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SUSTAINABLE DEVELOPMENT
FOR BEGINNERS
GEM DISCUSSION DOCUMENT
LESLEY LAWSON - OCTOBER 1991

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The concept of sustainable development (SD), which has been used since the 1970s is now the latest environmental buzzword and crops up in the title of nearly every environmental report written today. This term has been given new life by the forthcoming United Nations Conference on Environment and Development (UNCED or the Earth Summit) in Rio in 1992, which has led to a range of local initiatives on the challenge of sustainable development.

The aim of this report is to take a critical look at the concept and how it is understood by different environmental interest groups in South Africa today and to explore areas in which it might be useful for GEM to work.

This report does not attempt to deal with any one paper on Sustainable Development in any depth, but rather to identify different tendencies and approaches. /

2 THE INTERNATIONAL CONTEXT

The term SD first received wide currency on the publication of the World Conservation Strategy (WCS) in 1980. The authors of this report were the IUCN (the International Union for Conservation of Nature and Natural Resources), the UNEP (UN Environment Programme) and the WWF (World Wide Fund for Nature).

The WCS basically said that humanity has no future unless nature and natural resources are conserved. But that conservation will not be achieved without development to alleviate the poverty of the (third) world's millions. The WCS developed three objectives:

- t essential ecological processes must be maintained

- t genetic diversity must be preserved

- t use of species and ecosystems must be sustainable

This concept was further refined in 1987 in "Our Common Future", the World Commission on Environment and Development (WCED or UNCED) report. (Also known as the Brundtland report after the commission's chairperson Gro Harlem Brundtland - leader of the Norwegian Labour Party.)

One of the major differences in this new approach was the central role given to human needs, the explorations between the link between poverty and environmental abuse and the responsibility of developed countries to the third world.

The meaning of SD here was "meeting the needs of the present without compromising the ability of future generations to meet their own needs."

WCED outlined the elements of SD internationally. They were:

- i Revive growth - poverty is a major source of environmental

degradation.:.economic growth must be stimulated in developing countries while enhancing the resource base.

t Change the quality of growth - Revived growth must be of a new kind in which sustainability, equity, social justice and security are major social goals.

a Conserve and enhance the resource base - Sustainability requires the conservation of environmental resources such as clean air, water, forests and soils; maintaining genetic diversity; using energy, water and raw materials efficiently. Per capita consumption of natural resources must be reduced and a shift to non-polluting products and technologies encouraged.

2 Ensure a sustainable level of population - population policies should be formulated and integrated with other economic and social development programmes.

2 Reorient technology and manage risks - The capacity for technological innovation needs to be greatly enhanced in developing countries, and technology changed to take environmental factors into account. Greater public participation and free access to relevant information should be promoted.

a Integrate environment and economics in decision-making - enforcement of wider responsibilities for the impact of policy decisions.

e Reform international economic relations - improve market access, technology transfer, international finance to help developing countries.

e Strengthen international cooperation - higher priorities must be assigned to environmental monitoring, assessment, research and development and resource management in all fields of international development.

2.1 Progress

By mid March, 1989, 22 governments and all UN organisations had submitted reports to UN Secretary-General de Cuellar that illustrated a broad acceptance of the principles in "Our Common Future".

In "Signs of Hope - Working towards our common future", the author summarizes important international progress towards sustainability in the years between the Brundtland report and early 1990. It describes the inter-governmental organisation and discussion around SD as well as the adoption of international treaties on - the ozone layer, toxic waste and trans-boundary air pollution. It also describes positive steps taken by certain western countries on air pollution reduction (SO_2 , NOX - 12 western European nations), reduction of carbon dioxide emissions (Netherlands, Norway, Sweden, Holland), soil conservation (Australia, USA) and control of agro-chemicals (Netherlands, Sweden, Denmark).

Signs of Hope these may well be, but little real progress has been made around the WCED recommendations of 1987. The authors of a recent IIED (International Institute for Environmental Education) booklet on

sustainable development say "Four years on, no government in the world has made any major change in policy designed to convert the unsustainable to the sustainable". ("Defending the Future - a guide to sustainable development" - Holmberg, Bass and Timberlake.) They point to the deplorable lack of action around global warming to support this. Even though scientists at the Second World Climate Conference in Geneva in late 1990 insisted that action be taken now around the reduction of greenhouse gasses, and that the technology was available to do this, the conference ended with government ministers unable to agree on concrete actions to be taken or limits to be set.

They conclude: "in short, everyone's talking about sustainable development, but no-one has ever got around to doing it - despite mounting scientific evidence that much must be done quickly".

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2.2 Preparing for the 1992 Earth Summit
In October 1991 (embargoed document) the original three (IUCN, WWF, UNEP) published a restatement of the WCS entitled "Caring for the Earth - a strategy for sustainable living". This document is both an analysis and a plan of action and is designed to meet two fundamental requirements. These are - to secure a new world ethic for sustainable living and to integrate conservation and development. The document is divided into three parts.

Part 1 defines the principles of a sustainable society and recommends 58 actions. These principles revolve around the respect and care for the earth's vitality and the quality of life of its human communities. Part 2 describes 62 actions within the different environmental sectors, such as energy, industry, land etc. Part 3 deals with implementation and follow-up.

The principles of a sustainable society are defined as follows:

- t Respect and care for the community of life
- 2 Improve the quality of human life
- t Conserve the earth's Vitality and diversity
- t Minimize the depletion of non-renewable resources
- 2 Keep within the earth's carrying capacity
- t Change personal attitudes and practices
- t Enable communities to care for their own environment
- t Provide a national framework for integrating development and conservation
- t Forge a global alliance

Various UN teams are drawing up background papers for the June 1992 Earth Summit. Here conference organiser Maurice Strong will invite world leaders to sign an Earth Charter of environmental and economic

principles. He also wants them to put their names to a document called "Agenda 21" which will set out a long list of different targets and schedules for solving particular environmental problems. At the summit the leaders will be asked to approve 3 resolutions on:

- e institutions that will monitor their actions
- t building scientific and technological capabilities - especially in the third world

- t financial processes which can transfer clean technologies to poor countries so that they can advance their economies with the least environmental damage.

On the table will also be two international agreements - one on biodiversity and one on climate change.

It should be noted that many of the programmes finally adopted in Agenda 21 will be restatements of what the UN development agencies and governments have been trying to achieve for years (New Scientist, 10 August, 1991).

2,3 Involving the Business Community

Special attention has been focussed on the future role of the business community and its participation at the Earth Summit. The Business Council for SD has been appointed to advise the conference on a business perspective on SD. The BCSD consists of some 50 international business leaders and is headed by Stephan Schmidheiny. South African supermarket magnate Raymond Ackerman is on this council.

In a December 1990 interview, Schmidheiny said that the major challenges for business are - closing material cycles to reduce waste, minimizing energy input and the use of renewable energy resources. He said that these goals must be made a reality in individual industries and corporations.

Schmidheiny thinks that "generations rather than years will have to go by before we come up With development that more or less corresponds to the requirements of sustainable development".

He also said that there was a danger that the Brazil conference would not lead to any concrete steps being taken and that there "is always the not insignificant risk that people would exhaust themselves in wordy statements".

An UNCED background paper has outlined a number of principles for sustainable business development. Some of these are:

- t Uniform health and safety standards, irrespective of plant location

- i Cleaner production

- t The inclusion of socio-cultural factors in environmental impact

assessments

Transferring only appropriate technologies

Environmental literacy for employees

Establishment of mechanisms which ensure "transparency of environmental management practices and information and peer review".

3 CRITIQUE OF THE CONCEPT OF SUSTAINABLE DEVELOPMENT

Many problems have been raised in the international community around the concept of SD and the forthcoming Earth Summit. These can be characterised simplistically in the following ways.

i:

Sustainable Development is clearly necessary, but the 6N-type recommendations are unrealistic.

The concept of SD is open to so many different interpretations it becomes vacuous.

SD is a contradiction in terms. No development is sustainable. Sustainable development is the newest weapon in a campaign by western industrialised nations to dictate third world economic policies. To catch up, third world countries need rapid economic growth.

SD is just today's buzz word. The rhetoric has changed, policies have not. Development policies continue to favour large scale projects which maximise political advantage and short term economic returns.

It is already too late - we have exceeded nature's capacity for self regulation and are now in the business of scientific and technological engineering and control for survival.

At worst SD is part of a reformist strategy where environmentalists are trying to work out a way of having their cake and eating it. What is required is a clearer concept of our place in the natural order (the deep ecology perspective).

The UN, in its support for authoritarian governments, is not the best forum for debating a new equitable environmental world order. Also the UN, dominated as it is by the first and second world, can not deal justly with third world problems and needs.

This is not the place for a detailed discussion of the merits of these points, but in order for us here in South Africa to avoid some of the circles in the international debate, it is worth considering some aspects.

In the IIED booklet "Defending the Future - a guide for sustainable development", the authors discuss a number of difficulties with the concept. The most serious problem they say, is that it is an ideal

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which is difficult to align with current political systems. On the one hand participatory democracy is the best system for adequate environmental management. On the other hand one is appealing for the rights of future generations - a factor not built into modern democratic systems, or the free market system.

This aspect is obviously relevant to our task in South Africa today, as we grapple with a new democratic political order. How can a new government begin to convince voters of the needs of future generations when their current needs are not met? Even if the new government has a stated commitment to an environmentally sustainable future, how will it be able to resist the pressure to "borrow" resources from future generations?

The IIED authors focus part of their discussion on the "North/South" divide - again with relevance to our situation in South Africa. They criticise the preparatory meetings of the UNCED committees in August 1990 for failing to address the serious changes necessary in the international and national economic order. They point out that the net financial transfer to developing countries has decreased from 22.7 billion US dollars in 1981 to minus 51,6 in 1989. Despite the fact that the WCED has stated that the debt crisis is a major barrier to sustainable development, this growing problem has received little attention.

The IIED authors conclude that "the debate must now move from a repetition of concerns for the environment towards a practical sorting out of sustainable development paths. The (1972) Stockholm Conference demanded environmental rights: the Bra211 conference - twenty years on - must assign development responsibilities which can realize those rights."

4 THE SD DISCUSSION BACK HOME

There have been a number of recent local initiatives which have attempted to come to terms with the meaning of sustainable development in South Africa. These are:

"Building the foundation for sustainable development in South Africa" - CSIR. Draft, July 1991. This document has been prepared by the CSIR and will, if accepted, form the SA government's report to the Earth Summit.

t "Towards sustainable development in South Africa" - Environmental Monitoring Group, Western Cape. Draft paper, August, 1991. This is an independent group with links to the ANC.

t "Future environmental policy for a changing South Africa" - ANC discussion paper, prepared by Max Sisulu and Stan Sangweni, October 1990.

t "An environmental policy for the Pan Africanist Congress of Azania" - discussion document by Barney Desai, October 1990.

"Reds and greens - labour and the environment" - essay by COSATU

trade unionists Rod Crompton and Alec Erwin in "Going Green", Cock and Koch (eds) 1991. The thinking in this document will underlie any environmental policies formulated by COSATU trade unions.

1 "SA Environments into the 21st century" - C Sunter, R Siegfried, B Huntley, Human Rousseau and Tafelberg, 1989. Clem Sunter is the scenario planner for Anglo American, and as such his views are influential in the business community.

9 "Interdisciplinary research and community development " - C M Breen, T Little, A McIntosh, D A Bear and M Mander. Occasional Paper 76, Institute for Natural Resources, 1991. The INR carries out research into sustainable rural development and is attached to the University of Natal. It has several influential projects in KwaZulu.

Other papers on SD are forthcoming:

i: The President's Council report on the Environment (due October 21, 1991).

1 The proceedings of the SA International Conference on Environmental Management (28- 29 October 1991) - which will reflect the views of SA commerce and business leaders. This group is also considering the possibility of submitting a statement to the Earth Summit.

Some description and general comments on these documents follows.

4.1 - The CSIR Document

This is a 241 page document prepared by the CSIR under contract to the Department of the Environment. It is a description of the state of the SA environment which has been compiled from scientific reports and has been commented on by several different interest groups. A second draft is underway. -

The CSIR report, while acknowledging the necessity for SA and the world in general to move towards sustainable development, does not attempt to outline what sorts of policies this will require. They confine themselves to a description of SA's environmental problems. The report also summarises the steps the current government has taken to solve environmental problems, as well as some of the scientific research that is being done in key areas, and the activity of some NGOs in the field of the environment. '

The report is divided into four parts which deal with - the SA resource base; natural resources and environmental problems; current environmental policies and programs; principles and opportunities for sustainable development.

Under the problem section the report deals with - climate, ozone depletion, vegetation change, deforestation and drought, soil loss, biodiversity, marine resources, pollution (water, air, marine), work environment, coastal mismanagement, community health, poverty and inequality, macroeconomic policy.

This is a thorough overall description of SA's environmental problems, but because of its scientific approach fails to conceptualize some of our most serious problems in a useful way. For example the section on soil deals with the natural causes of soil loss and degradation without mentioning their root causes in SA's land and agricultural policies. On the maps of soil fertility the "national states" are blacked out. Land rights and distribution, and their relationship to environmental degradation do not feature at all in the problems section.

Although the authors acknowledge the human-centred approach of the UNCED literature they do not factor this approach into the body of the report.

It is the conclusions and recommendations section (6 pages) which is the weakest of all. Here the authors move from a general statement of the challenges of SD, as described in the international literature, to a brief discussion on the fragmented nature of SA's government-environmental structure and a plug for the concept of Integrated Environmental Management. Some of the other areas that are given brief discussion are - opportunities for improving the utilization of marine resources, improved monitoring and legislation around issues of environmental health, the need for affirmative action programmes to overcome the legacy of the land acts, and the positive impact of a freer market within agriculture.

4,2 - Environmental Monitoring Group

The EMG document is the only one of this group to devote a long discussion to the concept of SD in a future South Africa. They say that the ultimate prerequisite for SD is a truly democratic political system which provides for effective participation in decision-making. This document explores the implications of SD for economic growth. The authors criticise economists (including the ANC's Department of Economic Planning) for the emphasis they place on growth - in the context of SD. They suggest that economic growth should be geared towards satisfying basic needs, and correcting the inequities of the apartheid system. To this end they say that it may be necessary to specify minimum levels to satisfy basic needs. They also suggest the specification of maximum levels of consumption, particularly of non-renewable resources.

The EMG conclude that movement towards the goal of SD will require a major intervention by the state in the economic system in the following areas:

- a producing goods and services for basic needs
- t regulating the use of resources, including energy
- t reducing our dependency on non-renewable resources
- t legislation to protect the environment
- restructuring of trade relations to facilitate SD in neighbouring

countries.

The EMG report also discusses environmental problems in relation to specific economic sectors, and makes concrete recommendations.

For example the policy guidelines for energy are - to extend electrification of the townships (at a cost of R6 000 million), to introduce energy conservation mechanisms, to clean up power stations, to investigate the hydro potential together with other renewable forms of energy. The authors also recommend the development of an efficient and affordable public transport system.

Although the approach of this document is useful there are several problems with it. Firstly, unlike the CSIR document, the data basis is very slim. In some areas (fisheries, energy) it is clear that the input of experts has been sought, in others (like land, agriculture) the content is very sketchy. Although this is a work in progress, it is unlikely that this kind of initiative can have access to the resources and scientific input that, say, the CSIR one has.

Secondly, the document makes specific recommendations which have dramatic economic implications (eg energy), citing environmental imperatives for these. At this stage in our country's development this does not seem very realistic (see 5,3 below).

Thirdly, the document exposes a contradiction in this kind of thinking internationally. On the one hand it is calling for a high degree of state control over environmental policy, on the other, it is stressing the need for popular participation in planning and development (see 5,2 below).

4,3 - ANC and PAC policy papers

Both the ANC and PAC documents are discussion papers, rather than policy statements and should be seen as works in progress. (The PAC's environmental spokesperson, Dr Solly Skosana, says he is working on a more comprehensive document which will be ready in December.)

Both documents use the term sustainable development, but do not define it. They also focus simply on the need for environmental protection, and make specific recommendations about actions in particular sectors nationally.

The PAC document starts from the position that environmental policy is one aspect of economic policy, and that its successful implementation depends on certain pre-conditions. These are - the destruction of apartheid, the enhancement of quality of life and the democratisation of society. In this context they commit themselves to conservation of biodiversity and sustainable development.

The key elements of the ANC's environmental policy are - protection and management of the environment and construction of the environment (by which is meant "engineering works to enhance the environment and use of natural resources"). The ANC is committed to conservation and rational use of the environment for the benefit of present and future generations - and maintaining a healthy balance between economic and social benefits and environmental protection.

Unlike the PAC document, the ANC authors have clearly understood the challenge of environment and development. This is especially clear in their attitude towards wildlife as a national resource which must be sustainably utilized for the benefit of local communities. It further recommends research into new economically viable and environmentally sound energy technologies and agricultural methods.

4,4 - Trade union perspective

Trade unionists Alec Erwin (NUMSA) and Rod Crompton (CWIU), in their paper "Reds and Greens", discuss the relationship between the economy and the environmental movement. They define sustainable development as development within the limits of the biosphere and they have no doubt that these limits cannot be ignored.

Environmentally friendly development fits well within their model of "growth through redistribution" - which essentially sees future growth as being oriented towards meeting basic needs. They foresee a future where "reds and greens" will be engaged in a common struggle for a new economic growth path.

Crompton and Erwin argue that as workers and working class communities bear the brunt of industrial pollution they are the first line of defence for the environment. They also believe that a policy to clean up dirty industries would create new jobs and therefore be in the interests of workers and the environment.

Essential to their notion of sustainable development is the nurturing of a strong civil society. They argue that neither the state nor the market can be relied upon to protect the environment. This is the domain of civil society which will identify and protect legitimate collective rights. "The role of a democratic state is to provide the framework within which such pressure can be brought to bear in a national and international context. "

This position suffers from the same problem as the EMG one, in that civil society must rate the environment as worth protecting before it will have any impact. For this to happen the trade unions will have to embark on a mass environmental campaign among workers.

4,3 - Sunter, Huntley and Siegfried's high road

This is an earlier document (1989) on SD in SA, which originated in the Anglo scenario team, headed by Clem Sunter. The team superimposed environmental options onto economic scenario categories they had developed for SA's future.

The worst case scenario was seen as a combination of weak environmental management and negative economic growth which would lead to a wasteland; the best was high economic growth coupled with strong environmental management. The authors warned that a high economic growth rate and poor environmental management could lead to a "boom and bust" situation which would result in ultimate destruction of the environment.

The book presents a good readable summary of SA's major environmental problems in the areas of urbanisation, land use, water, energy, air pollution, etc.

The central message of the book is that "sustained development" can only be approached through a path of "sustained economic growth". Even so, the authors warn, economic growth and quality of life and the environment cannot be maximised simultaneously and certain trade offs will have to be made.

Apart from strong economic growth in a free enterprise economy, other features of their model are - reducing inequality of access to land resources and energy, improved land use, privatisation of wildlife economy, and application of biotechnology.

The authors reject the "green" position which they say has contradictory demands for socialism and a clean environment, on the grounds that "socialism leads inevitably to the malfunctioning of the economy, which means that no money is available for conservation". . However, there is something missing in their argument that economic prosperity and environmentally sound policies go hand in hand. They do not explain why players in the free market will choose to use their profit to protect the environment.

4,6 - Institute for Natural Resources

Members of the INR, University of Natal, have prepared a paper on the principles of SD, which relies heavily on a draft of a new World Bank document. (Environmentally sustainable economic development - Building on Brundtland, May 1991).

The authors are concerned with building a model for economic growth in South Africa which is compatible with the constraints of our natural resource base. They say that what is needed is a shift in policy from one that concentrates on growth in man-made capital to one which "directs resources at the conservation and rehabilitation of natural stocks".

Their model emphasizes an international shift to growth centered on ' the quality of life, the logical conclusion of Wthh ls the end to "production growth in rich countries".

In any wealthy sector of the world's population there must be a move away from life measured in material goods to goals such as "appreciation of natural resources, reading, discussion." While the poorer section, "once it has satisfied its legitlmate basic needs" will have to "enter the free enterprise system without high universal expectation".

This paper is interesting in that it is working towards a "deep ecology" approach as the only one with long term viability. Although this may be environmentally sound it bears little relation to the real world and the aspiratlons of the real people within it - let alone the cut and thrust of politics and economics.

5 PROBLEMS AND DISCUSSION

The above documents illustrate some of the problems around the concept of sustainable development.

5.1 The problem of definition

Both the ANC and PAC use the term sustainable development as if it has a concrete meaning and does not require definition. The CSIR report defines the term in the UNCED sense, but the authors have virtually excluded discussions around basic needs of the majority in their report and have presented a largely white, middle class, ecological view of the nation. The EMG, INR and trade union papers all work towards radical alternative economic and social models of society. The Anglo scenario planners use SD in the UNCED sense, to promote the need for rapid economic growth in a free enterprise society.

It is clear that the term SD needs to be defined and interpreted in any given context (country, economic sector, biome) to have any meaning. It is also clear that the meaning of this term depends on the ideological position of the user. For example, for Anglo American scenario planners, nuclear energy is an essential component of sustainable development in SA; for the EMG it is inimical.

Another example of this is that both industrialists and trade unionists may commit themselves to sustainable development models. But for the business community, certainly in South Africa, the *modus Vivendi* has depended on denying workers crucial rights which underlie the trade unionists' version of SD. These are the right to know, the right to act (against environmentally damaging practices) and the right to refuse unsafe work. Clearly the trade unionists and the business community do not share a definition of sustainable development, and it will be part of the ongoing political and economic struggle for them to begin to do so.

One of the problems of the term SD is that people use it as if it has a fixed meaning - and it therefore creates a blind behind which 'different ideological positions can function. This is a particularly dangerous tool in the hands of those wishing to use knowledge as a means to control ordinary people. There is dangerous potential for this in silencing popular demands for land, housing, jobs, etc. The widely differing uses of the term also leads to confusion and misunderstanding. For example the draft National Peace Accord, signed by Inkatha, ANC, government and others in September, refers to the need for sustainable development. This is not defined - but the document says the implications for SD are that "all individuals must be assisted and encouraged to accept responsibility for their socio-economic wellbeing".

In the context in which SD is mentioned, it seems that the accord is simply referring to sustained economic development (short and medium term). There is no mention of environmental factors. However it is easy to interpret the use of this term as a commitment to sound environmental policies. (For example, the Weekly Mail writer Mondli Makhanya has made this interpretation).

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It is interesting that when the major economic and political players get down to discussing future economic models, (for instance a recent televised debate between ANC, Anglo and a business journalist), the environment does not get a mention.

5,2 The problem of democratic participation

One of the components of SD that is mentioned in much of the literature is the need for democratic participation in environmental concerns, protection and policy.

This raises problems for any interest group trying to define the components of SD in SA. If this is to be done democratically it must arise out of a major national campaign to canvass grassroots demands. While it is the role of environmentalists to raise issues, it cannot be their role to make policy - outside of a broader democratic process.

An example of this is the EMG's recommendation on a public transport system. It is difficult to imagine this being the outcome of a consultation process with the township taxi business.

Secondly, and more seriously, if a new government is to address peoples' pressing needs, we will certainly find environmental issues way down the bottom of the list. This applies even to immediate issues of environmental health e. g. air pollution - let alone to the tricky business of saving our heritage for future generations.

The concept of civil society advanced by the trade unionists is relevant here. It is the role of civil society to protect collective rights - of which environmental health is one. However, without a mass environmental literacy campaign, environmental rights will not be recognised as legitimate collective rights worth fighting for.

5,3 The problem of development

Defining what is sustainable development is also very much an economist's task. Environmental economist Mike 't Sas-Rolfes says "There is much concern over non-economists writing about sustainable development, because they don't understand the development side."

Many economists on the left and centre argue that our most pressing challenge is for more economic growth - to cure a range of social, political and economic ills. Once we have got through that phase we will be able to focus on the environmental components of sustainability. This kind of thinking is particularly relevant to macro policy suggestions like moving from a coal -based energy economy.

There are currently several models of development being discussed by economists of various sorts - for the UN concept of sustainable development to be one of them will require a major intervention by economists. International experience has shown that when environmentalists try to make policy guidelines which have serious economic implications, they are ignored.

5,4 Conclusions

In the abstract, the need for sustainable development - as it is defined in the recent UN literature - is undeniable. The problems come when trying to translate these abstract principles into concrete goals.

At this point it would seem more fruitful to refrain from attempting to define SD in SA and concentrate rather on creative campaigns and research which will show both experts and ordinary people that there is a way forward in the national environmental debate (see below).

For these strategies to succeed they must be accompanied by a mass-based environmental education campaign.

Sustainable development is a process and not a condition, and this process will inevitably have to take its course alongside the struggle for a democratic and equitable future in our country.

6 SOME WAYS FORWARD

The last year has seen an amazing growth in discussion around environmental issues in SA. It seems that the best way to take this further is not to refine the discussion, but to adopt positive and creative strategies related to projects and organisations in the field. Some examples:

6,1 Taking advantage of international developments

SA environmentalists could use the Rio conference constructively to make demands of first world countries.

These could include:

a Debt-for-nature swaps - So far other third world countries have used these to erase about \$100 million of external government debt. International conservation organisations have "bought" the debt in exchange for agreements to conserve crucial areas. (This obviously has serious political implications around who is responsible for apartheid's foreign debt.)

a Funding for environmental programmes - This could be used particularly constructively in the area of conservation - where rural communities are threatened by the growing privatisation of game reserves for ecotourism.

a Assistance on evaluation of technology transfer from first world countries so that SA can avoid being the recipient of the first world's dirty industries.

t Assistance in developing strict and enforceable environmental principles for new foreign investors in the economy - particularly in the petro-chemical, metals and mining industries.

6,2 Creative environmental and development projects

Identifying, researching and publicising projects where there is potential for a successful combination of environmental goals and community development.

Some of these could be:

- t Alternative management of conservation areas such as Purros, kaNgwane and Richtersveld. Potential for these kinds of projects with expanding tourism sector.

- s Community recycling projects - bricks from ash, cash from trash.

- s Current small-scale uses of renewable energy technologies eg solar lighting, telephones.

- e The contribution of a new anti-pollution industry to economic growth and job creation. .

6,3 Influencing communities engaged in "post-apartheid" planning

There are many examples of communities already engaged in replanning urban and rural environments. The suggestion is to work with these communities in a concrete way on the environmental implications and possibilities.

Some examples of these are:

- s' The Alex civic and Planact's housing project - possibilities with energy efficient housing, photovoltaics, community recycling, etc.

- i The IDT/Planact development in Phola Park.

- s TRAC communities which are re-establishing themselves, such as Mogopa, Goedgevonden, etc - possibilities with agroforestry, woodlots, agrochemicals.

These communities are starting over, and have explicitly elicited outside expert advice. Although there is the danger of creating model villages which cannot be reproduced elsewhere, the power of successful, working alternatives is undeniable.

The international community has a clear role to play here. World Watch researcher Marnie Stetson says that the developed North must contribute by "leapfrogging" the third world "from outdated or no real technology to the most energy-efficient".

6,4 Education campaigns aimed at relating perceived need to environmental problems

Some examples of this could be:

- i Working with union education programmes to extend the concept of health and safety into the environmental arena.

t Working with civics on issues relating to coal smoke pollution, electrification.

GEM has already attempted this in the 1991 study of water needs in the Transvaal. The problems we had, for example the difficulty of working in strife- torn communities - are instructive for future projects.

6,5 Working with academic environmentalists

Scientists working in various fields could be persuaded to relate their work to current demands and needs. This can be done initially by invitations to participate in educational programmes. Pressure should be put on researchers in key areas to publicise their work. Also they could be persuaded to assist communities wishing to undertake their own environmental research. What is important here is to develop credible, but simple, survey and other techniques which . community members can use. For example, low tech air pollution tests and health survey techniques.

Some key areas are:

t The health effects of township air pollution (the "birth-to-ten" study already has crucial results but no release date).

t Research into sustainable agriculture by the INR and the Development Bank.

t Research into alternative energy by the Energy Research Unit, UCT.

ti Research into industrial diseases.

The establishment of the Wits Environmental Forum, which aims to introduce environmental issues into academic research and the teaching curriculum, is a step in this direction.

6,6 Education campaigns aimed at future environmental . scientists

A range of general, as well as science "upgrade" projects exist (SEP, Outreach, Shell, Protech). Some of these are already engaged in environmental education.

These organisations could be influenced to give their students the benefit of new kinds of environmental thinking. This is especially important for students intending tertiary education in the sciences.

6,7 Building on the conservation ethic

Future policy developers could look at ways to build on the conservative environmentalism in the white communities. Traditional environmental concerns could be harnessed to provide goodwill for redistributive policies, taxes etc. This is a sort of class "debt for nature" swap.

Areas where this could work are

1 green consumerism

t green tourism

t energy, water conservation (taxation)

6,8 Targeting big business

Pressure should be put on known environmental offenders in industry and big business to use part of their revenue to clean up. Members of the SABCSD should be held to their promises. Watch should also be kept on new companies and new industrial development, eg the Columbus project, to ensure the use of clean technologies and proper environmental auditing. ,

Parastatals such as Iscor and Sasol 1 are known to be major air . polluters, and ways should be found to pressurize them into cleaning up. This would have to be part of a broader political campaign. False starts and fraudulent claims in corporate greening could not only be exposed, but campaigns started to get them to redirect their "green" investments, eg Nedbank, BP, Sasol, Pick 'n Pay, Sappi.

6,9 The role of the informal sector

Research could be undertaken on creative ways to redirect informal sector activity into environmental activity. Recycling is the obvious example here, but there must be others.

6,10 Working with church groups

The growing interest in environmental issues within progressive church groups should be encouraged. The potential for environmental projects within the independent African churches is enormous. For example in Zimbabwe the independent churches are running a successful . tree- -planting campaign.

6,11 Fighting apartheid secrecy

'Crucial aspects of this country' 5 environmental problems are shrouded in secrecy. Legislation protects environmental spoilers in, for example, the arms industry, the energy industry, the SADF, the area of air pollution and many others. Initiatives by the current government will come to nothing while this situation remains.

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