

# **Globalization, Democracy and Development in Africa**

## **Challenges and Prospects**

*Edited by*

Taye Assefa  
Severine M. Rugumamu  
Abdel Ghaffar M. Ahmed

**Organization for Social Science Research  
in Eastern and Southern Africa**



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## SAFEGUARDING THE GLOBE OR BASIC WELL-BEING?

Global Environmental Change Issues  
and Southern Africa

Raban Chanda\*

### 1. INTRODUCTION

The greenhouse effect (and its dreaded impact – climate change) ranks amongst the leading global environmental issues of our time, ozone layer depletion, erosion of biodiversity, deforestation and desertification being the other contending concerns. Some scholars (Commoner 1971) have linked climate change and ozone layer depletion to the deployment of environmentally faulty production technologies since the industrial revolution. However, others (Ehrlich, Ehrlich and Holdern 1977) have argued that this unhealthy industrialization process has been driven by the demands of an exponentially growing and more affluent population. Yet others attribute the two pollution problems to the difficulty of managing the atmosphere, perhaps humanity's premier global common property (Vogler 1995), whose character permits unlimited access to its waste assimilative and dissipative functions (Chanda 2000). Anthropogenically induced climate change, is therefore seen as a "tragedy of the commons" problem (Hardin 1968) whose solution requires concerted international efforts to shift towards environmentally benign production technologies and lifestyles. It is, however, argued in this chapter that the contribution of Third World countries, in general, and Southern Africa in particular, to these efforts would be very limited, at least in the short- to medium-terms. This is because their attitudes towards global environmental problems have been conditioned, partly, by knowledge of their limited contribution to the problems, and partly, by the prevalence of poverty and under-development.

This chapter starts by briefly outlining the relative contribution of developed and developing countries to the greenhouse effect and ozone layer depletion. It then demonstrates how poverty could be and has been a limiting or constraining factor to the practical mainstreaming of climate change and other environmental issues in Southern Africa. The last section concludes the chapter.

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\* Department of Environmental Science, University of Botswana, Private Bag 0022, Gaborone, Botswana. E-mail: [chandar@noka.ub.bw](mailto:chandar@noka.ub.bw)

## 2. WHO IS TO BLAME? THE GLOBAL CONTEXT

The earth's climate is reported to have had pluvial and glacial oscillations during the Pleistocene and earlier eras, well before *Homo sapiens* became a significant agent of environmental change. Although it is agreed that causes of these prehistoric changes were biophysical, the actual trigger mechanisms are still highly hypothetical (e.g., the biological pump and Milankovitch cycles theses). The earth is currently believed to be in an inter-glacial or pluvial cycle. Thus, the observed anthropogenically induced greenhouse effect has taken and is taking place in an inter-glacial phase of the earth's environmental history. To what extent this will serve to delay or accelerate the return of the glacial period is still unclear (Mannion 1991). It is, nevertheless, evident that contemporary greenhouse effect is a manifestation of human violation of the physical laws of conservation stipulating that matter can neither be created nor destroyed in the course of production, consumption or transformation. Excessive carbon dioxide in the atmosphere is, therefore, indicative of the scale of production (and related consumption) activities that generate the gas: the larger the scale of these activities, the larger the volume of carbon dioxide emissions. This, of course, also applies to the accumulation of other pollutants in the environment. Once this reality is appreciated, it becomes less difficult to allocate and understand national or regional culpability regarding the greenhouse effect phenomenon. The common charge in the 1970s and early 1980s was that the rapid population growth was the greatest enemy of the environment (Ehrlich, Ehrlich and Holdern 1977; Meadows et al. 1971). Much as the fastest rates of population growth were in Third World countries, the common prescription was that these countries should adopt effective population control measures. While there is no denying that demands of a huge and expanding population could create pressure on key environmental functions and even be ecologically disruptive locally, it has since become abundantly clear that much global biospheric disruption is a result, firstly, of the deployment of environmentally faulty production technologies since the industrial revolution and, secondly, due to the affluent lifestyles and consumption patterns of the relatively smaller and slower growing populations in developed countries (Commoner 1971). Thus, on a per capita basis, the environmental impact of an average American or European is inordinately greater than that of an average African or Indian. When Davis (1971) expressed the latter view at the close of the 1960s, it received minimal support among Northern scholars. Today, this is a well-received perspective which has recently been convincingly argued and illustrated by Parikh and Painuly (1994), and discussed and assessed by Bruce, Lee and Haites (1996).

Thus, though constituting less than 25 percent of the world population, industrialized nations consume 60 percent of chemical fertilizers, 52 percent of cement, 86 percent of copper, 87 percent of inorganic chemicals, 85 percent of organic chemicals, 92 percent of passenger cars, 85 percent of

commercial vehicles, 66 percent of solid fuels, 75 percent of liquid fuels, 85 percent of gas and 81 percent of electricity (Parikh and Panuly 1994, 434-435). In accordance with the physical laws of the conservation of matter alluded to earlier, these consumption (and associated production) levels are matched by correspondingly high levels of pollution generation, particularly of carbon dioxide and methane (table 1) and other air pollutants.

Table 1. Historic carbon dioxide and methane contributions by region, 1800-1988 (percent)

Region	Industrial Carbon dioxide	Total Carbon dioxide	Carbon dioxide and Methane
OECD-N. America	33.2	29.7	29.2
OECD-Europe	26.1	16.6	16.4
Eastern Europe	5.5	4.8	4.7
Former USSR	14.1	12.5	12.4
Japan	3.7	2.3	2.3
Oceania	1.1	1.9	1.9
China	5.5	6.0	6.3
India	1.6	4.5	4.8
Other Asia	1.5	5.0	5.2
N. Africa & Middle East	2.2	1.7	1.8
Other Africa	1.6	5.2	5.2
Brazil	0.7	3.3	3.3
Other Latin America	3.2	6.5	6.5
Developed countries (1-6)	83.8	67.8	66.9
Developing countries (7-13)	16.2	32.2	33.1
World	100	100	100

SOURCE: Bruce, Lee and Haites (1996): 94.

Overall, industrialized nations were responsible for nearly 84 percent of industrial and 68 percent of total carbon dioxide emissions, respectively, between 1800 and 1988 (table 1). In per capita terms, the carbon dioxide emissions from the industrialized region are seven times those of the less industrialized region (Parikh and Panuly 1994; Fuji 1990; Meyer 1995). It is, therefore, beyond doubt that the greenhouse effect of the present interglacial era is largely a product of the intensive, fossil fuel-driven industrial activities of the more developed economies of the world. This argument is equally valid with respect to tropospheric ozone layer depletion, although a significant curtailment of this problem has taken place since the Montreal Protocol of 1987 (Bruce, Lee and Haites 1996). However, Japan's relatively small contribution to industrial and total carbon dioxide emissions, despite its position as the second largest

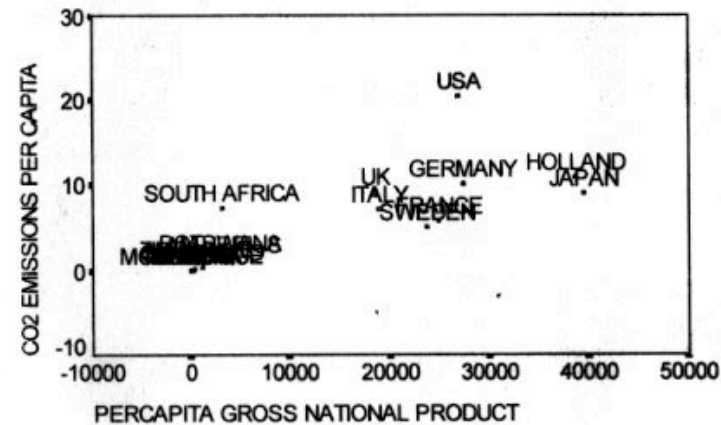
economy in the world after the USA, suggests that effectively enforced environmental protection policies can induce more environmentally benign industrial production technologies.

The greenhouse effect and ozone layer depletion have been induced largely by the profligate lifestyles of a few nations. It has been suggested by some scholars from the less developed regions that it would be more socially just that those responsible bear the full burden of remedying the situation. With regard to the greenhouse effect, this "polluter-pays" argument has perhaps been most forcefully presented by Parikh and Panuly (1994). They have suggested adoption of an "annually tradable quota system" for carbon dioxide emissions, whereby "nations emitting above world average should pay those below average". Thus, in terms of the restoration of the quality of the global atmosphere, industrialized countries would practically become "debtors" and less developed countries "creditors" under the suggested system.

All the above argument is not to completely exonerate the less developed countries from the greenhouse gas emissions problem. As table 1 shows, these countries contribute to the problem, too, but rather insignificantly, especially when considered in per capita terms. Fig. 1 is a stark illustration of this point, showing the strong linkage between national income per capita and carbon dioxide emissions ( $r^2 = 0.61$ ;  $p = 0.0001$ ), based on data for SADC countries and 8 developed economies. With the exception of South Africa, SADC countries (lumped together near the left-hand corner of the graph) are conspicuous for their low incomes and carbon dioxide emissions in comparison to the economically advanced countries.

Another consideration is that, whereas carbon dioxide emissions in industrialized countries have largely been due to affluent lifestyles, emissions from poor countries have been principally due to activities related to the provision of basic needs; e.g., subsistence agriculture, and domestic, non-commercial energy consumption (Bruce, Lee and Haites 1996; Parikh and Panuly 1994). Besides, the greenhouse effect has implications for societal adaptation. As the World Resources Institute (WRI), UNEP and UNDP (1998) have observed, the consequences of the greenhouse effect will be more significantly felt in the less developed countries because of their lack of resources to adapt. Developed countries, on the other hand, have developed robust, resilient economies and the technological capacity to adapt to environmental change, in no small measure, due to their past greenhouse-gas-inducing (GGI) industrialization. Therefore, unlike the less developed economies, industrialized economies have long solved their basic development needs, and have accumulated the resources (or is it the luxury?) to deal with supra-territorial environmental issues, such as the greenhouse effect and ozone layer depletion. The next section addresses this matter in the context of Southern Africa.

Fig. 1. Per capita income (USD) and carbon dioxide emissions (tones) of SADC and other selected industrialized countries



### 2.1 Environmental Issues in Southern Africa: The Socio-Economic Context

In its 1998 issue, the *African Development Report* notes that the African continent is approaching the turn of the century with nearly 50 percent of its population in absolute poverty, "with about 30 percent classified as extremely poor – living on less than USD 1 per day" (African Development Bank 1998,163). As a remedy to this situation, the Report recommends adoption of policies that promote accelerated economic growth and human capital development, with poverty reduction accorded top priority. Considering the high rates of population growth (averaging nearly 3 percent per annum), the continent needs a sustained economic growth of 7 percent per annum in order to make any appreciable dent on unemployment and poverty. Human capital development entails massive investment in education, training, health and other social services. Attainment of such significant levels of growth and human capital development would require, among other factors, an enabling physical infrastructural base (African Development Bank, 1999), also demanding heavy investment. It is within this socio-economic context that the attitude of African nations towards global (even national and local) environmental issues should be evaluated and understood. The scenario portrayed by the Report is well illustrated by the situation prevailing in the Southern African Development Community (SADC) region. Based on a selection of critical socio-economic indicators, table 2 suggests the following general characterization of the SADC region:

- i. Economically and in terms of the human development index (HDI), the region is very poor. The highest per capita income in the region

(that of Mauritius) is, for instance, 13 times smaller than that of Switzerland, the richest country in the world in per capita income terms. Nearly 75 percent of SADC countries belong to the lowest HDI category.

- ii. The region is predominantly rural, with a youthful, rapidly growing population, therefore, possessing a very high momentum for further growth.
- iii. Intra-nationally, the region has very high levels of socio-economic inequality (ref. Gini coefficient values), suggesting that wealth is concentrated in a few people.
- iv. With only a few exceptions, SADC states are heavily indebted. In the extreme case of Mozambique, external debt as present value of GNP was 411 percent in 1996.

In the face of all these daunting socio-economic challenges, Southern Africa has parallel environmental problems. The region's first state of the environment assessment (SARDC, IUCN and SADC 1994) identifies a number of key environmental issues:

- i. *Pollution of water*, especially from sewage around major urban centers, but also from industrial effluent and agrochemicals;
- ii. *Deforestation* as a result of various land-use dynamics and human pressures. Southern Africa has one of the highest levels of dependency on biomass energy, particularly fuel wood. Indeed, the contribution of most SADC countries to carbon dioxide emissions is largely from land-use activities that cause deforestation (table 3). The level of deforestation in Malawi (as seen in table 3) should be particularly worrisome, considering that country's small territorial size; and
- iii. *Erosion of biodiversity*: This is a result of the multiple and mounting pressures on land resources, causing a gradual depletion and retreat of wild floral and faunal resources of the region.

Table 2. Key socio-economic indicators for SADC countries and selected industrialized countries

Country	Socio-Economic Indicators										
	GNP Per Capita (USD)	GDP growth rate (%)	Pop. Growth Rate (%)	Percent urban	Life expectancy (Yrs)	Percent children	Gini coefficient	Percent with safe water	Percent with adequate sanitation	Percent living in poverty	Debt as percent of GNP
Angola	410	0.4	2.4	32.00	40	44.7	NA	32	16	NA	310
Botswana	3020	7.1	3.2	15.00	56.4	48.7	.54	93	55	34.7	NA
DRC	120	-1.5	3.1	29.00	48.0	46.0	NA	42	18	NA	120
Lesotho	770	7.0	2.4	26.0	51.8	41.9	.36	56	28	90.4	33
Malawi	170	2.1	2.7	14.0	43.1	47.5	.37	37	6	NA	76
Mauritius	3380	5.9	2.1	41.0	64.9	35.6	.37	99	53	NA	45
Mozambique	80	5.8	2.0	36.0	43.5	43.4	NA	63	54	NA	411
Namibia	2000	3.2	2.3	38.0	51.3	43.1	NA	57	34	NA	NA
South Africa	3160	1.1	2.6	50.0	55.9	40.3	.62	99	53	23.7	18
Swaziland	1170	3.5	2.8	18.0	45	NA	NA	46	NA	NA	NA
Tanzania	120	3.6	3.2	26.0	49	47.6	.38	38	86	16.4	114
Zambia	400	0.5	2.2	44.0	49.3	49.4	.50	27	64	84.6	116
Zimbabwe	540	2.1	3.2	33.0	48.5	47.9	.57	77	66	41	67
USA	26980	2.5	1.3	77.0	73.2	23.5	.38	90	85	1.4	0
Japan	39640	2.9	1.0	78.0	75.5	23.6	.35	97	85	2	0
U.K.	18700	2.2	.5	89.0	72.8	20.9	.32	100	96	.5	0
Italy	19020	2.1	.8	67.0	73.6	22.3	.32	99	100	NA	0
France	24990	2.1	.5	75.0	73.7	22.3	.35	100	96	.8	0
Germany	27510	2.2	.6	87.0	72.5	18.5	.32	100	100	.7	0
Sweden	23750	1.2	.8	83.0	75.2	19.6	.32	100	100	.7	0
Holland	38700	.8	.3	66.0	70.6	23.5	.27	100	100	.3	0

SOURCES: Various UNDP's Human Development Reports, 1993-95; World Bank's Human Development Reports, 1992-99; African Development Bank's African Development Reports, 1996 & 1999; WRI, UNEP, UNDP (1998).

Table 3: Carbon dioxide emissions in the SADC region, compared to North America (million tones of carbon dioxide)

Country/region	Source	
	Fossil fuel burning	Deforestation
Angola	55	13
Botswana	7	4
Malawi	157	2
Mozambique	70	3
RSA	NDA*	775
Swaziland	NDA*	12
Tanzania	49	6
Zambia	42	8
Zimbabwe	42	44
SADC	422**	867
North America	250	12 435

SOURCE: SARDC (1994): 280.

\*NDA = No data available.

\*\*Excludes Swaziland and RSA.

Clearly these environmental problems are interrelated. Land degradation, water pollution and deforestation have implications for the conservation of biodiversity in land and aquatic ecosystems. There is also no doubting the linkage between these problems and the socio-economic features outlined earlier. Environmental degradation and erosion of the renewable resource base can only compound the socio-economic plight of the states and peoples of the region. Indeed, this linkage is one that is well appreciated by the governments of the region. A good testimony of this awareness is SADC's adoption in 1996 of a regional "Policy and Strategy for Environment and Development" aimed at implementing *Agenda 21* in the context of the socio-economic realities of Southern Africa (SADC-ELMS 1996). This policy instrument identified the many critical socio-economic and environmental transitions that the region will have to experience in order to attain sustainable development (see Box 1).

## BOX 1

## Critical Transitions for SADC Countries

After several decades of often-marginal economic growth, increasing poverty and escalating environmental degradation, SADC countries face a formidable series of critical transitions in order to move from largely unsustainable development toward development that is economically, socially and environmentally sustainable. Critical transitions include:

- ⇒ *A demographic transition* towards an optimal size and distribution of population and economic activities in relation to the environment and natural resource base;
- ⇒ *A social transition* toward a more equitable sharing of development opportunities and benefits with priority to the poor majority;
- ⇒ *A gender transition* toward expanded rights and participation of women in the development process;
- ⇒ *An economic transition* toward equity-led growth with priority to the poor and to protecting the environment and natural resources needed for further development;
- ⇒ *An agricultural transition* toward better and sustainable use of land for greater food production and productivity with priority to household and regional food security;
- ⇒ *An energy transition* toward more efficient use and less polluting sources of energy with priority to the accelerated development of renewable sources and affordable alternatives to fuel wood for the poor majority;
- ⇒ *A technological transition* toward accelerated industrial development with priority to technologies that produce less waste and more energy and are resource efficient;
- ⇒ *An institutional transition* toward new national and regional institutional arrangements with priority to integrating economic, equity and environmental imperatives in planning and decision-making within and among different ministries and countries;
- ⇒ *A governance transition* toward greater public accountability and participation with priority to new sustainable development partnerships among governments, industry and NGOs;
- ⇒ *A capacity building transition* toward national and regional self-reliance with priority to accelerated development and use of local know-how, technology and expertise;
- ⇒ *A development budget transition* from aid dependence to self-reliance;
- ⇒ *A peace and security transition* after decades of conflict toward a new era of regional co-operation and integration with priority to the peaceful settlement of disputes and equity-led growth for sustainable development.

Source: SADC-ELMS (1996), p. 1.

Implementation of the regional policy and strategy can of course be done largely at the national level, although a few trans-boundary problems would require multilateral tackling. In this regard, individual member countries have adopted environmental policies, in the form of national conservation strategies (NCSs) and/or national environmental action plans (NEAPs), in addition to a plethora of environmental legislation (SARDC, IUCN 1994; SADC-ELMS 1996; Dalal-Clayton 1997). Furthermore, many SADC countries are signatory to several international environmental conventions, including those on climate change, ozone layer depletion and desertification. However, a survey of the level of implementation of environmental policies and regulations conducted as background to the SADC policy and strategy noted above, indicated an implementation performance ranging from inadequate to poor for most members states (SADC-ELMS 1996, 17). The next section reflects on the possible bases of this discrepancy between environmental problem awareness and policy implementation performance.

## 2.2 Failure and Prospects of Environmental Policy Implementation: Towards an Explanation and Prognosis

The "SADC policy and strategy for environment and sustainable development" was adopted only recently (1996), and a policy impact evaluation so soon would therefore be too premature, if not unfair. This also applies to the various *Agenda 21 Conventions* that SADC countries have acceded to. However, all SADC countries have had many pre-*Agenda 21* environmental policies and regulations, but none can boast of effective policy implementation, hence the many environmental problems noted in SADC-ELMS (1996), SARDC (1994) and Dalal-Clayton (1997). What then accounts for the apparent past policy implementation failure? Environmental psychology provides the appropriate framework within which to tackle this question.

Human attitudes towards the environment can be characterized either as egocentric, homocentric or eco-centric. Ego-centrism promotes individual self-interest above other values of the human-environment relations. Homocentrism safeguards the interests of the human species, as opposed to eco-centrism that is concerned with the protection of the biosphere. These attitudes are clearly hierarchical, with the latter being of the highest order (Gardner and Stern 1996) and more in line with the ethics of global environmental change emanating from the industrialized world. Environmental concerns of the developing realm, on the other hand, can be characterized as largely homocentric at the social level and egocentric at the individual level, both primarily seeing the environment from a utilitarian, short-term perspective. This view is also in line with Maslow's "basic needs" thesis and the related proposition of "hierarchy of needs" (Chanda 1999). Both of these propositions suggest that people pre-occupied with issues of basic survival are unlikely to be concerned much with any

other objectives, least of all those whose realization lay in some distant future. This view is one that has received ample supporting commentary (Leonard 1989; Omar 1996; Bruce, Lee and Haites 1996; Blaikie and Brookfield 1987; Parikh and Painuly 1994; Chandah 1999, 2000). Perhaps one of the most explicit statements on the issue was made several decades ago by a Third World leader, Indira Gandhi, to the effect that "extremely poor people and countries must make an explicit trade-off, accepting long-term environmental degradation to meet their immediate needs for food and shelter" (Leonard 1989, 4). The World Commission on Environment and Development (1987, 3) endorsed this view when it observed: "...Poverty is the major cause and effect of global environmental problems. It is therefore futile to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequality". Even Article 4.7 of the Framework Convention on Climate Change (FCCC) recognizes the important bearing poverty has on deciding individual and national priorities. Essentially, discount rates of the poor are a lot higher than those of the rich because basic survival needs require immediate satisfaction. As Leonard (1989, 4) observes, for people at a subsistence level of existence, "...a pause to protect or repair the environment can literally take food out of the mouths of hungry families".

Figures 2 through 5 (based on table 4) are graphic illustrations of both the relative poverty of the SADC region and the importance of economic growth to human development. The contrast in income and human development between SADC and industrialized countries is as spectacular as the strong positive relationship between wealth and human welfare (Fig. 2) ( $r^2 = 0.68$ ,  $p=0.0000$ ) and access to essential services (Fig. 3 for sanitation, and 4 for clean water), ( $r^2 = 0.53$ ,  $p=0.0002$ , and  $r^2 = 0.48$ ,  $p=0.0005$ , respectively) as well as the depressive effect of wealth on population growth (Fig. 5) ( $r^2 = -0.76$ ,  $p=0.0000$ ). It has also been demonstrated that economic growth has a long-term beneficial effect on environmental quality (World Bank 1992) (e.g., Fig. 6). Thus, it is only rational that SADC countries should initially focus on promoting economic growth in order to advance human development in the region and narrow the gap between themselves and the industrialized world. During this phase, environmental concerns are unlikely to take practical center stage, until a critical threshold of human development has been attained. This indeed has been the experience of Western Europe and North America.

Fig. 2. National income and human development ( $r^2 = 0.68, p=0.0000$ )

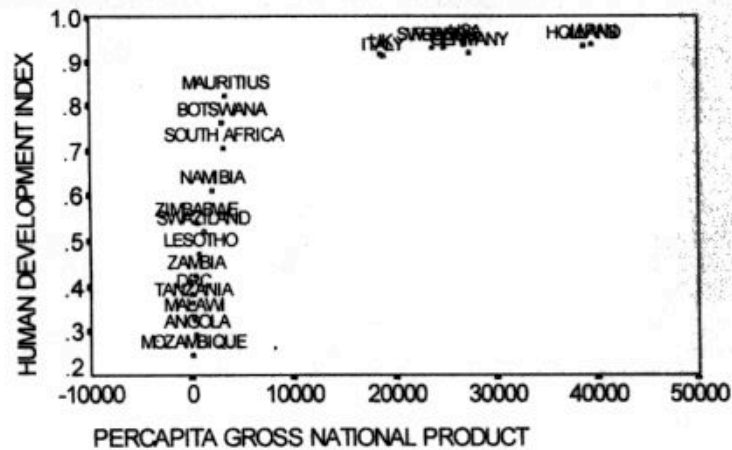


Fig. 3. National income and access to adequate sanitation ( $r^2 = 0.53, p=0.0002$ )

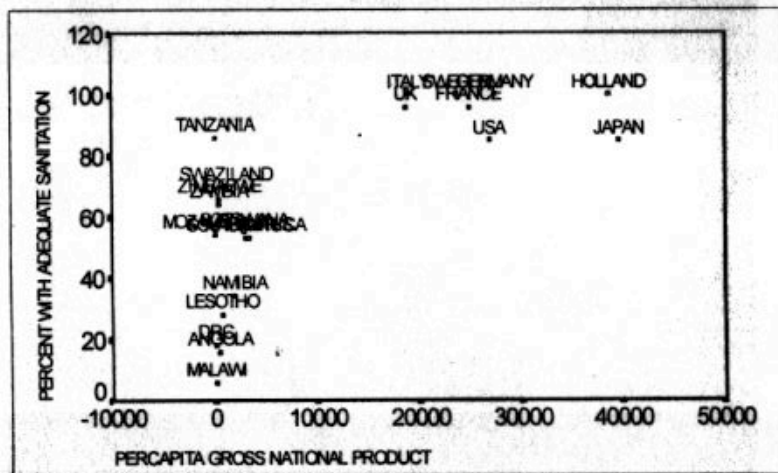


Fig. 4. National income and access to safe water ( $r^2 = 0.48, p=0.0005$ )

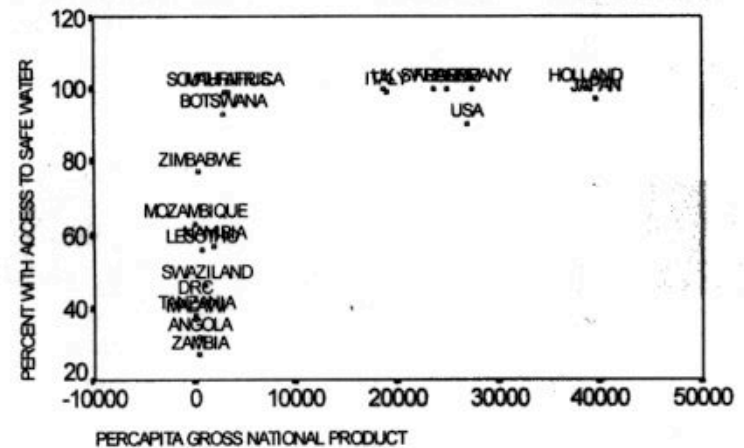


Figure 5: National wealth and population growth ( $r^2 = -0.76, p=0.0000$ )

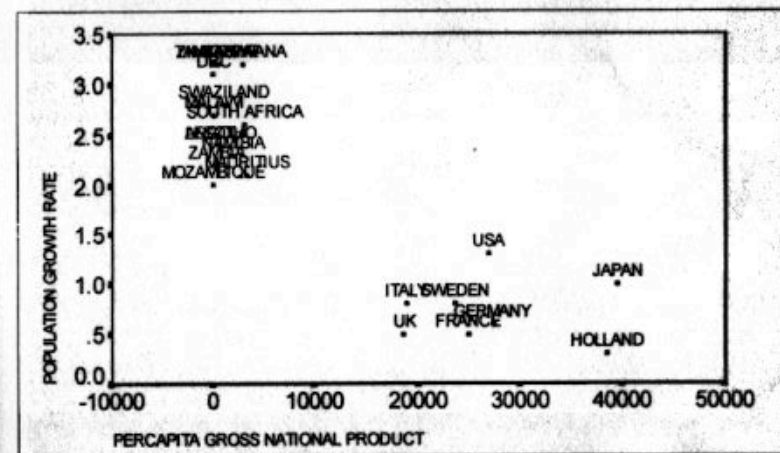
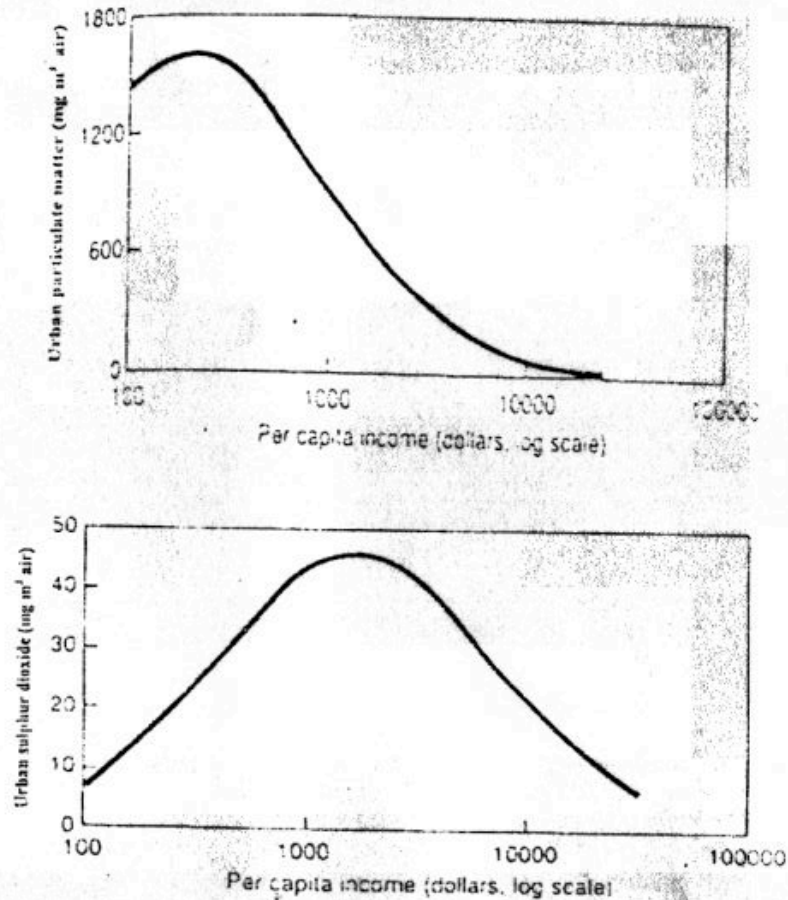




Fig. 6. Relationship between affluence and aspects of urban environmental quality



Source: Adapted from World Bank, 1992

Table 4. National welfare and human welfare indicators, SADC countries and selected industrialized nations

Country	Socio-economic indicators				
	GNP per capita (USD)	Percent with safe water	Percent with adequate sanitation	HDI	Pop. growth rate (%)
Angola	410	32	16	0.29	2.4
Botswana	3020	93	55	0.76	3.2
DRC	120	42	18	0.38	3.1
Lesotho	770	56	28	0.47	2.4
Malawi	170	37	6	0.33	2.7
Mauritius	3380	99	53	0.82	2.1
Mozambique	80	63	54	0.25	2.0
Namibia	2000	57	34	0.61	2.3
South Africa	3160	99	53	0.71	2.6
Swaziland	1170	46	NA	0.52	2.8
Tanzania	120	38	86	0.36	3.2
Zambia	400	27	64	0.43	2.2
Zimbabwe	540	77	66	0.54	3.2
USA	26980	90	85	0.94	1.3
Japan	39640	97	85	0.94	1.0
U.K.	18700	100	96	0.92	.5
Italy	19020	99	100	0.91	.8
France	24990	100	96	0.93	.5
Germany	27510	100	100	0.92	.6
Sweden	23750	100	100	0.93	.8
Holland	38700	100	100	0.94	.3

SOURCES: Various UNDP's Human Development Reports, 1993-95; World Bank's Human Development Reports, 1992-99; African Development Bank's African Development Reports, 1998 & 1999; WRI, UNEP, UNDP (1998).

The American environmental movement and the environmental protection legislation of the late 1960s and early 1970s were in no small measure a byproduct of affluence. The solution of the problem of basic survival for the majority of Americans (via sustained, rapid economic growth) helped raise the marginal utility of environmental concern.

In the short-term, therefore, the prospects for effective environmental policy implementation in the SADC region are not very good. This is

despite the widespread adoption of environmental protection policies and accession to many international environmental conventions by member countries. The prevalence of national poverty and indebtedness in the region is likely to sustain the discrepancy between environmental awareness and appropriate policy adoption, on the one hand, and practical policy implementation, on the other hand. In psychological terms, this represents a perfectly rational cognitive-behavioral dissonance. In the medium-term, only Botswana, South Africa and Mauritius might attain the minimum threshold of development required to move environmental protection up the priority list, assuming that these countries' social and economic indicators (table 4; figs. 2-4) continue to improve deep into the present millennium.

### 3. CONCLUSION

Plausible evidence is emerging indicating that the global environment is experiencing negative changes and that, unlike for the geological past, human activities are the principal driving force of the observed changes. Most of these activities have been concentrated in Northern countries, Southern countries being responsible mostly for localized, basic livelihood-related environmental degradation. As in elsewhere in the Third World, African countries face the two major interrelated challenges of socio-economic advancement and environmental protection. In the short-term, socio-economic growth will remain the overriding concern in the region. The experience of the presently advanced economies has demonstrated that economic growth produces significant human welfare benefits. The wealth generated over long periods of sustained economic growth is now being used in direct and indirect ways to clean up and protect the environment. Thus, socio-economic development and environmental protection are not mutually exclusive, although it appears to be so initially in situations of widespread poverty. As Omar (1996, 23) observes the "worst scenario for the environment is a large group of poor countries, with rapid population growth, unable to increase their incomes at a rate which would be necessary to alleviate problems of national pollution". With only minor exceptions, the SADC region fits this scenario, not only in terms of pollution but also in terms of many forms of livelihood-related land degradation, e.g., erosion of biodiversity, desertification and depletion of renewable natural resources. Thus, the policy challenge of SADC countries in the short-term is how to pursue economic growth and poverty alleviating development while keeping environmental protection in view. Environmental protection strategies likely to succeed in the region are those demonstrably linked to poverty abatement, such as community-based natural resource management policies being fostered in several countries (e.g., Botswana, Namibia, South Africa, Zambia and Zimbabwe). Rationally, the poor will safeguard their basic welfare first before anything else. It would be absurd to expect the poor to worry about global environmental issues such as ozone layer depletion and the greenhouse

effects, which are remote and abstract prospects in comparison to the concrete pressures and pangs of basic survival and development. This recommendation also implies addressing the issue of socio-economic equity within the nations of the region. It is an immoral and futile exercise for a government to preach environmental protection to its poor and hungry majority with limited wherewithal alternatives while a minority wallow in often ill-gotten wealth and engage in environmentally degrading lifestyles.

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## 13

## COMBATING DESERTIFICATION

## A New Approach towards Environmental Sustainability

H. M. Mushala\*

## 1. INTRODUCTION

The concept of desertification as adopted in 1992 by the United Nations Conference on Environment and Development (UNCED) is defined as: "Desertification is land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities".

The institutionalisation of desertification and its establishment as a global environmental problem can be traced back to the United Nations Conference on Desertification (UNCOD) held in Nairobi in 1977. It was after 1977 that the United Nations Environment Programme (UNEP) was charged with the responsibility of implementing a plan of action to stem the expansion of the desert conditions. At this time, drought was seen as the catalyst that exposed the deleterious effects of long-term degradation of the environment by people. The prime causes were identified as over-cultivation and salinization problems on irrigated cropland, overgrazing and deforestation. Desertification and its causes permeate various sectors of the economy and encroach on sustainable development. The debate on desertification, therefore, has gone beyond the realm of environmental issues per se to incorporate socio-economic considerations so that environment and sustainable development are integrated.

This chapter analyses the problem of desertification with reference to Swaziland by providing a brief background of the country, describing the state of desertification, and analysing attempts being made to combat desertification within a national and regional context in view of globalisation.

## 2. BACKGROUND TO SWAZILAND

Swaziland lies between latitudes 25° and 28° south and 30° and 33° east in southern Africa and covers an area of 17364 km<sup>2</sup>. It is bounded by South Africa in all directions except for a small portion in the east where it shares the boundary with Mozambique. It is divided into physiographic zones, which run

\* Geography and Environmental Science, University of Swaziland, Private Bag 4, Kwaluseni, Swaziland.