, estimated at more than 58 000-million tons. About half of the coal mined in South Africa – a total of about 181 000 tons in 1988 – is used to generate electricity. A quarter is used to produce synthetic liquid fuels through the Sasol process (considered by some scientists to be seriously inefficient and wasteful), while another quarter is burnt directly by industry or in homes to provide heat. South African coal has a high ash content, creating a huge disposal problem. Although most local power stations are fitted with electrostatic precipitators to remove particulates, there are no flue-gas scrubbers to remove sulphur and nitrogen oxides which combine with moist air to form acid rain. All of the big coal-fired power stations are situated within a 150km radius of the major coal mines in the eastern Transvaal Highveld. The result is air pollution that some scientists suggest is equal to the worst in the world – between 30 and 40 tons of sulphur dioxide per sq km per year. This is aggravated by local meteorological conditions with the tendency to inversion.

Such air pollution poses potentially extremely serious environmental consequences as a substantial amount of South Africa’s agriculturally productive land and commercial forests and about 25 per cent of its surface water run-off also occur within this region. Direct coal burning by industry and in black townships without access to electricity is also responsible for substantial air pollution, resulting in environmental and health problems.

South Africa’s parastatal electricity utility Eskom produces about 60 per cent of all electricity on the African continent, yet only some 30 per cent of South Africa’s urban black population and about 10 per cent of blacks in rural “homelands” have access to electricity. They are forced to rely primarily on coal-fired stoves and other more expensive forms of energy like paraffin.

A major environmental problem is that an estimated half of South Africa’s population now relies on the non-sustainable use of fuelwood for their energy requirements. If current consumption rates continue, all natural woodlands in the “homeland” areas could be denuded by 2020. If this situation is to be reversed, some 500 000 hectares of woodlots will have to be planted during the next decade.

Although nuclear power is promoted as a potential power source, electricity generated at Koeberg nuclear power station is more expensive than other power in the national grid. The capital costs of building new nuclear power stations and eventually decommissioning old ones – taking full account of social and environmental costs over many generations – are

ENERGY RECOMMENDED ACTIONS

- Energy conservation must be given top priority in all sectors of society. Publicity and education campaigns to promote energy conservation and the sale of energy-efficient products must be initiated.
- South Africa should develop an explicit national energy strategy for the commercial energy industry, covering extraction, production, conversion, transport and use for at least the next 25 years. This strategy must set specific targets for reducing overall energy consumption.
- All South Africans must be provided with access to electricity as soon as possible, based on a suitably negotiated scheme for paying for such access and consumption. In this regard, the efforts of the National Electrification Forum must be given every possible support by the participants and the central government.
- A socially stringent, sliding scale of electricity tariffs should be introduced so that excessive "luxury" use is significantly more expensive than the amount required to run a basic household.
- More emphasis must be placed on providing efficient and accessible public transport, with appropriate disincentives for the use of private transport.
- A far greater percentage of future research funds must be spent on technological research and development of alternative sources of energy, such as hydro-electric power and solar energy. The hugely disproportionate spending on nuclear research must be curtailed – for example, in 1986, R750-million was spent on nuclear research and just R5-million on alternative energy sources, of which only R1-million went to solar power research.
- Regional co-operation to harness the vast hydro-electrical potential of the sub-continent must be an urgent priority.
- A programme to fit scrubbers to coal-fired power stations within a reasonable time frame should be initiated. Although this will increase the cost of electricity by between 25 and 33 per cent, this has to be measured against the inevitable environmental cost of reduced productivity of agricultural land, potential crop losses to the effects of acid rain, and the cost to human health, such as respiratory-related medical problems.
- A mix of decentralised renewable energy systems should be applied wherever feasible, such as photovoltaics in rural areas, and more use must be made of solar heating for specific applications, such as water heating. Solar-powered geysers should be compulsory for all residential units costing more than R30 000, and the thermal properties of all new buildings must be maximised.
- The Electricity Council, if retained, must be made more representative of society as a matter of urgency.
- The decision to introduce lead-free petrol by 1995 must be supported by legislation requiring the compulsory fitting of catalytic converters to all new petrol-driven vehicles, and the introduction of a subsidy system to encourage the conversion of older vehicles.
- Fossil fuels must be charged at their true cost, which includes social costs such as environmental health costs and pollution control-related expenses.
- South Africa, as an integral member of the community of African nations, should respect the decision of the Organisation of African Unity to keep the continent a nuclear-free zone, and no new nuclear power stations should be constructed.
- South Africa should sign the Climate Convention negotiated at UNCED in Rio de Janeiro. □

PART 2 Sites of **STRUGGLE**

prohibitive. Also, the cost of producing South Africa's nuclear fuel is uneconomical and is heavily subsidised by government. There are still major, unresolved environmental problems relating to the disposal of highly dangerous nuclear waste; essentially, this is an unwelcome inheritance which is being forced on successive generations.

The extremely serious potential consequences of a nuclear accident, however small the chances may be, the huge capital costs involved, Eskom's current substantial excess electricity generating capacity, and the growing potential for regional co-operation in generating hydro-electric power, all militate against the further use of nuclear power in South Africa in the foreseeable future.

WATER

ALL LIFE on Earth depends on water. South Africa is an essentially arid country, and water is the most important factor limiting future development. Yet the productivity and diversity of this country's vital freshwater systems have been allowed to deteriorate or have been reduced and even destroyed by insensitive building, unsound agricultural development, industrial and municipal pollution, urbanisation, the introduction of alien species, unwise afforestation, and the clearing of vegetation. While the water supply in most formal urban areas is of high quality and water-borne sewage is the norm, many people in both rural areas and informal settlements in urban areas still do not have adequate access to water, nor are such supplies as they do have of an acceptable quality. This has resulted in serious environmental health problems.

Most South African rivers are impounded or regulated at one or more points along their length, radically altering their ecological status. So much water is now extracted from previously perennial rivers – for example, the life-sustaining arteries of the Kruger National Park, the Letaba and Levuvhu rivers – that they have ceased to flow for long periods, despite good rains.

Wetlands have a vital role to play in the maintenance of biodiversity, with some 48 per cent of birds listed in the Red Data Book utilising either wetlands or moist grassland. These freshwater systems are also an important water source for many rural communities, yet many wetlands have been destroyed or degraded through drainage programmes for crop and timber production and in-filling for roads and houses, among other causes. In

BELOW

Bitou estuary,
Plettenberg Bay.
The ecological
functioning of
most South
African rivers has
been radically
altered.

PETER JOHNSON

1988, it was estimated that 58 per cent of the original wetland area of the Mfolozi catchment had already been lost, and that only two per cent of this 10 000 square kilometres catchment remained as wetland. As yet, there is still no effective national strategy to ensure the proper conservation of those wetlands that remain.

The demand for water is increasing exponentially and – depending on “worst-case” or “best-case” scenarios – it is estimated that much of South Africa will experience the equivalent of permanent drought somewhere between 2002 and 2040. Water rationing is likely to become a fact of life, and water conservation measures must be implemented in all spheres of life as a matter of urgency.

WATER RECOMMENDED ACTIONS

- Responsibility for managing water resources must be integrated into the overall management of, and policy-making for, the country's natural and built environments, within the national strategy for sustainability. This should be managed by a single central government department which should also have full responsibility for land-use planning.
- The management units of freshwater resources must be based on overall catchment areas, with ecosystems properly protected to improve the volume and quality of freshwater sources.
- Wetland conservation must enjoy priority. A national wetland strategy must be initiated as a matter of urgency. Wetlands must be defined legally and owners held responsible for their ecological well-being.
- The government must undertake effective and sustained publicity campaigns and education programmes to stimulate awareness of the need to conserve water and use it sustainably.
- Water must be allocated equitably and efficiently among all competing users, with the demands of agriculture in particular – where many wasteful practices have been condoned over decades – being carefully reassessed. Farmers must be encouraged through education and/or financial incentives to install more effective, water-saving irrigation schemes wherever possible.
- Basic water requirements must be supplied to all households at the absolute minimum cost, determined on the basis of World Health Organisation guidelines. Stringent sliding tariff scales must be introduced or – in the case of authorities like the Cape Town City Council which already successfully apply them – strengthened to discourage wasteful practices and to act as a disincentive for the “luxury” use of water, such as in suburban gardens planted with water-loving, exotic plant species.
- Water must be released from any impoundments in sufficient quantity and on the appropriate occasions to ensure the integrity of the ecosystems below such impoundments.
- While strategic planning for the future provision of water should remain a central government function, local communities must be treated as full partners in the decision-making process and day-to-day management.
- Any proposed new impoundments must be subject to full Integrated Environmental Management procedures, including environmental impact assessments and effective public participation in the decision-making process – particularly those communities most affected by such schemes.
- Further research must be supported to identify and protect rare or threatened aquatic species, and to eliminate or at least control harmful exotic species like water hyacinth.
- Municipal effluents should be re-used as a matter of policy.
- South Africa should reaffirm its full commitment to international agreements on the protection and conservation of aquatic systems, such as the Ramsar Convention. □

“Because of the lack of suitable planning in the past and gross over-subsidisation – often to curry political favour – much prime arable land has been irrevocably lost.”

AGRICULTURE

THE greatest damage that humans inflict on the Earth – and by implication the greatest threat that humanity poses to its own future survival – is through the practice of agriculture. Huge areas of the planet's natural terrestrial ecosystems have already been destroyed and replaced with artificial agricultural systems, greatly reducing or even negating the ability of the land to control and influence its own climate and chemistry.

Of South Africa's surface area of some 120-million hectares, about 85 per cent is used for agriculture and forestry. However, only 45 per cent of the country receives more than 500mm of rain annually – the generally accepted minimum for dryland crop production – and only around 12 per cent is suitable for cultivation. The rest is mainly natural veld used for grazing.

Because of the lack of suitable planning in the past and gross over-subsidisation – often to curry political favour – much prime arable land has been irrevocably lost: to urbanisation, mining (particularly in the Witwatersrand and eastern Transvaal Highveld), and other activities. Also, injudicious management and the cultivation of crops not ecologically suited to conditions have caused widespread degradation in the form of soil erosion and desertification. Annual soil losses, mostly through poor land husbandry practices, are estimated at between 300- and 400-million

AGRICULTURE RECOMMENDED ACTIONS

- The national strategy for sustainability must include planning to reserve unequivocally the best farmland for agricultural use.
- One central government department of agriculture must serve all farmers.
- Livestock numbers must immediately be brought within the carrying capacity of the range land, and comprehensive educational programmes and extension services must be introduced urgently to explain to stock farmers why this is necessary and to enforce restrictions.
- Effective soil and water conservation practices must be promoted through encouraging proper land husbandry. Urgent government-sponsored programmes must be introduced to halt further soil erosion and rehabilitate areas degraded by previous erosion or desertification.
- All subsidies and incentives which encourage or support the cultivation of low-yield, marginal lands must be withdrawn, and suitable alternative uses – such as game-farming – promoted.
- State-sponsored incentives should be introduced to encourage the adoption of integrated crop and livestock systems and to reduce monocultural practices, to raise the efficiency of fertiliser use, and to promote primary environmental care by farmers.
- Integrated pest management and weed control must be promoted, and the use of fertilisers, pesticides and herbicides strictly controlled through effective regulation, policing and financial incentives.
- Effective government controls must be introduced over irrigation practices to increase efficiency, to reduce environmental impacts such as waterlogging and salinisation/alkalisation, and to adapt such practices to small-scale, diversified agriculture.
- Programmes to promote low-input farming, permaculture and agroforestry in suitable areas should be initiated by government and development agencies. □

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tons annually. Although rates of desertification and Karoo encroachment are a matter of debate, it is widely accepted that the long-term productivity of virtually the entire Karoo region has been substantially reduced. In other biomes, the agricultural potential of millions of hectares has been severely reduced or completely lost.

The question of existing inequalities in land ownership in South African agriculture will also have to be addressed. At present an estimated 50 000 white farmers – many of them heavily subsidised for political reasons and extensively in debt to an amount of R14-

billion – own some 85-million hectares, of which about 14,3-million are arable. The 700 000 black farmers in the “homeland” areas own some 15-million hectares of which only 2,3-million are arable.

Because of the population densities in these areas – largely the result of former political policies – the available arable land is currently some 0,16 hectares per person and is expected to drop to less than 0,1 hectares by the turn of the century. By contrast, South Africa as a whole enjoys a higher proportion than the global norm – 0,51 hectares per person compared to 0,4 – although this is expected to drop to about 0,36 hectares by the year 2000.

FORESTRY

FORESTS are an integral part of Earth’s life-support systems, playing a crucial role in regulating the atmosphere and climate through their ability to store carbon and drive local hydrological cycles. They protect soils from excessive erosion, regulate run-off and reduce the effect of floods and consequently silt loads in rivers. Natural forests are usually highly diverse ecosystems, supporting millions of species and providing human beings with a wealth of benefits. They are also an important part of the resource base for tourism and recreation, and have an inestimable cultural value.

Unfortunately, forests everywhere are under increasing pressure from pollution and acid rain, unsustainable logging, the gathering of fuelwood, and clearing for agriculture and urbanisation. In South Africa, indigenous evergreen forest is the smallest and most widely dispersed of the country’s seven major biomes, and covers just 0,25 per cent of the land surface. With the arrival of the European settlers in the 17th century,



SANF

ABOVE
About 85 percent of South Africa’s land surface has been transformed through agriculture and afforestation.

FORESTRY
RECOMMENDED ACTIONS

- A complete inventory of South Africa's forest resources must be prepared and/or updated by the Department of Environmental Affairs and a comprehensive strategy mapped for their sustainable management.
- Numerous short-rotation fuelwood plantations must be established as a priority in rural areas, after proper consultation with communities involved. These plantations should be close to settlements, to counter the continuing destruction of natural vegetation for fuel.
- Existing state and private sector forestry policies must be reassessed to ensure that they reflect more than just timber management, and that they take into account the maintenance of environmental services and biodiversity, and community needs.
- A complete, state-led re-evaluation of all areas under commercial timber production must be made. Unsuitable areas must be logged, while comprehensive environmental impact assessments must be commissioned before any major new plantations are established on either state or private land.
- Local communities must be drawn into forest management, particularly regarding the possible trade in forest products such as bark and ferns.
- Moves to increase the number of trees in the urban environment by organisations such as Trees for Africa should be supported financially and logistically by all tiers of government.
- Legislation should be enacted to ensure that only sustainably harvested hardwood timber may be imported or exported, and South Africa must support moves to amend GATT (General Agreement on Tariffs and Trade) which inhibits such action at present.
- The increased production of wood alternatives – such as recycled plastic "planks" used to make pallets and furniture – should be encouraged with financial incentives.
- Timber must be priced to reflect its full cost. This includes the cost of production plus any environmental costs imposed on society through reduced ecosystem functioning and/or the loss of any other resources as a result of degradation and pollution. Such pricing must also include user costs: the value of future resource benefits foregone because of the current use (the so-called "opportunity costs").
- South Africa must adopt the Statement of Forest Principles agreed at UNCED and support moves to negotiate a full Forest Convention.
- The recycling of paper must be encouraged at all levels of society.
- The Natural Heritage Programme and the Sites of Conservation Significance programme – "citizen conservation" of important natural sites in private and public ownership – should be vigorously promoted. □

these forests were heavily exploited, with many areas being completely destroyed or reduced to scrub. The remaining state-owned indigenous forests, particularly those in the southern Cape, now appear to be well managed for sustainable yields of timber like yellowwood and stinkwood, and ferns, although there is still major concern about alien plant invaders and the encroachment of exotic species in several areas. Other indigenous forests in private hands are not adequately protected and are rapidly diminishing.

South Africa is a net exporter of wood and wood products of about 17-million tons a year from the 1,1-million hectares under commercial production of pines, wattle and eucalypts. New plantings of up to 40 000 hectares per year are planned. Some of the existing plantations have been established in highly unsuitable sites – including wetland areas, on the eastern shores of Lake St Lucia, and excessively in mountain catchment areas in parts of Natal and the north-eastern Cape. As a result, ecosystems have been degraded, biodiversity reduced, soil eroded and valuable water resources wasted.

Afforestation has threatened individual species like the blue swallow (*Hirundo atrocaerulea*), while *Pinus* species have invaded the fynbos biome, displacing many indigenous plants. New plantings are still occurring on unsuitable land – such as at a site with steep slopes and fragile soils at the scenic Long Tom Pass in the eastern Transvaal.

POPULATION GROWTH

SOUTH AFRICA'S estimated population of 42-million – the third highest in Africa after Nigeria and Ethiopia – is growing at a rate of 2,6 per cent per year, making it set to double in just over 26 years.

Clearly, such a rapidly increasing population is not compatible with a national goal of sustainable living. More people consume more resources and cause more pollution. If current social, economic and political patterns continue, the increasing South African population will cause accelerating soil erosion and veld deterioration; higher pollution levels on land and in air and water; a further deterioration in health, particularly of women and children; and an inevitable lowering of education standards, with the attendant reduction in job prospects and a lessening of the likelihood of achieving an economically secure and healthy lifestyle.

According to the 1991 President's Council Report on a possible future environmental management system for South Africa, this country's rapidly increasing population is indisputably the biggest threat to the environment, and unless this excessively high growth rate is reduced significantly soon, all environmental conservation actions will be futile.

However, the issue is not a simple one, particularly because of South Africa's long history of unequal access to resources. The high-income sector of our society may already have a negative population growth rate, but is responsible for consuming a hugely disproportionate amount of the country's resources and for causing most of its pollution and waste. So merely reducing the overall population growth rate is not going to solve the problems of trying to achieve a sustainable society.

Also, it has been shown worldwide – particularly in Spain and Italy, for example – that population growth rates fall as people achieve higher incomes and standards of living, not vice versa. The most effective method of reducing fertility, and hence reducing pressures on South Africa's natural environment, is the elimination of poverty and rapid social upliftment. This is where efforts must be concentrated, with population growth being tackled as a developmental issue, rather than as a demographic problem.

MARINE RESOURCES

THE oceans are the dominant feature of the "blue planet", covering more than two thirds of its surface and playing a key role in the hydrological cycle, the chemistry of the atmosphere, and the shaping of climate and weather. Although the oceans are so vast, their true biological wealth is concentrated in a relatively narrow strip along the continental shelves (with a maximum depth of about 200m), coastal margins and estuaries. These include the major fishing grounds which produce more than 80 per cent of the world's fishing catch – among the most important source of nutrition for tens of millions of people. South Africa ranks 24th among the world's fishing nations, with more than 90 per cent of its annual catch

POPULATION GROWTH RECOMMENDED ACTIONS

- Traditional opposition to birth control and cultural norms which determine that a large family is seen as a living pension and/or a source of prestige, must be treated with understanding and respect. Nevertheless, urgent education programmes must be initiated by all levels of government on a nation-wide basis to explain why family planning is more desirable.
- All women must be given access to the means of controlling their own fertility and the size of their families.
- Legislation discriminating against women must be removed and empowerment programmes for women initiated, including job creation, and access to land and credit.
- Primary health care facilities – incorporating family planning – must be extended to provide regular access to all sectors of the community.
- Family planning should be an integral part of development programmes.
- There must be proper health and nutrition programmes catering for the special needs of mothers, particularly during pregnancy and post-natally. Breast-feeding must be encouraged for at least four months after birth.
- National education policies should be reassessed to see how the status of women can be improved. □

PART 2 Sites of STRUGGLE

MARINE RESOURCES RECOMMENDED ACTIONS

- South Africa should immediately sign and ratify the United Nations Convention on the Law of the Sea, and play a full role in developing an international regime for the sustainable use of open-sea resources.
- South Africa's sound scientific research of an inter-disciplinary nature into the functioning and composition of the marine ecosystem – the Benguela Ecology Programme, for example, is acknowledged as among the best in the world – must be expanded, encouraged and supported through state funding.
- Such research should form the basis of a national policy for the conservation and natural resource management of both the coastal zone and the open ocean.
- Because it is extremely difficult, if not impossible, to differentiate between cyclical population fluctuations and the irreversible collapse of stocks until it is too late, conservative TACs must be set – applying the Precautionary Principle – based on the best available biological data but also taking into account social and economic factors
- Traditional access to fisheries must be restored. This must be done on a sustainable basis as part of an overall, equitable reallocation of marine resource user rights between small-scale operations, large-scale commercial interests and sports fisheries.
- All dumping into the marine environment – especially hazardous industrial wastes – must be phased out within a short period. Current marine discharges of sewage should be reassessed in a national forum, and all future sewerage facilities should be land-based.
- More effective policing measures, both offshore and inshore, must be introduced as a matter of urgency, with consideration being given to the formation of a full coast-guard service.
- Regulations must be introduced to ensure that the exploitation of non-living resources, such as diamonds and natural gas, do not damage the marine environment.
- South Africa should support the continued moratorium on commercial whaling. □

“Both internationally and in South Africa, little formal attempt has been made to manage the sea for multiple use.”

(worth more than R1-billion annually) being taken in the highly productive cold waters off the West Coast. Both internationally and in South Africa, little formal attempt has been made to manage the sea for multiple use, with former and existing regulations focussing primarily on the exploitation of commercially valuable marine resources.

Unsustainable fishing is the main threat to marine living resources, which in the past were frequently over-exploited. Some fish populations – like the pilchards off the coast of Namibia – have yet to recover. During the past decade, South African authorities have applied a quota system within a Total Allowable Catch (TAC) for each of the various commercial species, combined with closed seasons and minimum size limits, as a means of achieving the sustainable utilisation of fishing resources. This procedure appears to be working successfully for some species, notably hake, although others – like kingklip – still show a serious decline.

Under South Africa's old order, communities' traditional access to marine resources was gradually removed, with preference being given to major companies controlled by large stock owners. Also, it was government policy to allow the fishing industry to maximise catches in "good" years, rather than to set quotas at more conservative levels which would have helped stabilise the industry and prevent the current over-capitalisation and erratic employment opportunities.



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LEFT
South Africa's west coast has extremely rich fishing resources, but access has been biased during the past few decades.

THE COASTAL ZONE

THE shallow waters on the seaward side of this narrow strip include the most productive and diverse habitats in the entire marine environment: estuaries, mangroves, salt marshes, mudflats, seagrass and seaweed beds, and coral reefs. These habitats have a vital ecological function, particularly as nursery areas for commercially valuable fish species. Generally, they provide food and shelter for a huge number of species, including fishes, crustaceans such as rock lobster and crabs, perlemoen (abalone), and molluscs like oysters and mussels. In all, they account for more than two thirds of world fisheries production. These areas also help to reduce the effects of flooding, and are often highly popular for recreation.

The landward side of the coastal zone is where most of the world's population live. Six out of 10 people live within 60km of coastal waters, and some two-thirds of all cities with populations of 2,5-million or more are near tidal estuaries. Within the next two or three decades, the population of this coastal zone is projected to nearly double. Because of this population pressure, this zone is subject to severe pollution, both by direct discharge and via river systems.

More than three-quarters of marine pollution comes from land-based sources, with shipping, dumping, and offshore mining and oil production responsible for the rest. Problems include the uncontrolled discharge of industrial effluents, raw and treated sewage, pesticide and fertiliser residues, and

BELOW
Bottlenose dolphins off South Africa's east coast. This shallow coastal zone is subject to severe pollution from land-based sources.



VIC COCKROFT

THE COASTAL ZONE
RECOMMENDED ACTIONS

- The comprehensive strategy for the management and future sustainable utilisation of the entire South African coastline, compiled by the Council for the Environment, must be formally adopted as a matter of urgency and translated into legislation, with adequate funding where necessary. This strategy stresses the effects on the coastal zone of entire catchments, sometimes far inland, and emphasises the need for an integrated authority to control the land-sea interface.
- A high priority must be placed on preventing marine pollution from land-based sources, with the Precautionary Principle, Polluter Pays Principle and User Pays Principle being applied to the prevention of marine pollution.
- A rational system of protected areas representing all coastal and marine ecosystems should be developed urgently, with effective management plans.
- Aquaculture development should be encouraged through appropriate planning, investment, technical assistance and training programmes, but only on a sustainable basis without negatively impacting on ecosystems.
- Continued research aimed at developing a thorough understanding of the coastal ecosystem must be supported by the central government. □

silt loads from erosion – particularly into bays where the potential for dispersion and dilution is lowest. Human inputs of nutrients into coastal waters now equal natural sources, and will soon outstrip them by several factors, creating huge ecological problems.

In South Africa, large areas of the coastal zone have already been severely degraded, particularly estuaries and coastal wetlands. Major developments like Richards Bay harbour were undertaken before proper Integrated Environmental Management techniques and procedures had been introduced, and have consequently resulted in unnecessary – but now permanent – ecological damage. Lack of effective control in catchments has led to reduced water quality, such as in the important recreational area of False Bay.

“
Africa's rate of urbanisation is the highest in the world, estimated to be doubling every 14 years.”

URBANISATION

CITIES generate and accumulate wealth, and are the main centres for education, new job opportunities, greater economic opportunities, health care and cultural opportunities. But they are usually also immense and wasteful consumers of natural resources, requiring enormous quantities of water, energy, foodstuffs and raw materials, much of which is not used sustainably. Without proper planning, they sprawl over and sterilise large tracts of land. Cities generate massive amounts of pollution which contaminate water, soil and air far beyond their boundaries, while also endangering and reducing the quality of life of their own inhabitants.

World-wide, the trend is towards rapid urbanisation, and this is likely to continue because of long-term structural changes in the global economy. Lack of effective policies for sustainable development of rural economies force many young and economically active people to abandon these rural areas, damaging the social fabric. In South Africa, this trend to rural social disintegration and the development of a largely unsustainable urban framework has been exacerbated by political ideology.

Africa's rate of urbanisation is the highest in the world, estimated to be doubling every 14 years. South Africa is no exception, and this country's urban population is likely to increase from just over 16-million in 1985 to

about 33-million in the year 2000. Already more than 40 per cent of the population live in the four largest metropolitan areas, and by 2010 some two thirds are likely to be concentrated in urban areas.

Poor planning and previous policy decisions have resulted in an appalling shortfall of housing units. The De Loor task group estimates that 198 000 houses must be built each year for the next 10 years to get rid of the housing backlog. Providing land and services for these units (assuming that such numbers can be constructed) will place huge

URBANISATION RECOMMENDED ACTIONS

- The current trend towards rapid urbanisation in South Africa must be recognised, accepted and even encouraged by all sectors of government, non-government organisations and development agencies.
- Existing planning policies at all levels must be adapted to bring about more compact and efficient urban environments. Where possible, the shape of the sprawling, apartheid-planned cities now in existence should be radically redefined towards more compact and manageable units.
- There should be holistic perspectives on planning, with particular attention being paid to introducing measures to reduce social conflict.
- Environmentally-based principles for sustainable living must be introduced as key elements of spatial planning and control at all levels.
- Efficient and sustainable urban transport systems must be developed and sponsored as a central government responsibility, to reduce congestion, pollution and the excessive use of energy.
- Road pricing schemes and parking taxes that charge users of private vehicles the full social cost of their travel should be introduced.
- Outdated zoning schemes must be reassessed.
- Undeveloped natural features within urban areas must be formally protected and, where possible, expanded for their ecological, aesthetic and recreational values, like the Metropolitan Open Space System (MOSS) of Durban, East London and Port Elizabeth, and the Braamfontein Spruit in Johannesburg.
- Anti-pollution laws must be strengthened and properly enforced at all levels of government.
- Municipal energy conservation strategies must be promoted, with citizens encouraged to implement sound and sustainable domestic policies.
- Citizens and businesses must be encouraged to reduce waste and increase recycling, with the municipal authorities providing role models and suitable opportunities and facilities.
- Local authorities must take active steps to build partnerships with citizens' groups, consulting with them regularly and providing full information about local government issues in an easily accessible form.
- Waste water and sewage treatment processes should be reassessed in terms of efficiency and their proper cost, and water should be treated and reused as much as possible.
- Alternative, "safe and cheap" transport forms such as bicycles must be encouraged – for example, through the provision of safe cycle lanes.
- Effective rural development programmes should be formulated to support economically viable communities in rural areas, but heavily subsidised schemes which artificially attempt to promote rural areas – such as the "border industries" policy – must be dropped immediately.
- The conservation of national monuments and other culturally and historically significant features reflecting the values and symbols of all sectors of the population should be consolidated and expanded.
- Large-scale planting programmes – including the creation of urban woodlots – should be undertaken in suitable areas to improve the physical environment of all urban areas, especially low-income areas, in consultation with local communities

PART 2 Sites of **STRUGGLE**

demands and stresses on the natural environment. A more likely medium term scenario is the continued growth and expansion of informal settlements in urban areas, which will nevertheless also require a big increase in services like water, sewage, waste management and health facilities.

To achieve sustainable urban development in South Africa, there will have to be new, creative partnerships between communities, business, development agencies like the Independent Development Trust and Urban Foundation, and all levels of government. Development plans will have to be equitable, sustainable, practical, sensitive to local norms and cultures, and welcome by those affected. Above all, local governments will have to be empowered – both politically and financially – to manage change in the context of an overall ecological approach, in which environmental principles are enshrined in the planning process.

ENVIRONMENTAL EDUCATION

ALTHOUGH environmental education has a long history, until fairly recently formal curricula in the South African education system largely ignored environmental principles. Also, there have been powerful forces effectively nullifying much of the positive benefit of environmental education: advertising and mass entertainment, both in this country and internationally, have promoted over-consumption, ignored the need to conserve scarce resources, and glorified wasteful living practices. The net result is that much of South African society has become accustomed to, or takes as a desirable role model, a clearly unsustainable lifestyle, based on rampant consumerism and characterised by disposable goods and excessive packaging.

Also, many people do not understand the links between individual lifestyles, the alleviation of poverty, the use of resources, environmental degradation and – ultimately – the survival of humanity. They simply do not see how changing their behaviour can help others and have a positive influence on the natural environment. They have to be shown how an acceptable quality of life for all is dependent on the wise, sustainable use of natural resources. A new approach is essential – one in which an understanding of the intricate and often delicately poised balance between humanity and the natural world is emphasised in all spheres.

However, previous “top-down”

BELOW

Pupils in the Cape Peninsula help “Keep the Cape in Shape” during River Day. Environmental education must be conducted in a participatory way.



THE ARGUS

attempts at environmental education, based on simplistic attitude change and behaviour modification, have largely failed, alienating the public and causing the would-be educators to be branded as arrogant. It is therefore critical that environmental education is conducted in a participatory way, enabling the learners – the public, community groups, school pupils or whoever – to be active participants in the learning experience.

Non-formal environmental education through the efforts of non-government organisations will also have a vital role to play, by helping to create public awareness about issues such as soil erosion, desertification, global warming, the loss of biodiversity, pollution and the need for water conservation.

Environmental education should aim, firstly, at providing the required understanding of political processes so that all citizens can participate actively and effectively in decision-making about environmental issues on a local, national and global scale. Secondly, it should enable all citizens to acquire the necessary knowledge and understanding – including, critically, that of ecological principles and processes – which will enable them to make informed choices and decisions about environmental issues. In other words, it must promote critical thought.

MINING

SOUTH AFRICA is an extremely mineral-rich country. It has the largest known deposits of gold, chromium, manganese, vanadium, andalusite and the platinum-group metals, as well as huge reserves of other valuable metals and minerals like coal, nickel, silver, antimony, asbestos, diamonds, copper, iron ore, zinc, lead, phosphate, uranium, titanium and zircon.

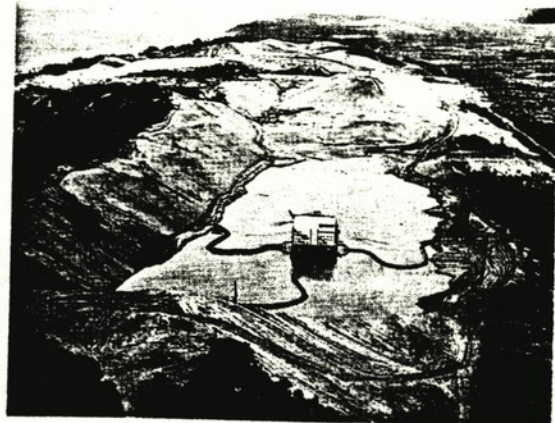
The country's previous economic growth was largely sustained by the exploitation of these non-renewable resources, with mining contributing some 29 per cent of Gross Domestic Product in 1961. This

ENVIRONMENTAL EDUCATION RECOMMENDED ACTIONS

- South Africa's overall education policy must include reference to the development of a sound environmental ethic within the community as a whole.
- The status of environmental education must be reviewed to ensure that it becomes an integral part of formal education at all appropriate levels.
- Non-formal education programmes with a similar aim should be initiated.
- The training skills required to create a sustainable South Africa must be determined and a strategy developed to meet them.
- An Advertising Standards Authority should incorporate the principles for sustainable living into a legally enforceable moral code for advertisers.
- Laws relating to labelling and testing claims of manufacturers must be tightened and enforced.
- Manufacturers should be obliged to disclose information relating to the production of their goods, such as energy consumption, the use of raw materials, toxicity of by-products and the extent of recyclability.
- Economic incentives should be introduced to encourage recycling at all levels, and to the manufacturing industry to produce durable, as opposed to rapidly obsolete, goods through the use of clean technology processes.
- The packaging of goods should be minimised, simplified and discouraged through economic disincentives/incentives. □

BELOW

Mining for minerals in the coastal dunes near Richards Bay on the north coast of Natal.



JOHN YELD

MINING
RECOMMENDED ACTIONS

- Existing mineral rights legislation must be reassessed, particularly insofar as holders of mineral rights are given an inalienable legal right to exploit their options, despite serious ecological objections.
- The exploitation of minerals with limited reserves should be carefully husbanded, unless a strong case can be made for the rapid exploitation of any particular mineral to be able to take full advantage of short-term market idiosyncrasies which will provide major social and environmental benefits.
- Regulations in respect of air and water pollution, waste disposal and water abstraction must be strictly enforced by an adequately resourced inspectorate.
- The rehabilitation of mines which are no longer worked must be undertaken by the State.
- A percentage of profits from the exploitation of all non-renewable resources should be directed towards developing alternative forms of employment for communities likely to be affected when such exploitation ceases.
- Clean technology techniques must be installed from the outset in any new beneficiation projects, and economic incentives/disincentives should be applied to persuade owners of existing plants to switch to cleaner and more environmentally sound technologies.
- Because most "rehabilitated" mining land is no longer suitable for its original land-use – most often agriculture – any proposed exploitation must include an exhaustive, long-term cost-benefit financial analysis.
- Responsibility for making and monitoring environmental regulations affecting the mining industry should not be vested in the Department of Mineral and Energy Affairs – the same department charged with promoting mining activities.

“
*Mining is by nature a
non-sustainable activity,
and cannot support
development in the
long term.*”

has dropped significantly during the past three decades, down to just under 13 per cent in 1990.

However, the contribution of the 1098 mines and quarries producing some 60 different minerals is still significant: mineral sales were worth R37 700-million in 1989, with export sales accounting for just over half of all export revenue.

But mining is by nature a non-sustainable activity, and cannot support development in the long-term. Eventually, there must be a transition to a more sustainable economy based on renewable resources.

Mining activities, which cover some one per cent of South Africa's land surface, have caused massive environmental damage and pollution in many parts of the country. This has included the discharge of polluted water back into the environment, air pollution (from burning coal seams), waste generation, the release of ozone-depleting CFCs from huge refrigeration plants used to cool deep mines, unsightly and space-wasting dumps, and physical devastation through unrehabilitated open-cast mines.

For example, on the West Coast, some of the prospecting trenches for diamonds are so massive that they have been marked as features on 1:50 000 topographical maps.

In addition, mining practices have in the past squandered scarce resources, particularly water and land, and caused severe environmental health problems for many workers.

Mineral beneficiation has also caused significant environmental damage. Because of past government policies which have tended to facilitate the maximising of mining profits, the true environmental costs of mineral exploitation have been passed on to the community, rather than being carried by the industry and shareholders.

COMMERCE AND INDUSTRY

THE economy and the environment are inextricably mixed. A healthy environment is not only of ecological importance, but essential to the economic welfare of the country as a whole. A sound economy cannot be based on a damaged environment and natural resource base.

Economic development without environmental responsibility is neither acceptable nor practical. It is not a matter of chance that those companies which are leaders in their respective fields accept that environmental issues are inextricably bound up in political, economic and social issues, and accept caring for the environment as a social responsibility. They have already discovered that conservation is good for business; that eco-responsibility today will pay off in the form of improved dividends tomorrow. This is not just a matter of improving public relations – more resource-efficient technologies, energy efficiency, waste reduction and pollution prevention can and do increase profits substantially.

It is common cause that an expanding economy is needed to generate the wealth required to improve the quality of life for all South Africans and to pay for the social upliftment programmes that are desperately required. But such economic development must follow a different pattern from that practised previously in both South Africa and the industrialised nations of the West, which blighted the environment and exacted a huge social toll. It must be sustainable, operating within and not beyond the finite limits of the natural environment, and the emphasis must be not only on growth in the number of goods and services, but equally on the growth of personal and human resources.

Responsibility for ensuring sustainable economic development in the future South Africa must be shared between the government, which must regulate and manage economic policy; environmental experts, who must

“*Economic development must follow a different pattern from that practised previously ... which blighted the environment and exacted a huge social toll.*”



ART PUBLISHERS

LEFT

Johannesburg: the financial heartland of South Africa. Sustainable living will require the restructuring of many sectors of this country's economy.

PART 2 Sites of **STRUGGLE**

advise on the sustainable use of natural resources and any effect on ecosystems; and commerce and industry, which must introduce the ethic for sustainable living into their corporate goals and philosophies. This means:

- ◆ adopting sound practices, from the planning stage through to realization, that avoid environmental damage; monitoring all impacts; and consulting with local communities and the public at large;
- ◆ introducing processes that use minimum quantities of raw materials and energy, reduce waste and prevent pollution; and
- ◆ producing "environmentally-friendly" goods which have a minimum negative impact on human communities and the Earth.

Moves towards sustainable living in South Africa will require the restructuring of many sectors of the economy. However, such restructuring should not be viewed negatively; rather, it should be seen as a positive opportunity to turn the country from its previously destructive and wasteful economic policies and practices towards a prosperous, yet environmentally sound, future.

COMMERCE AND INDUSTRY RECOMMENDED ACTIONS

- The country's natural resources must be available on an equitable and sustainable basis to all those who want to participate in their exploitation. Where previous policies and practices have restricted individuals or sectors of the community from participating – especially in traditional areas such as fisheries – existing concessions must be withdrawn and renegotiated equitably.
- South Africa's overall economic policy should emphasise future growth through the development of "environment-friendly" industries. This means the country's competitive advantages must be stressed, through utilising both directly exploitable natural resources, such as fishing, game farming and wildflowers, and indirectly exploitable resources, through ecotourism, for example.
- The use of environmental auditing as a management tool should become part of good business management. Businesses must be encouraged to commission objective audits on a voluntary basis and to disclose results as a means of enhancing their credibility. Dialogue should be initiated between the government, the business community and other interested and affected parties to see whether compulsory environmental auditing and full public disclosure of the results would be in South Africa's best long-term interest.
- The "Polluter Pays Principle", "User Pays Principle" and "Precautionary Principle" must be adopted as essential components of government economic policy and corporate philosophies.
- Effective mechanisms must be developed to ensure safe and healthy working environments in all sectors of the economy.
- All industries based on the use of natural resources must be required to use them economically.
- The tourist industry must be regulated and controlled to ensure that its impact on nature is minimised and that the resource base on which it is founded remains intact.
- Regular dialogue between the government, business and environmental groups should be encouraged.
- Consideration should be given to a specific tax or levy on business which will be used exclusively to rehabilitate natural systems, resources or habitats damaged or degraded by previous business operations where the principals are effectively no longer legally responsible – such as asbestos mining operations at Mafefe in the north-eastern Transvaal. □

ALIEN INVASIVES

SOUTH AFRICA'S natural environment has been invaded by more than 100 species of alien fauna and flora. This has resulted in widespread ecological damage and huge expense, both in terms of lost agricultural potential and other land-use options, estimated at several billion rands, and in efforts to remove these species. In areas of dense plant infestation, for example, clearing costs can exceed R1 000 per hectare, with several follow up operations still necessary afterwards.

Major problem plants, many of which have spread dramatically over the past few decades and now infect hundreds of thousands of hectares, include hakea, Australian Acacias, Mauritius thorn, triffid weed, lantana, water hyacinth, nasella tussock grass, various pine species and jointed cactus.

Alien fish species like trout and bass have displaced endemic species from some river systems, while exotic birds like European starlings and Indian mynahs are arguably a severe nuisance in urban areas and possibly also in agricultural areas, although this is unquantified. Alien rats and mice are also major pests in human settlements, while the Argentinian ant is a threat to fynbos because it displaces the seed-dispersing indigenous ants.

South Africa's precious water resources have been seriously depleted by alien plant invasions. Riverine habitats in particular are highly susceptible to invasive plants, and the upper and middle reaches of numerous rivers are almost completely choked with dense stands of silver and black wattles (*Acacia* species). In fynbos mountain catchments, dense stands of invasive plants have reduced the water production by half, and pose a far greater fire hazard than the natural vegetation of these areas.

All the seven major biomes have been affected by alien plant invasions, with the fynbos, savanna and forest areas worst hit. To date, alien vegetation control in the formally reserved areas of the sub-continent has concentrated on trees and shrubs, with a success rate of about one in six where specific control measures have been instituted. Invasions by herbs and grasses have been largely overlooked, and as yet there is virtually no ecological information in this regard.

While some biological control programmes have proved (or are proving) remarkably successful – such as for *Hakea sericea*, *Acacia longifolia* and *A. saligna* in general terms such programmes are slow, relatively expensive and often limited in application.

Some alien plant species do have a commercial and social application – for example, informal communities

BELOW

Fire sweeps across Table Mountain. Alien vegetation poses a far greater fire hazard than indigenous plants.



THE ARGUS

PART 2 Sites of STRUGGLE

ALIEN PLANT INVASIONS RECOMMENDED ACTIONS

- All land management authorities should initiate comprehensive monitoring systems for the early detection of invasive alien plant and animal species, and must be encouraged to keep better records in this regard.
- An incentive/disincentive scheme should be introduced to encourage private landowners to clear invasive alien species from their property and plant indigenous species or encourage these to regenerate naturally.
- All state and semi-state bodies must initiate and/or expand existing alien control programmes on land under their control, setting realistic targets and making every effort to meet these. Job-creation schemes should be introduced in this regard.
- No new species should be introduced into the country without a comprehensive impact assessment, and then only for highly specialised applications.
- Aquaculture developments in particular must be monitored to prevent new threats to indigenous ecosystems through the introduction of potentially invasive species. □

in the Cape Town area both use and sell firewood from *Acacia* species, with transactions worth an estimated R25-million annually. These tree species are also used to produce charcoal, a business with an estimated annual turnover in excess of R3,5-million. But studies have shown that fewer than five per cent of households in Cape Town's informal settlements are dependent on fuelwood. In the fynbos biome in particular, the incredibly diverse indigenous vegetation has far greater economic potential as a tourist attraction than do the alien stands which are displacing them. Also, the rapidly expanding cut wildflower industry is already worth more than R20-million a year.

BELOW

Individuals can contribute to a sustainable future by adopting a healthy and environmentally-friendly lifestyle.

INDIVIDUAL ACTION

"WHAT on Earth can I do?" This is a question individuals frequently ask, because it is all too easy to feel overwhelmed by the huge scale of international problems like global warming, ozone depletion and the massive loss of biodiversity. But these problems are only the accumulated effect of actions by individuals. For example, countless millions of tons of poisonous emissions are released from private cars each year, including nitrogen oxides, hydrocarbons and lead which contribute to acid rain, smog, global warming and various health problems.

If many individuals start to make small and simple changes in their personal lifestyles and consciously adopt the ethic for sustainable living, collectively this *will* have a hugely beneficial effect on the health of the planet.

There are numerous actions which individuals can take, and many books and pamphlets are available which set these out. On the next page are a few suggestions to start with.



THE ARGUS

INDIVIDUAL ACTIONS FOR SUSTAINABLE LIVING
RECOMMENDED ACTIONS

- Join a local environmental group and give it your active support. Encourage friends and colleagues to do the same.
- Be active and vociferous in your opposition to environmentally unsustainable or unfriendly actions – for example, take the time to lobby MPs and local councillors, sign petitions and write to the media. Become involved in local planning issues.
- If you can afford to, buy bicycles for yourself and your family and use these wherever possible instead of a car. Lobby for increased bicycle lanes on public roads.
- If you own a car, have it serviced regularly – an efficient engine burns more cleanly.
- Use public transport where this is available, and lend your support to campaigns to extend and improve the public transport system.
- Share transport in private vehicles by forming lift clubs.
- Install insulation in the roof of your home and around the hot water cylinder. Check that the cylinder is not set too high – between 55°C and 60°C is adequate.
- When buying electrical appliances, make sure they are energy efficient. Ask to see the comparative energy consumption figures.
- Make sure lights and heaters are switched off when rooms are not being used, and switch off the hot water cylinder when going away for extended periods.
- Consider installing a solar heater in your home. The initial outlay may be expensive but you will save considerably in the long term.
- Choose fluorescent light bulbs instead of ordinary incandescent bulbs. These use significantly less electricity and, although initially more expensive to buy, they last up to eight times longer.
- Showering instead of bathing can save up to one third of the amount of water.
- Start a compost heap for your garden with all the left-over vegetable matter from the kitchen and garden debris.
- Choose only organic fertilisers and avoid all commercial pesticides and herbicides wherever possible. Be especially careful how you discard old bottles of garden poisons.
- Use recycling facilities for glass, paper and plastic where these are available. If they aren't, ask your local authority or community organisations to install them.
- Be selective when shopping and choose environmentally-friendly goods if possible – for example, buy glass products instead of plastic, avoid excessive packaging, always choose goods in returnable or reusable containers and encourage your local supermarket to cut down on wasteful practices like handing out an unnecessary number of plastic shopping bags.
- Use aerosols and air-fresheners sparingly, and select only those which state that they are CFC-free.
- Avoid using colouring for toilet water as this introduces chemicals into the sewage system which can be dangerous and costly to filter out.
- Where they are available, choose low-flow showerheads and two-flush toilet systems which use appropriate amounts of water for solid and liquid wastes.
- Use recycled paper wherever possible.
- Encourage your employers or employees to save water and energy and use environmentally-safe products wherever possible.
- Be especially careful at the coast – world-wide, more than two million seabirds and 100 000 mammals like seals and dolphins die each year after being trapped in discarded rubbish.
- Anglers have a particular responsibility to handle their fishing gear with discretion – discarded hooks, sinkers, nylon line and nets are extremely hazardous to most forms of marine life. □

THE ROAD AHEAD

Implementing the strategy

“The current political flexibility provides an ideal opportunity to infuse the goal of sustainable development into future policies and planning.”

C*aring for the Earth* poses some tough challenges and sets some politically difficult choices. There are no easy solutions. Obviously, this document is neither the start of the process towards sustainability, nor does it pretend to present all the answers. Other environmental and political leaders, writers and organisations – some mentioned in the bibliography – have suggested both the same actions, perhaps expressed differently, and alternatives to achieve sustainability. Some actions have already been taken, at various levels of government and by private individuals and non-government groups and organisations.

Unfortunately, the South African situation is severely compromised by the current political state of flux. Many of the recommended actions – particularly those demanding substantial policy shifts and financial commitments – are unlikely to be introduced before a new political dispensation is in place.

But the current constitutional hiatus is no excuse for inaction. In fact the current political flexibility provides an ideal opportunity to infuse the goal of sustainable development into future policies and planning. There is much that can be done in the short-term by all sectors of South African society: individuals, citizens' groups, NGOs, local communities, local and regional authorities, the government, political movements and parties, and South African representatives on international bodies.

What is set here is a broad challenge: a challenge which must be taken up, considered, discussed, debated, argued, disputed, reviewed, agreed, altered or even rejected and substitutes suggested. But there must be action, for the one area of common ground in the process of trying to achieve a sustainable society is that we must all act *now*, before it is too late.

Funding the transition to sustainability

ACTIONS to achieve sustainability will need funding. Although many of the suggested actions set out above will pay for themselves – and even save money – by reducing waste and increasing efficiency and prosperity, other actions will require direct funding: like financial assistance for businesses to adopt resource-efficient and environment-friendly technologies; money for the rehabilitation of degraded environments and the conservation of biological diversity; short-term subsidies to support the switch to

FUNDING THE TRANSITION TO SUSTAINABILITY
RECOMMENDED ACTIONS

- South Africa's military budget must be substantially reduced and funds transferred to social upliftment and environmental protection programmes.
- A national lottery scheme should be investigated, the profits from which could be shared between education, housing, health care and environmental protection programmes.
- A system of Earthcare Bonds, either redeemable or non-redeemable, could be instituted. The proceeds from their sale could be used to build up a capital fund for investment in those programmes required to give effect to the national strategy for sustainable living.
- Programmes for the greater commercial sponsorship of conservation should be investigated.
- A small levy on foreign tourists or a dual tariff system for entry to national parks and nature reserves – as successfully applied in Botswana and Kenya, for example – could be considered as a means of funding specific programmes identified by the national strategy as urgent priorities for the maintenance of biodiversity which attracts such tourists to South Africa.
- Appropriate multilateral and bilateral assistance programmes should be negotiated wherever possible.
- Further privatisation of some government functions could be considered, with the proceeds

sustainable agricultural productivity; funds for planting woodlots and increasing energy efficiency ...

Until now, environmental protection and services have been downplayed and effectively side-lined by the government. In the 1992/93 financial year, the "Cinderella" Department of Environment Affairs had a



RIGHT

Military spending must be further reduced and funds transferred to the rehabilitation of degraded areas.

PART 3 The Road **AHEAD**

MONITORING AND EVALUATION RECOMMENDED ACTIONS

- A small, professionally staffed monitoring and evaluation unit must be created jointly by the government and NGOs, to manage, promote and review the national strategy for sustainable living. This unit must not be allowed to develop into a major bureaucracy.
- It must create a database and be given authority to elicit all the required information and reports necessary for its task.
- The unit's information must be accessible to the public, and it must publish regular interim implementation reports, showing progress towards the goal of sustainable living in South Africa and making suggestions for new or revised targets.
- The unit should also co-ordinate the efforts and activities of partners, sponsors and collaborators. □

miniscule operating budget of just R207-million; for 1993/94, it was increased marginally to R221-million. This short-sighted approach must be superseded by an awareness that environmental issues are inextricably integrated with all other sectors of the economy. The government must adopt a cross-sectoral perspective which should be reflected in the country's budget. In particular, it must be recognised that the major threat to the future welfare of South Africa and the sub-region is not military action from a hostile force. Rather, it is land degradation and soil erosion, deforestation, global warming, competition for scarce water resources, human population growth, excessive consumption of resources, and the movement of refugees from environmentally degraded areas.

Despite a 14 percent reduction in real terms to R9 335-million in 1993/94, this country's military budget is still grossly inflated, and a major proportion of the Defence budget must be diverted urgently to meet these real threats to South Africa's welfare.



RIGHT

The major threat to South Africa's future welfare is not armed conflict from outside its borders, but growing competition for increasingly scarce natural resources.

Monitoring and Evaluation

WITHOUT monitoring and evaluation, we cannot learn from our experiences. We need feedback to see which actions have been implemented successfully; which failed, and why; whether targets and policies were realistic, overly ambitious or too modest.

Conclusion

THE Brundtland Commission's report *Our Common Future* contained these prophetic words back in 1987: "The next few decades are crucial. The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability. Security must be sought through change."

South Africa is undergoing a period of intense and often stressful change. Although the focus of such change is primarily political, the scope created by political developments provides an ideal opportunity to demonstrate just how and why the philosophy of sustainable living offers the best long-term prospects for a new, just, socially equitable and environmentally sound society. Indeed, many would argue that this is the only possible way forward for South Africa, the way by which the numerous and varied scars of the past can be healed and the future social and environmental health of the nation assured.

The famous French agronomist and ecologist René Dubos had this to say: "We must seek our way home. We can manage the Earth so as to create environments that are ecologically stable, economically profitable, aesthetically rewarding and favourable to the continued evolution of civilisation. We need only muster the will."

Caring for the Earth shows us how to muster that will; it demonstrates how to set off confidently on that long road home. □

“*Sustainable living offers the best long-term prospects for a new, just, socially equitable and environmentally sound society.*”

RIGHT
Lighthouse at Knysna lagoon. "Caring for the Earth" is the beacon that shows the course towards sustainable development.



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CARING FOR THE EARTH — SOUTH AFRICA

This document is based on a original publication, *Caring for the Earth — A Strategy for Sustainable Living*, which was produced jointly in 1991 by three of the world's most influential environmental organisations: the World Conservation Union (IUCN), WWF-World Wide Fund for Nature, and the United Nations Environmental Programme (UNEP). The strategy, based on a new ethic of sustainability, defines how to relieve widespread human poverty and misery, and reverse the associated environmental degradation and destruction on a global scale.

Caring for the Earth — South Africa relates this strategy with its international focus to South Africa's unique social, economic, political and environmental problems and characteristics. It recommends actions to achieve sustainability across a broad spectrum of activities — including agriculture, mining, forestry, commerce and industry, fishing, environmental education, the provision of energy, and urbanisation — and suggests that the new ethic of caring provides the most suitable basis for building a new, democratic and just South African society.



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