

Africa and Climate Change

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SAEEP

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Developments in the energy sector have a critical impact on peace and security, economic growth and balance of payment, national and regional environmental protection, as well as the global climate. In Southern Africa, energy development is ridden with economic inefficiency, disparity in access to convenient energy sources and, extensive damage to human health and ecology. The emerging regional consensus based on peaceful co-existence, democratisation, economic reform and regional cooperation is giving a renewed impetus to reshaping the role of energy to serve sustainable development.

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Africa and Climate Change : Summary

Sub-Saharan Africa's past and present contribution to the build-up of greenhouse gases has been low; the region therefore does not pose a major threat to the global climate. Nonetheless, the occurrence of climate change might pose formidable challenges to already deteriorating conditions of human development in that region. Both national contributions to emissions of greenhouse gases and the presence of considerable size of forest cover as sinks nevertheless vary within Africa.

Much remains uncertain as to how climate change will affect Africa; and the probable responses by countries, sub-national actors and external actors to several issues in the regime. The relatively recent emergence of the issue and the uncertainties facing key actors in Africa have limited policy making on climate change. Moreover, since climate has not yet figured as a priority issue area for countries actors, little nuances in differences among countries have emerged.

The impact of international measures, rather than the actual occurrence of climate change, might stimulate and define policy-making and the development of strategies on climate change. In the pre-regime formulation stage, the stake and obligations of industrialising countries were, and indeed continue to be, ill-defined. As the threat to national interests was not apparent, state agencies were not adequately mobilised.

After the first COP in Berlin, March 1995, we have seen an increasing degree of tangible international decisions. Of importance to African countries is the initiation of the pilot phase of Joint Implementation and the adoption of the Global Environmental Facility as the key financial transfer mechanism. Depending on the volume of financial and technological transfer that industrialised countries are ready to make available, states in Africa are likely to step up activities in wooing investments in energy and land-use sectors. Should post-Berlin developments stimulate demand for emerging markets in the South to set emission reduction targets, an incentive will arise for South Africa and Nigeria to engage in active climate diplomacy. Finally, the integration of climate concerns into development assistance would probably herald the emergence of climate conditionality on debt and aid. This scenario will probably ring the wake up call for most Sub-Saharan countries, and would mark the incorporation of climate politics into mainstream African international economic relations.

The first part of the book is a general introduction to the study of the history of the world. It discusses the importance of the study of history and the methods used to study it. It also discusses the different periods of history and the events that have shaped the world.

The second part of the book is a detailed study of the history of the world. It covers the period from the beginning of time to the present day. It discusses the different civilizations and the events that have shaped the world.

The third part of the book is a study of the history of the world from the perspective of the different continents. It discusses the different civilizations and the events that have shaped the world.

The fourth part of the book is a study of the history of the world from the perspective of the different cultures. It discusses the different civilizations and the events that have shaped the world.

I. Introduction

The management of the global climate has become one of the most crucial issues confronting the international society, and is likely to remain so in the foreseeable future. Both the potential physical occurrence of global warming and suggested measures to remedy it will affect various regions of the world unevenly. Likewise, the capacities of various regions to adjust domestically and contribute internationally to efforts in addressing climate change will vary.

Sub-Saharan Africa's past and present contribution to the build-up of greenhouse gases has been low; the region therefore does not pose a major threat to the global climate. Nonetheless, the occurrence of climate change might pose formidable challenges to already deteriorating conditions of human development in that region. Both national contributions to emissions of greenhouse gases and the presence of considerable size of forest cover as sinks nevertheless vary within Africa just as widely as the vulnerability of various countries to the impacts of global warming.

The appearance of the climate issue on the international agenda in the latter half of the 1980s coincided with a remarkable period in Sub-Sahara Africa's economic and political life. This period was marked by a growing international indebtedness, increased dependence on international aid and political conditionality tied to both debt-relief and aid flow. The "African crisis" has been compounded by rounds of droughts as well as intensified ethnic conflicts. In many countries, national survival and improvement in the living conditions are dominant issues that transcend other international concerns.

It might as yet be too early to draw any definite conclusions about the climate policies of various African countries. Uncertainties also prevail as to the potential impact of climate change and the effect of the climate change problem-solving regime on countries, sub-national actors and individuals. However, a preliminary assessment can be made. The assessment will be based on the present and potentially future interaction between the region's prevailing political economy and the demands that emerge for international action on global warming.

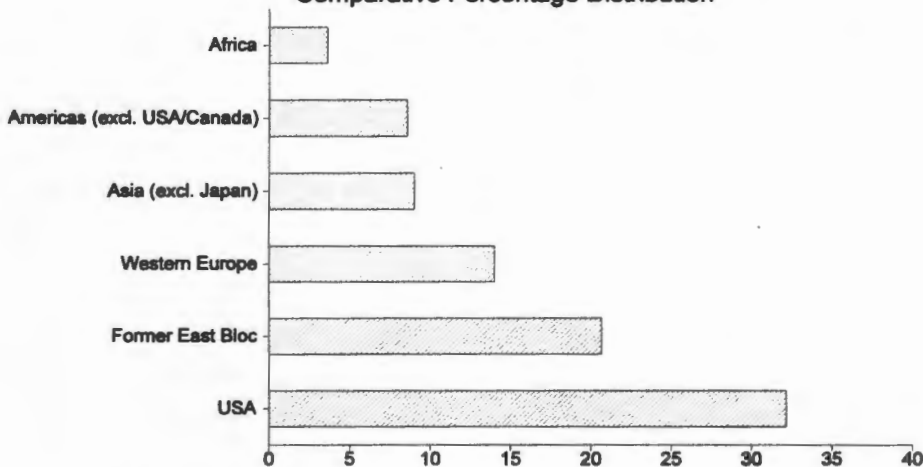
In section two, evidence will be presented of Africa's contribution to the world total greenhouse gas emissions and the available reservoir of sinks. In section three, the potential impacts of climate will be reviewed; including physical vulnerability and costs of adjusting policies to mitigate global warming. In section four, an assessment of policy responses and positions adopted by regional bodies, national institutions and among sub-national actors is presented. In section five, a suggestion will be given about the factors likely to shape climate policies in the region; and finally, in section six, future prospects for the development of climate policies in the region are discussed.

II. Africa's Contribution To Climate Change

Africa's present contribution to the total global anthropogenic emissions of greenhouse gases is still very low; on a per capita basis, the region's contribution is the lowest among all the regions of the world. Two-thirds of carbon dioxide (CO₂) emissions from Africa apparently stem from land use, while the remaining CO₂ emissions are due to industrial activities and transport. Emissions of CO₂ from energy combustion represent barely three percent of the global total. Studies suggest that Africa emits between one and seven percent of the world's total methane (CH₄) emissions and about three percent of chlorofluorocarbons (CFCs)¹.

The distribution of current greenhouse gas emissions varies widely in Africa. Nigeria and South Africa represent the largest sources of industrial greenhouse gas emissions. Nigeria is the world's largest flarer of natural gas. By 1990, the country was releasing about 21 billion

Annual Net Emissions of Greenhouse Gases
Comparative Percentage Distribution



Source: Anil Agarwal and Sunita Narain (1991) *Global warming in an unequal world*.
New Delhi: Centre for Science and Environment

cubic metres of associated natural gas from its oil production (Homer 1991). This is Africa's largest single source of methane emissions. With the country's substantial tropical forest which serve as sinks and reservoir for carbon emissions, Nigeria plays an important role in the overall regional carbon flow. Much of South Africa's emissions stem from coal mining and

1 There is considerable disparity in the assessment of the region's share of the total global emission of greenhouse gas. Davidson (1993) estimates emissions from Africa to be about 1%; Agarwal and Narian (1991) about 3%; while the World Resources Institute's (1991) figure is 7%. Subak, Raskin and Hippel (1992) has estimated 6.9% for CO₂; 21% for CO, 9.5% for CH₄; 15.8% for N₂O; and 4.4% for CFCs.

combustion for power generation. This places the country amongst the global top ten energy-related emitters of greenhouse gases -- and Africa's largest.

The other group of countries with significant capacities to affect carbon flows from African sources on account of their profuse tropical forest cover include, Côte d'Ivoire, Zaire, Sudan, Madagascar, Malawi and Cameroon. Eighteen per cent of the world's tropical forest is in Africa (WRI 1991). These resources have been under pressure from land use, especially agriculture and logging for timber, bush burning and charcoal production. Three to five million hectares of tropical forest is lost every year in Africa. This is particularly precarious in some countries. For instance Madagascar has lost an estimated ninety percent of its original forest, reducing not only sinks for carbon emissions, but even more seriously, its rich biological diversity (Serageldin 1990).

Much of Africa's potential increase in greenhouse gas emissions will depend on the direction of economic development and population growth rates. This will strongly influence energy requirements and the pressure brought to bear on land resources.

Potential growth in energy use

Sub-Saharan Africa is well endowed with modern energy resources. Oil is available in Gabon, Côte d'Ivoire, Nigeria, Cameroon, Congo and Namibia. Proven reserves in the sub-Saharan region amount to 20.5 billion barrels, equivalent to 2.3% of the world total. It has 3.5% of world proven natural gas reserves located in Angola, Namibia, Nigeria and Gabon. At the current rate of consumption, natural gas reserves can supply the sub-region for over 120 years. As a region, Africa can boast of 200,000 megawatts of untapped hydropower, enabling the current installed capacity of power facilities to be boosted twenty-fold (World Bank 1989). Substantial coal reserves are available in South Africa, Botswana, Swaziland, Zimbabwe, Nigeria in the west, and smaller amounts in other countries -- together representing about 7% of world reserves. Reserves of uranium are found in Namibia, Zaire, Niger, Gabon and South Africa. Of even greater significance is the huge potential in renewable resources such as biomass and solar energy.

Despite the abundance of these resources, many countries of the region are engulfed in an energy crisis. Firstly, a large percentage of foreign exchange revenue is spent on the procurement of energy, particularly petroleum. Furthermore, hydropower infrastructures are in poor shape and perform on an average capacity of less than 40%. Finally, biomass - the chief source of fuel for the great majority of the region's inhabitants is scarce as population increases have taken agriculture and the search for fuelwood into marginal lands.

Total primary energy supply projection in Sub-Saharan Africa (mtoe)

Energy source/Year	Actual		Projected
	1960	1986	2020
<i>Commercial</i>			
Petroleum	5.6	24.0	140.0
Natural gas	0.0	3.0	30.0
Power	0.5	3.0	20.0
Coal	3.5	4.0	10.0
Subtotal	9.6	34.0	200.0
<i>Non-commercial</i>			
Woodfuels	-	66.0	200.0
Total	-	100.0	400.0

Mtoe = million tonnes of energy equivalent; percentages are of total primary energy supplies hydro and geothermal

Source: World Bank (1989) *Sub-Saharan African: From Crisis to Sustainable Growth*

Energy policy objectives among the countries of Sub-Saharan Africa centre on the following:

- a) growth in the productivity and quantity of energy use at all levels of activity;
- b) shift of the mix of energy resources from primary fuels such as biomass, towards convenient modern secondary forms, such as electricity; and
- c) efficiency in the transformation, distribution and utilisation of all energy resources, irrespective of type (Wereko-Brobby & Nkum 1991; ECA 1991; Davidson & Karakezi 1992).

The key challenge to Africa's energy sector in the immediate future seems to be the expansion of the energy supply base in an economically efficient, socially equitable and environmentally sustainable manner (Eleri 1996). Growth in the supply of commercial energy, according to the World Bank, is likely to increase six-fold by the year 2020 to support a projected growth rate of 5% (World Bank 1989). With no change in the mix of energy sources, this will imply an enormous increase in Africa's current emission levels. Such an optimistic energy-use scenario can wipe out some of the most ambitious CO₂ reduction targets in OECD countries, and will

set Africa's energy development in direct collision course with the abatement intentions of the 1992 Framework Convention on Climate Change.

Potential emission increases from population growth and land use

Trends in the demography of the region may also exert substantial impact on emission levels. With Africa's 3.0% average annual growth in population, the continent is likely to double its present population to an estimated one billion people over the next two decades. By 2025, Africa's projected population will be close to 1.6 billion. The urban population is likely to quadruple. Overall, more than 40% of the new inhabitants in the region will be under 14 years of age (OAU/UNEP, 1991). Such a demographic scenario will dramatically heighten the pressure on land resources and energy demand.

The contribution of population growth to greenhouse emission depends greatly on the intensity of the use of technology in production as well as consumption patterns; the slower the change in technology and consumption patterns, the more population increase accounts for much of a region's greenhouse emissions. One study estimates that increase in population accounted for 68% of the increase in Sub-Saharan Africa's CO₂ output between 1980 and 1988 (UNFPA 1992:28).

Population increases are inextricably linked to the intensity of land use and the encroachment of agriculture into forest land. An estimated 80% of African people subsist on agriculture. Meanwhile both agriculture and forestry are advancing into marginal lands. Africa is losing between 3-5 million hectares of tropical forest each year through deforestation -- an area greater in size than the country Togo and larger than several European countries. Should this rate of loss continue, tropical forests in Africa will be gone within 60 years. The continuation of this trend will have serious implications for the provision of sinks for CO₂ as well as the protection of some of the world's richest diversities in flora and fauna (Serageldin 1990).

III. Impacts Of Climate Change

Both the physical occurrence of global warming and the regime formulated to address it will have severe implications for human survival and development in Africa. The following section reviews the potential physical consequences of climate change and the impacts of the Framework Convention on Climate Change on aspects of development in Africa.

Some potential physical impacts

Many parts of the region are already experiencing severe environmental stress from climate variability. The intensity of recurring drought and desert encroachment, particularly in Southern Africa and in the Sahel, are some of the key parameters shaping development and survival in these parts of Africa. Moreover, resources are meagre and economies and political institutions in many parts of the continent are so weak that their ability to cope with further stress is limited.

Several studies that seek to provide better knowledge of potential impacts of global warming in Africa are being carried out. Some of these studies have been commissioned by the United Nations Environment Programme (UNEP), Global Environmental Facility (GEF) and bilateral donors. The IPCC have recently released preliminary guidelines for assessing the potential impacts of climate change. However, considerable degree of uncertainty as to the impacts on Africa will remain. A few qualitative speculations are emerging. By and large, increases in greenhouse gas concentrations in the atmosphere lead to increases in temperature, changes in weather patterns and sea level rise. Temperature increases could increase evaporation and potential evapotranspiration leading to increased drought. The 1992 IPCC Supplementary report suggests that it might well become hotter in the tropics and in the northern and southern parts of the region. This would seriously affect agricultural patterns and consequently the vulnerable food security situation. Views on possible changes in rainfall patterns are generally quite negative; including rainfall shortages, reduced soil moisture, crop failures, human migrations, lack of appropriate coping mechanisms, among other impacts (Kelly, et al., 1992; Glantz, 1992). Furthermore, Africa will be vulnerable to sea level rise occurring as a result of the thermal expansion of seawater and the melting of land-based glaciers. Loss of wetlands, increased rates of beach erosion, flooding and increase salinity of ground water will result (Ibe et al., 1991). Finally, Africa's small island states such as parts of Equatorial Guinea, Sao Tome and Principe and Comoros could be particularly threatened. Low-lying coastal regions especially in West Africa, but also in Egypt will be threatened.

Impacts of the climate change regime

The impacts of climate change are not only directly physical; measures to address and adapt to them are costly as well and might distort development in the countries implementing them. During the various rounds of negotiations, leaders of Third World countries have remained apprehensive of international action to mitigate global warming, mostly for fear that these measures will impose serious restrictions on development processes within their societies.

In broad outline, the principles embedded in the Convention stipulate that industrialised countries have accepted to bear much of the burden in managing climate change and its consequences. Developing countries on the other hand secured an understanding that economic development - rather than combatting global environmental problems is their primary concern. Industrialised countries were thus obliged to provide the financial and technological requirements to aid industrialising countries in meeting their commitments. The obligations and rights of African countries are the same as those of all Parties to the Convention, particularly for developing country parties.

The climate change regime exert both direct and indirect impacts on Africa. Among the most direct impacts, along with other Parties, countries in Africa are obliged to prepare national reports on their inventories of greenhouse gas emissions. Industrialising countries would be obliged to submit such reports no later than March 1997. Country inventories on sources of emissions and sinks are completed for Gambia, Nigeria, Senegal, Tanzania, Uganda, Burkina Faso, Cameroon, Zambia, Zimbabwe, Seychelles, among others while climate change impact studies have been completed for Burkina Faso, Kenya, Mauritius and Nigeria. The United States Country Studies Programme is presently financing on-going studies on both mitigation and adaptation strategies in several African countries (USCSP, 1995). Second, industrialising countries are committed to outline national strategies to combat climate change. In several countries, studies outlining greenhouse gas mitigation options have been commissioned.

At the First Conference of Parties (COP) in Berlin, March 1995, GEF was endorsed as the financial mechanism for the Convention for a period of four years. This came as a negotiated middle ground between the suggestion of industrialised countries to retain the GEF as the permanent mechanism for resource transfer and the scepticism of industrialising countries regarding their influence over the institution.

There are no specific references in either the Convention or from the Berlin Mandate on the mechanism for the transfer of technology as stipulated by the Convention. Fears abound in Africa that technological transfer might tend to benefit larger and more technologically advanced developing countries having the capability of tapping and employing patented and non-patented technologies (Juma, 1993).

The agreement reached on JI constitutes a direct potential source of impact on national finances of countries in Africa. Joint implementation refers to mechanisms by which a country with relatively high costs of emission reduction invests in emission-reducing measures in a country with lower reduction cost and is credited, in whole or in part, for emission reductions in its own climate gas accounts (Nordic Council of Ministers, 1995:8). The overriding aim is cost-effectiveness and flexibility in measures to mitigate climate change. However, JI may potentially have serious political and economic impacts (Ojwang et al. 1995; Selrod et al. (1995).

Developing countries fear that by JI attention might be shifted from emission reduction in industrialised countries to industrialising ones. The mechanism may also weaken the incentive of the North to accelerate the transition to cleaner technologies. Many industrialised countries are already unable to meet their modest targets for emission stabilisations. For instance, despite Norway's target of stabilising CO₂ emissions at the 1989 level by the year 2000, emissions are expected to rather increase by 16%. Joint implementation might also have important political ramifications by virtue of its potential to increasingly involve the North in decisions concerning major investments in the South. For *conditionality*-weary African countries, this is a source of major concern.

Despite these scepticism, JI may offer interesting future opportunities for African countries . With the declining investment in Africa's energy sector, opportunities may arise for additional resources to be transferred from the North to cover these shortfalls. However, there is bound to be stiff competition for these resources from more advanced industrialising countries. If some donors should resort to redirect part of their development assistance budget to such projects, commercial considerations will increasingly override political aspirations to help the poorest countries (Eleri, 1994).

Indirect impacts of measures to abate climate change might be expected with adjustments in domestic policies by industrialising countries and transnational corporations. This might potentially be consequential on investments, trade and aid. The trend of increasing energy and carbon taxes among OECD countries, partially in response to climate change, have already raised significant concerns among oil exporting countries, many of these West African countries. Should energy taxes be extended to coal use, Southern African exports of coal will come under pressure.

It is also likely that the need to meet emission targets among industrialised countries and the possible greening of multi-national energy corporations will converge to influence the investment agenda for new energy projects. While these developments might accelerate the transfer of cleaner technologies, its impact on political and social choice within these countries might be negative.

Integrating global environmental protection into development aid is under discussion in both bilateral and multilateral development agencies. For instance, the World Bank contemplates the concept of "global overlays", providing incentives within aid packages for projects that benefit the global environment. In bilateral development assistance agencies, debates are going on about a greater incorporation of global environmental concerns into bilateral aid. In related issues, such as human rights, gender equality, democratisation and good governance -- attaching strings to aid continues to give rise to concerns among recipient countries and NGOs (Clayton 1994).

Africa might not be more threatened by climate change than most of the regions of the world; nevertheless, the region remains in a special situation due to its relative dearth of necessary capabilities to adapt to drastic changes. The economic decline of the region in the past decade has reduced the capacity to launch major catastrophe prevention schemes. Existing physical infrastructure and national institutions have become dilapidated under the austerity programmes imposed by structural adjustment programmes. The region is also vulnerable to international pressures that may not promote its efforts towards recovery and development. The present economic situation -- receding political sovereignty due to indebtedness and aid dependence -- continues to reduce the scope for the pursuit of the national interest -- and might moreover aggravate the vulnerability of African states and societies to climate regime impacts.

IV. Climate Change Policy Positions And Activities

Global environmental problems, including that of climate change - constitute neither priority development nor environmental concerns among governments, the private sector or individuals across Sub-Sahara Africa. This does not suggest that African countries care less about the environment, rather their current priorities are to meet more pressing economic and environmental problems facing their peoples. This partly accounts for the evident lack of enthusiasm to formulate national policies on climate change. Moreover, since current obligations placed on this group of countries have not been stringent enough to seriously threaten present national interests, there might not be sufficient incentives to induce them to engage in climate policy formulation at the domestic level.

The African common position

Despite the divergence of interests, African countries have participated actively in the international dialogue and negotiation processes at both the regional and global levels. Moreover, views from the region have been expressed through international coalitions under the auspices of the Group of 77, the Alliance of Small Island States (AOSIS), and the Organisation of Petroleum Exporting Countries (OPEC). Regional bodies such as the Economic Commission for Africa (ECA), Organisation of African Unity (OAU) and Sudano-Sahelian Countries have also been important actors in galvanising regional perspectives prior to Rio.

As part of Africa's regional preparation for UNCED, countries of the region in close consultation with NGOs, adopted the African Common Position on Environment and Development (Common Position) at the Second African Regional Ministerial Conference for the UNCED in Abidjan, Côte d'Ivoire, November 1991. The various inter-governmental regional conferences were hosted by the ECA and OAU. Drawing on previous regional blue-prints for economic and political development, the Common Position represented Africa's policy response to the challenges of a deteriorating global environment.² Africa's current economic predicament and the emerging consensus on an alternative development path for the

2 Prior to the Abidjan Conference, the first Regional Conference on Environment and Sustainable Development in Africa was held in Kampala, June 1989, also the OAU Pan African Conference on Environment and Sustainable Development held in Bamako, January 1991 and the First African Regional Preparatory Conference for UNCED in Cairo, 11-16 July 1991. The declaration of the OAU Heads of State at the Abuja summit, July 1991, on the need to forge an African Common position was instrumental to negotiating an African Agenda in November 1991.

region provided a foundation upon which to build Africa's expectations on the climate convention as well as other issues on the UNCED agenda.³

According to the Common Position, poverty is one of the major factors that has perpetuated the underdevelopment of resources, low levels of technological development and, consequently, low level of production in all sectors as well as the exacerbation of environmental degradation. Moreover, it states that the difficult economic environment confronting Africa, particularly mass poverty and crushing foreign debt burden, collapse of commodity trade, inadequate transfer of appropriate and environmentally sound technology, the reverse flow of financial resources and backward scientific and technological capabilities, have all led to severe constraints on the continent's development capacity. The Common Position concludes that this fact of very limited resources has contributed significantly in frustrating Africa's capacity to effectively participate in global development and environmental efforts (ECA, 1991:24).

Following the Common Position, the industrialised countries are principally responsible for the human activities that result in global warming. Hence the primary responsibility for combatting the problem, should be borne by them. African countries particularly emphasise the linkage between the global warming problem and the plague of drought and desert encroachment in the region - a relationship upon which considerable uncertainty rests. The Common Position particularly deplored the rate at which deforestation of tropical forests due to energy needs, drought, desertification, is reducing the natural capacity to absorb atmospheric CO₂ in Africa.

Central to the regional opinion on climate change was the issue of drought. According to the Common Position, drought "is a global problem requiring the effective contribution of the international community in afforestation, combatting desertification, and general eco-system rehabilitation activities" (ECA 1991:24). At the fourth INC session, the African Group proposed a Green Plan designed to promote massive reforestation and integrated management of forest cover with a view to expanding Africa's absorptive capacity of CO₂ and other greenhouse gases (United Nations 1991) At UNCED, the African group pressed for and

3 A vigorous debate has been raging between the World Bank and the ECA on the appropriate strategy for Africa's recovery and development. Spurious to this debate has been an emerging consensus among African countries for strategies towards a self-reliant and self-sustaining development path. These common views have been expressed in the Monrovia Declaration (1979), the Lagos Plan of Action (1980), the African Priority Programme for Economic Recovery (1985), the United Nations Programme of Action for African Economic Recovery (1986), the African Alternative Framework for Structural Adjustment Programmes for Socio-Economic Recovery and Transformation (1990), The African Charter for Popular Participation in Development (1990).

secured international acceptance for the formulation and signing of a United Nations Convention on Halting Desertification.

National positions and activities

While few African countries have adopted concrete national policies on climate change, it might be possible to review their positions in relation to the emerging negotiation blocs among industrialising countries in the climate change negotiations. Three broad categories of negotiating blocs can be distinguished. The most pro-active negotiating blocs -- urging for more binding international commitments to reducing greenhouse emissions, are the AOSIS group of 36 countries⁴; apprehensive that sea-level rises might wipe out their countries. The AOSIS can be termed as "proactives" for increased international action on global warming. Second, is the Group of 77 (G77) representing most of the developing world - arguing that their emissions would necessarily rise due to their efforts to meet the development needs of their people. This group of industrialising countries holds that developed countries are primarily responsible for present and historical emissions of greenhouse gases, and therefore have the primary responsibility of mitigating global warming. The G77 has forcefully negotiated for increased financial and technological transfers to the developing world to enable it to offset incremental costs of adaptation and mitigation. The G77 might be termed the "mediators" -- not for their mediating positions between the extremes of Third World concerns, but for their role in negotiating for an equitable distribution of burdens among Parties in the regime. The final group of Third World negotiating blocs comprises oil exporters; most notably OPEC countries -- fearful that reducing the role of petroleum in economic activities will jeopardise their economies; they have pushed for a slower pace in policy implementation, arguing that the present scientific uncertainty warrants caution in the implementation of drastic measures⁵. We may term this group "draggers" in international efforts to combat climate change (Nazer, 1993).

Can Africa's positions on climate change be grouped into categories of proactives, mediators and draggers?

At the regional level, states in Africa participate in various fora representing industrialising nations. Apart from peculiar issues touching upon Africa's development such as drought and common regional perspectives on economic development, the ECA/OAU system, as reflected

4 AOSIS is comprised of 36 developing and developed countries.

5 For an elaboration on the international negotiating blocs on climate change see Ian Rowlands (1995). Some might choose to further differentiate the G77 to distinguish the impacts of larger states such as Brazil, China and India (see eg. Bergesen, et al., 1995).

in the UNCED preparation process has in general been supportive of the positions of the G77, without prejudice to the proactives and draggers among its ranks.

Beyond regional bodies, the geographical location of countries and their energy endowment elicited their membership in international organisations - - helping to define their positions in the regime formation process. The island states of Mauritius, Madagascar, Comoros, Equatorial Guinea, Sao Tome and Principe are some African countries that have joined ranks with AOSIS in supporting accelerated international action on global warming. African OPEC members such as Algeria, Nigeria, Gabon and Libya, have been part of an international lobby spearheaded by Saudi Arabia and Kuwait to slow down policy implementation to curb emissions of greenhouse gases. On the other hand, several countries in Africa have been traditional supporters of the aims of the G77. Countries like Algeria and Ghana have contributed substantial leadership in upholding Third World solidarity within the G77, and its efforts directed towards an equitable redistribution of global economic welfare. The positions of the G77 are adequately reflected in African regional positions as well as in the national reports to UNCED from various countries.

Sub-national actors, notably Africa's major energy corporations and various NGOs, have closely followed the negotiations on climate change. The two largest indigenous energy corporations in Africa - the Nigerian National Petroleum Corporation and South Africa's electricity utility, Eskom - have followed climate negotiation processes closely (Lennon 1993). While the participation of these corporations have not resulted in the crystallisation of clear policy preferences, they have conceived participation in UNCED as a learning process on issues that will form their business environment. Africa's NGO community has also been effective in sustaining state attention to issues on global development and environmental protection. Several conferences, studies and training programmes are initiated. Furthermore, much of the official studies has been carried out by local NGOs in association with industrialised country counterparts. The Climate and Africa Project under the auspices of the African Centre for Technology Studies and the Stockholm Environment Institute is a good illustration.

Beyond negotiating positions, several activities aimed at meeting the obligations of countries to the Convention are taking place in the region. By November 1995, all members of the OAU (including Morocco) except Equatorial Guinea and Somalia, had signed the Climate Convention. Thirty-two of these countries have either ratified or acceded to its terms. This clearly signals an intention by a majority of African states to participate in activities that tackle climate change and to be eligible for resource transfers from this endeavour.

Several countries, especially in Southern Africa, have organised national post-UNCED conferences to discuss national strategies. Other follow-up activities might be grouped into two

categories. The first relates to national climate studies in preparation for meeting their reporting obligations according to the convention; the second relates to pilot projects initiated to mitigate emissions of greenhouse gases and the enhancement of sources of sinks.

In collaboration with the United Nations Collaborating Centre on Energy and Environment in Risø, studies on the Methodological Framework for National GHG Abatement Costing have been conducted on Senegal and Zimbabwe. Country inventories on sources of emissions and sinks are completed for Gambia, Nigeria, Senegal, Tanzania, Uganda, Burkina Faso, Cameroon, Zambia, Zimbabwe, Seychelles, among others. Impact studies have been completed for Burkina Faso, Kenya, Mauritius and Nigeria. The United States Country Studies Programme is presently financing on-going studies on adaptation to climate change in several African countries. Some training programmes have also been initiated. Several climate change-related studies and training programmes are being planned with financing from developed countries.

Several countries have sought GEF funding for pilot projects in GHG mitigation projects and carbon reservoir expansion projects, among them are the Nigerian associated natural gas utilisation project and the Zimbabwean photovoltaic project. There are also attempts to attract GEF funding for the Tanzanian Songo Songo gas development project. In all these three instances, there are attempts to involve the private energy sector. Several such projects are being planned in different countries.

V. Factors Shaping Present and Future Policy Positions

Several explanations have been offered for why political actors in the international society choose certain positions on cooperation in solving common problems. For our purpose, three broad categories of these explanations can be discerned: “national interest”, “pluralist” and “knowledge” based explanations.

Traditional explanations focusing on national interests⁶ are usually quite pessimistic about the success of international cooperation, since according to them, the international system is without government and is primarily made up of self-centred states - ever in pursuit of supreme national interests - and speak only the language of power. Positions on climate change by countries will therefore necessarily reflect their degree of vulnerability, and the marginal costs of abatement and adaptation (Bergesen, et al. 1995:13); and also the relative costs that others are willing to bear (Underdal, 1992). In this perspective, African countries may be putting their national priorities first - in balance with their relative power in the international society.

Pluralists generally offer more optimistic explanations of the prospects and desirability of international cooperation. They remind analysts that there are more actors than states, and more interests than national ones - shaping interactions across national boundaries. Therefore, though political leaders may be ambivalent to climate change issues, their local and transnational NGOs, transnational corporations, media, individuals - and in fact, state-owned energy utilities may seek to influence the political process both nationally and internationally (Keohane & Nye 1977).

Knowledge-based explanations suggest that international cooperation will only be possible when there is information which “commands sufficient consensus at a given time among interested actors to serve as guide to public policy designed to achieve some social goal” (Haas 1980:367). Adherents to this perspective hold the view that the introduction of new ideas, knowledge and beliefs by communities of experts and scientists can facilitate cooperation among states (Haas, P., 1990:52). Here, knowledge is power, and whoever controls knowledge has an edge in climate change regime negotiations. For instance, concerns have been raised about Africa’s limited participation in the work of the IPCC, INC sessions, and in research relating to climate change which are deemed important in securing various regional objectives⁷. According to this perspective, African positions -- or lack of them -- can be explained by how

6 It is quite difficult to lump so many strands of a rich tradition into one basket, however, the realist perspective has been one of the most influential (see eg. Grieco, 1988).

7 These concerns have, for instance, been raised by the WMO Secretary-general, G.O. Obasi. See Obasi, 1991.

much access to relevant information and scientific bodies were available to key decision-makers in the region.

Power and national interests

What are the interests of African countries on the issue of climate change and in international climate politics? There is apparently a genuine concern among government officials across Africa that climate change, if it proves real, will further aggravate the deep crisis already facing the continent. However, this concern at best, coexists but are essentially subordinate to developmental and environmental problems facing these countries. The foremost concerns of states in Africa are economic recovery, national political sovereignty and stability, poverty alleviation and ecological restitution.

In a sense, Africa has become the Third World of the Third World. While countries like Nigeria and Ghana in the mid-1960s had per capita incomes in excess of South Korea and Indonesia, respectively, the quality of life has with the rest of the region, dropped below 1960 levels (World Bank 1989). While the number of poor people in the world is expected to decline between 1985 to the year 2000, Africa remains the only region with a substantial growth in poverty (World Bank 1990). Of the 41 Least Developed Countries of the world, 28 are African. This represents an increase of seven African countries in this category since the 1981 United Nations Conference on the Least Developed Countries (UN-DPI, 1990). In the 1980s, Sub-Saharan Africa's per capita GNP was on average falling at the rate of 4.2% a year.

A large proportion of the continent is stricken by severe environmental stress, especially drought, soil erosion and desertification. For instance, the 1992 drought in the southern region, left 40 million people with severe food shortages. The precarious food balance in the Sahel and particularly in the Horn is already well known. In a 1991 study commissioned by the 22-member Sudano-Sahelian Countries, climate change ranked as 17th of the 20 most important priority concerns for their countries (CILSS/UNSO/IGADD, 1991).

Thus it is safe to say that states in Africa have several pressing development and environmental problems - far more threatening than climate change. Rather than worrying about climate change, leaders fear that the climate change regime itself will impose both economic and political costs, as another conditionality in addition to human rights, gender, democratisation and good governance. On this background, arguments can be made that Africa's interest in climate change politics is that of shielding the state and society from a costly and externally-imposed policies. In this perspective, the call for Africa's contribution to global environmental efforts can be viewed as a distraction from more urgent regional challenges.

Ranking of African priorities on the UNCED agenda

	Concern Item	Average relevance rank index
1	Land resources management	3
2	Poverty	3
3	Living conditions of the poor	3
4	Drought	2.8
5	Deforestation	2.8
6	Desertification	2.8
7	Biotechnology	2.8
8	Human health	2.8
9	Land degradation	2.6
10	Irrigation water	2.2
11	Biological diversity	2.2
12	Fresh water resources	1.8
13	Coastal areas protection	1.8
14	Hazardous wastes	1.6
15	Toxic wastes	1.6
16	Acid rain	1.4
17	Climate change	1.2
18	Seas and oceans protection	0.8
19	Transboundary air pollution	0.6
20	Ozone layer depletion	0.4

Source: Report on the Strategic Concerns of the Sudano-sahelian Countries in the Context of UNCED 1992. (The ranking is based on the following scale: High concern = 3; Of concern = 2; Not immediately of Concern = 1; and likely but of much longer-term concern = 0. The averages were obtained from a matrix of the nine UNCED issues (General Assembly Resolution 44/228) crossed with Africa's five priority issues in the Bamako Commitment.)

Africa's climate positions might depend on the balance of power between the state and external actors. State sovereignty is challenged in Africa; from below by ethnic tensions; from above by political concession for economic aid from external actors. Internally, twelve African states are currently at war, two in an early post-war phase and fourteen experiencing or having a recent record of significantly high levels of political violence. More than half the countries in the region -- 28 in all -- have recently been afflicted by serious violent conflict (Sandberg, et al., 1994). In countries like Liberia, Somalia and Zaire, the identity of official

representatives of governments is not always clear. On the external front, high indebtedness and dependence on aid has led to the concession of major policy-making powers to external actors (Plank 1993). In over 40 countries where structural adjustment programmes are implemented, few significant economic policy initiatives are decided upon without clearance from bilateral and multilateral donors. Not only is economic decision-making increasingly dominated by external actors, implementation of policies is also increasingly dominated by technical assistance and NGOs funded by external actors.

With the receding political sovereignty in most of Sub-Saharan Africa, there is fear that the power and the interest of external actors might define future positions and activities on climate change. Bilateral and multilateral development agencies have in most cases financed the preparatory activities preceding UNCED, research on national inventories of greenhouse gases, adaptation and mitigation strategies.

National interests and balance of power with external actors vary greatly in Africa, and might in the future explain potential differences in policies among countries in the region. Although this study lacks adequate statistics on debt, aid and economic dependence on various categories of countries in the region, it can be expected that both South Africa and Nigeria -- states with relatively higher levels of economic independence might have better chances of promoting own national interests than the more economically dependent countries of the region.

Beyond the nation-state

The primacy of national interests in determining positions on climate change negotiations might not adequately explain the several activities relating to climate change already taking place in Africa. Despite the divergence of interests, important initiatives are being taken by regional bodies, NGOs, sub-state actors, media and possibly adjustments in individual lifestyles by African people in support of global objectives to protect the earth's atmosphere.

In the early phase of the regime formulation stage, especially under the preparation for the UNCED, the ECA in association with the OAU were the foremost catalysts in the attempt to formulate a unified regional premise for global environmental conventions. Several factors underscored the key position of the ECA as a spearhead of Africa's international economic and environmental diplomacy in the early 1990s. First, the commission has since the mid-1970s been responsible for driving the process towards the formulation of a regional economic blueprint for development and cooperation. Secondly, its long-drawn altercation with the Bretton Woods institutions, particularly the World Bank, over the usefulness of structural adjustment programmes, positioned the ECA as the most important regional international economic relations agent. The mechanism was therefore available within the ECA for collating regional responses on environment and development.

Parallel with the process of economic and political transformation in the 1980s has been a growth in the influence of the NGO movement. Through generous funding from the North, African environmental NGOs have engaged in elaborate regional workshops and conferences. The first major milestone in the incorporation of the perspectives of NGOs was laid in Kilimanjaro with the First African Regional Conference on Environment and Sustainable Development in 1989 (OAU 1989). This process culminated in an NGO-summit, ECO-92, held in Cairo, June 1991 in conjunction with the African Regional UNCED Preparatory Conference.

African NGOs have generally focused on the development component of the UNCED process, and have urged for active African participation in negotiations. They have provided sources of information, analysis, and, sometimes training for policy-makers. Interaction between policy-makers and NGOs varies within and between countries. While some maintain relative distance from the country's mainstream political institutions and processes, others maintain close interaction with their national institutions.

With few exceptions, the business community in Africa has shown little interest in the climate regime. Eskom of South Africa actively participated in the Earth Summit. It became a direct signatory of the International Chamber of Commerce's Business Charter on Sustainable Development (Eskom 1994). The utility also participated in the first COP in Berlin, March 1995. Within South Africa, its representatives are key figures in the national committee studying the climate change regime, its implications and possible response strategies. In Nigeria, the Nigerian National Petroleum Corporation headed the national committee in the preparation for climate negotiations.

Science and policy

Local and international scientific networks have been important players in providing policy-relevant information and analysis on climate change. The past few years have witnessed a remarkable growth in the number of scientific communities working on the documentation of greenhouse gas inventories, mitigation strategies, adaptation studies and the analysis of both regional and national response options. Their work continues to serve as a reference and base for national and sub-national decision-making processes; and many of the scientists serve as advisers to their governments and to external agencies.

Researchers at the University of East Anglia have provided substantial inputs in natural science studies of climate change impacts (Kelly 1992). Collaborative research programmes such as the African Centre for Technology studies and the Stockholm Environment Institute have focused on policy issues. The United States Country Studies Programme addresses mitigation and adaptation to climate change, while the European Union has provided funds for inventory analysis carried out in several African countries. Transnational institutions have engaged in

research collaboration with African institutions with the aim of providing relevant knowledge and information for decision-making and implementation of the climate regime. A notable example is the information and analysis being provided by the Climate Network Africa -- an affiliate of other regional climate change NGO networks.

VI. Future Prospects

Much remains uncertain as to how climate change will affect Africa; and the probable responses by countries, sub-national actors and external actors to several issues in the regime. The relatively recent emergence of the issue and the uncertainties facing key actors in Africa have limited the policy making on climate change. Moreover, since climate has not yet figured as a priority issue area for these actors, little nuances in differences among countries have emerged.

Since the international politics on climate change is in an evolutionary process, national positions are likely to develop and change according to the issues in the agenda, and how they affect vital national interests. This would tend to determine which actors are likely to participate; which interests will be mobilised and how they shape national responses. It may be useful to suggest three stages in this evolutionary process: first is the pre-regime formation stage; second, the pilot project phase; and third, a full implementation stage - where international commitments will be expected to be domesticated and internal policy adjustments made.

The pre-regime formulation stage has been marked by a very weak issue tangibility; it was not always clear how much adjustment to domestic policies countries were expected to make. This was even more so as much of the responsibilities for stabilisation and reduction of emission rested on the shoulders of the industrialised countries. The stake and obligations of industrialising countries were, and indeed continue to be, ill-defined. As the threat to national interests was not apparent, state agencies were not adequately mobilised, making room for other actors such as regional organisations (ECA and OAU) and non-governmental organisations to fill the vacuum.

After the first COP in Berlin, March 1995, we have seen an increasing degree of tangible international decisions. Of importance to African countries is the initiation of the pilot phase of JI and the adoption of the GEF as the key financial transfer mechanism. Depending on the volume of financial and technological transfer that industrialised countries are ready to make available, states in Africa are likely to step up activities in wooing investments in energy and land-use sectors. Backed by the growing wealth of information and knowledge about climate change, this phase is expected to increasingly involve state institutions and the private sector.

Depending on developments in the science of climate change, the frequency of serious natural disasters, the preparedness of industrialised countries to step up mitigation policies, several developments might be set in motion. One such development would be a growing demand for developing countries to set emission reduction targets, though this pressure may rather be

directed towards the Newly Industrialising Countries and emerging market economies. Such a scenario may affect such countries as South Africa and Nigeria, in particular.

The other probable development would be the integration of climate concerns into development assistance, and thus the subsequent emergence of climate conditionality on debt and aid. This scenario will probably ring the wake up call for most Sub-Saharan countries, and would mark the incorporation of climate politics into mainstream African international economic relations. In such a scenario bilateral and multilateral development institutions and officials of key economic ministries, would most likely be the key actors. Experience from other issue areas suggests that national interests might succumb to the mobilisation of economic power by donors and creditors. Despite national hesitation in such a scenario, chances are that mitigation programmes would be formulated and implemented partly through the mobilisation of technical assistance.

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