



Environmental Policies for Sustainable Growth in Africa

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**Environmental Policies
for Sustainable Growth in Africa**
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About the Center For Economic Research on Africa:

The Center for Economic Research on Africa seeks to foster closer understanding of economic relations between the United States and Africa. Through its research program, it is concerned with examining the scope and consequences of economic policies within Africa, United States economic policies toward Africa, and how specific policy alternatives bear on economic relationships between the two regions. The Center operates with financial support from academic, government, professional, and business organizations, and works in close collaboration with the Department of Economics of Montclair State University.

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Introduction

Africa's environment, in both its natural and socio-economic dimensions, poses a fundamental challenge for economic development. By most measures, Africa's environment is undergoing increasing stress, calling into question many long-held assumptions regarding existing policies and calling for a new economic agenda. To examine these issues, the Center for Economic Research on Africa, working in collaboration with the African Development Bank, the Environmental Defense Fund, the World Bank, and the World Resources Institute, sponsored a conference on May 6, 1991, the results of which are published in this volume.

Dimensions of Africa's Environmental Stress

Africa's natural environment, symbolized historically by its extensive tropical forests and unusual species of wildlife, faces increasing pressure from a combination of forces and events. The symptoms of these pressures are accelerating deforestation, significant losses in plant and animal stocks, periodic drought and famine, coupled with relatively low levels of per capita income and weak rates of economic growth. How serious is the shift in Africa's environment, to what extent is it influenced by existing economic and social policies, and what options are available to create a climate for sustainable growth in Africa?

With over one-fifth of the world's land area, as of 1988 Africa accounted for just under twelve percent of the world's population and seventeen percent of its forest and woodland areas. Although this would seem to be a favorable ratio, Africa is consuming its forest and woodlands at a rate of just under one-half of one percent per year, a rate only slightly less than the deforestation rates of Latin America and Oceania, and at a rate twice the world average. As progressive deforestation in Africa reduces the habitat of plant and animal species, it also bears on the prospects for annual rainfall, and thus on patterns of agriculture, food sustainability, and on the suitability of population settlements.

The dynamics of Africa's environment are increasingly well understood. Until fairly recently, Africa's environment was sustained by a combination of traditional methods of natural resource management, coupled with relatively stable levels of population. As long as population levels remained relatively low, traditional agricultural techniques based on shifting cultivation were sufficient to provide sustainable levels of food production.

Given Africa's historically low population densities, there was sufficient land to enable ample time for recovery under a system of fallow rotation of fields.

Determinants of Africa's Environmental Dynamics

The first determinant to change Africa's environment has been the rise in fertility. In the past three decades, newly independent African countries have engaged on extensive programs of economic modernization. In the process, much effort has been placed on investments in education, health, and basic infrastructure. As education and health services have expanded, mortality rates have fallen, and population growth rates have risen accordingly.

By itself, population growth does not preclude economic growth. This was certainly the case for Europe during the period of the industrial revolution. Yet as population has expanded in Africa, there has not been a corresponding economic transformation, particularly in agriculture on which so much of Africa's population has depended.

For the 1973 to 1988 period, Africa's population grew on average at a rate of over three percent a year, almost twice the world average, and faster than the rate of any other region. By the year 2000, unless these rates change, Africa's share of global population will have risen from its present level to almost fourteen percent.

Although population density in Africa remains only one fifth the levels in Asia and in Europe, in the short term, population growth has been sustained by rising rates of deforestation. One factor that has contributed to deforestation has been the relative absence of technological change in African agriculture. In the absence of such change, yields have remained relatively constant, thus placing pressure to increase the range of cultivation.

The absence of technological change in African agriculture reflects historically weak economic incentives to African producers. Economic policies pursued by many African countries during the past few decades since political independence have often been driven by the pursuit of rapid economic transformation, not only in terms of the social and economic infrastructure, but also in terms of creating the institutional basis for economic industrialization.

To finance economic growth, African governments have used both borrowing and taxation. Taxation has been both direct and indirect, with the latter often undertaken

through agricultural marketing boards, as a means of undertaking these changes. In the process, the profitability of agriculture in Africa has fallen, with the result that farm workers have left the countryside in pursuit of economic opportunities in towns and cities, thus placing pressure on Africa's urban environment. Cities have often been overcrowded, with inadequate levels of water, sanitation, police, health, and fire services.

As urbanization has accelerated, it has left behind a less educated and older workforce in agriculture. In the absence of productivity enhancing investments in human and non-human resources, agricultural production in many African countries has thus remained stagnant. And, as population growth has expanded, food security has diminished, at least in terms of the traditional domestic crops on which many African societies have depended. In turn, in the absence of significant increases in productivity, because the majority of Africa's populations still live and work in rural environments, levels of per capita income have also stagnated.

Beyond the poor mix of economic incentives, Africa's natural environment has also suffered from a breakdown in traditional systems of property rights. Many forest and woodland areas used to be managed by local communities, with the result that effective control was maintained on extraction and replanting rates. As programs of modernization have been implemented, in many cases they have been accompanied by a replacing of traditional communal rights by more centralized systems of administration, including national ownership of lands, with the result that accountability at the end user level has been diminished. In the absence of well defined property rights, the price of forest and woodland products to local consumers is often only a fraction of the replacement cost of these resources. Deforestation is thus encouraged.

The most important contributor to Africa's deforestation is the demand for fuelwood energy. Over eighty-five percent of all household energy in Africa is in the form of fuelwood consumption. In turn, households account for well over fifty percent of all energy consumption from all sectors. What makes Africa's case more acute is the relatively low level of efficiency with which fuelwood is consumed. Most fuelwood is consumed over open fires for cooking, and heating. Fuelwood efficiencies are typically on the order of between two and five percent, with the result that far more fuelwood is consumed than would be necessary were more efficient technologies such as stoves and ovens available in economically attractive configurations to African consumers. Obviously, as long as fuelwood remains artificially underpriced, the demand for more efficient energy technologies is bound to remain relatively weak.

Added to population growth, economic disincentives, and problems of land tenure, Africa's natural environment has also been affected by a host of natural factors. First and foremost has been a prolonged series of droughts in many parts of the continent over the past twenty years. Although there may be some periodicity in Africa's drought cycles, there has also been growing concern of the impact of the greenhouse effect. As is well known, the greenhouse effect stems from rising levels of carbon dioxide in the atmosphere which block re-radiation of heat from the earth, thus raising average temperatures which appear to be contributing to shifts in rainfall cycles throughout the globe. As is also well known, the increase in carbon dioxide emissions is caused largely by industrial emissions, particularly from developed countries with high degrees of industrialization. As drought conditions occur, the pressure to extend the range of grazing land expands accordingly.

Added to this picture has also been Africa's experience with commodity boom and bust cycles. During the 1960's and 1970's, African countries often benefitted from high and rising primary commodity prices. When these prices collapsed in the 1980's, the economic margins on which many industrial development projects had been financed quickly placed economic growth in check. As African governments have also learned, policies designed to maintain traditional policies by ever rising levels of external debt have not been productive, even under the relatively favorable lending terms on which many of these investments have been undertaken.

Faced with rising levels of external debt and poor economic growth, African countries have embarked on a wide ranging series of programs of structural adjustment. Incentives to agricultural producers have been increased, inefficient investments in other sectors have been scaled back and reformed, debt re-schedulings have been undertaken, foreign exchange rates have been adjusted, and institutional reforms have been undertaken, all with the goal of restoring economic growth. While a judicious mix of economic incentives can restore economic growth to African economies, the path to growth can be difficult to achieve. Moreover, growth-oriented reforms do not in and of themselves provide a guarantee that Africa's environment will at the same time be enhanced.

Policy Choices to Enhance Africa's Environment

For Africa's environment, the challenge ahead is to find policies that can enhance economic growth while at the same time preserving the natural resource base. Increasingly, the African Development Bank, the World Bank, and other multilateral and

bilateral funding agencies have incorporated environmental assessments as part of their overall lending strategies. To be sure, environment assessment procedures represent an expense as part of any project lending cycle, but such measures represent a step in linking the environment to sustainable growth policies.

Devising sustainable environmental policies requires an appropriate mix of economic incentives and suitable institutional arrangements based on a clear specification of property rights. By economic incentives, natural resources need to be priced on an opportunity cost basis, that is, at a level reflecting their replacement costs. To do so, policymakers need to take into account the external costs of development projects far more carefully than has been the case in the past, and to translate these costs into realistic market prices.

Second, property rights over natural resources must be more clearly defined at the end-user level than has been the case with so many past programs of reform. To do so, these rights need to be vested at the community and individual level, with clear specification of contractual rights and obligations.

Third, there must be an expansion of agricultural research designed to improve the productivity of inputs rather than simple increases in inputs. Such efforts encompass expanded education and training for farmers, the development of suitable patterns of crop mixing and rotation to preserve and enhance soil fertility based on historically known successes. As stressed in this conference, a singular emphasis of green revolution transfer has not worked in Africa, largely because too little research has been undertaken as to the determinants of successful technical change at the local level. The From the Ground Up Program of the World Resources Institute represents one such effort to discover successful strategies for technical change in Africa.

Fourth, as African countries are already reeling under the debt burdens from poor investments, economic mismanagement, and a changing international climate, one short-term solution to enhance both growth and the environment would be to consider a program of debt for nature swaps. Such swaps have already been experimented with in Latin America, and may provide a bridge to recovery for African countries already engaged in programs of structural reforms.

Fifth, until economic growth in Africa can be maintained at rates well in excess of three percent, policies to moderate population growth will be of significance in the African policy mix. Although some countries have managed to enjoy rates of economic

growth in excess of three percent, few have done so consistently over a long period of time, and which raises the significance of population within the African context. What needs to be considered in such policies is the demand for large families in Africa based on historically high rates of infant mortality, and on the absence of well defined financial mechanisms for social security as have been developed in developed countries.

Finally, developed countries also need to undertake more consistent efforts to enhance the global environment. This includes the recycling of industrial and commercial waste, elimination of toxic waste dumping through chemical reprocessing, and efforts to stem increases in global levels of carbon dioxide which contribute to greenhouse temperatures and to the risk of accelerated desertification and deforestation in Africa.

As noted by the conference keynote speaker, Ambassador Thomas Kargbo of the Sierra Leone Mission to the United Nations, African leaders are well aware of the factors influencing Africa's environment. For many Africans, the issue of environmental security cannot be separated from the associated problems of low levels of economic development which so many countries face. This suggests that efforts to enhance environmental quality cannot be divorced from effective programs to raise per capita income. As such, to the extent that structural adjustment programs are successful in raising per capita incomes, they may provide a positive basis for simultaneously strengthening Africa's natural environment. The key is to design structural adjustment initiatives in such a way that both economic growth and environmental quality are strengthened.

Phillip LeBel,
Director, CERAFF

**Environmental Policies
for
Sustainable Growth in Africa**

Phillip LeBel, CERAf. Good morning. I am Phillip LeBel, director of the Center for Economic research on Africa, and chair of the Economics Department of Montclair State. Welcome to today's conference. I am delighted that you could be with us this morning.

As you can note from our program, the theme which we have chosen for this conference, Environmental Policies for Sustainable Growth in Africa, is a very pressing issue, particularly when the world's attention seems to be so often turned to events in other parts of the globe. There are understandable reasons why Africa's concerns are sometimes overlooked, the recent war in the Middle East being a notable example. However, when those events settle, there are still some very urgent and pressing problems on the African continent, not the least of which is the issue of environmental quality.

One of the things we have tried to do with the Center for Economic Research on Africa is to provide an institutional framework for analyzing major issues affecting Africa's prospects for economic growth and development. CERAf is a public policy organization. It is five years old, and this is the fifth of our annual conferences which we have organized. Each year, the purpose of our annual conference is to bring together practitioners who are specialists in their particular field. They bring to us their personal and professional experience as well as the views of the institutions with which they are associated. We are pleased to do so again this year.

Many of you received an invitation to this conference that contained a list of originally invited panelists. As time and events have unfolded, we have had some changes in that program. Before I get into the mechanics of our presentations, let me note some of these changes. Until last Thursday, we had a commitment from Ms. Joan Martin Brown, the Washington Bureau chief of the United Nations Environmental Programme. We received a call this past Thursday from Ms. Brown, saying that she would not be able to participate in the conference as scheduled because of an emergency presentation she had to make to the World Bank. As Ms. Brown was not able to send us a text of her remarks or to confirm a suitable replacement, we note with regret the absence of the UN Environmental Programme at this conference,

In addition, we have had two substitutions from two of our participating institutions. One is Mr. Peter Veit, manager of the From the Ground Up program, who will be replacing Mr. Thomas H. Fox, director for the Center for International Development and the Environment, on behalf of the World Resources Institute in Washington, D.C. The other substitution is Mr. M.M.L. Shongwe, Division Chief of the Social and Environmental Policy Division of the Central Projects Department of the African Development Bank and Fund in Abidjan, Côte d'Ivoire, who will be replacing Mr. G.M.B. Kariisa, Deputy Director of the Central Projects Department of the ADB. Both Mr. Fox and Mr. Kariisa also expressed their regrets in not being able to be with us today, and have expressed their confidence in the skills and experience of their respective replacements.

The absence of Ms. Brown and the UN Environmental Programme notwithstanding, we are fortunate in having a very distinguished group of panelists with us today. In addition to Mr. Veit and Mr. Shongwe, respectively of the World Resources Institute and the African Development Bank and Fund, we have two other panelists whom I am pleased to introduce. First we have Mr. Kevin Cleaver, who is chief of the agricultural division of the Africa Technical Department of the World Bank in Washington, D.C. Our other panelist is Ms. Korinna Horta, economist in the Africa division of the Environmental Defense Fund in Washington, D.C.

Our keynote speaker today will be His Excellency, Mr. Thomas O. Kargbo, Ambassador Plenipotentiary and Extraordinary of the Permanent Mission of the Republic of Sierra Leone to the United Nations. Given his extensive experience in matters affecting his country and the continent, we are delighted that he will be providing us with his perspectives in our deliberations.

In rounding out this introduction, let me note that CERAf is affiliated directly with the Department of Economics, which forms part of Montclair State's School of Business. Before turning to our panel presentations, please allow me to present Acting Dean Albert Rossetti, of Montclair State's School of Business.

Albert Rossetti, Acting Dean, School of Business. Thank you very much, Phillip. As Acting Dean of our School of Business, I certainly would like to add to the welcome that Phillip gave to you. Our school is composed of six academic departments. One of our major missions has been the question of globalization and internationalization of the curriculum. Obviously, this type of program which the Economics Department has organized for the past five years fits in with this mission.

I would like to take this opportunity to thank Dr. LeBel, as chairman of the Economics Department, and his staff in the Economics Department, for all of the work that they have done in bringing you to our campus. I can assure you that with the planning that Phillip and his staff have done that you are going to have a very good conference.

For those of you who have been here before, we extend a cordial return welcome. If this is your first visit to Montclair, we are happy to have you here and we hope that this will be the first of many more visits in the future. So on behalf of the School of Business, I certainly would like to extend a welcome to all of you today, and to thank Phillip publicly for all that he has done in organizing this conference. Thank you and welcome.

Phillip LeBel, CERAf. In the program that you received this morning, there is a list of acknowledgements. I would like to add my public acknowledgement to those who have helped to organize this conference. We receive support from many sources within Montclair State. I would like to single our Administrative Assistant of the Center for Economic Research on Africa and Secretary to the Department of Economics, Mrs. Ida Fazio.

Secondly, I would like to thank Dr. Glenville Rawlins, deputy director of CERAf, who has also been instrumental in making this conference a success and for whose support we very much appreciate. Thirdly, I would like to acknowledge the displays put together by Dr. Robert Taylor and by Dr. Harbans Singh, of the Environmental, Urban, and Geographic Studies Department of Montclair State.

Finally, there is also a list of students who have been extensively involved in this conference. Without their participation, I assure you that this conference would not be a success. We try to involve students in virtually all aspects of the conference. We are delighted to have students involved, as we think it makes it more meaningful for them as well as for our participants.

In terms of our procedure this morning. I am going to ask our panelists to proceed alphabetically by individual, as opposed to institution. Their initial presentation would be up to a maximum of twenty-five minutes. Once we have finished with this initial round, we will then allow them to have a five minute opportunity to respond to the remarks that they have made. Once this has been completed, we turn over our discussion to the audience for questions. I expect this process to take up our morning session, after which

we will break for lunch. Following lunch, we will then have our keynote address by Ambassador Kargbo.

Kevin Cleaver, the World Bank. Thank you very much. The subject of my presentation is the population, agricultural, and environmental synthesis in Sub-Saharan Africa. Let me begin with some basic statistical trends. There are approximately 660 million hectares of forest on the African continent. About 4 million hectares are lost each year, and the number is increasing. The loss is about one-half of one percent per annum, and rising. Apart from deforestation, approximately 80 percent of Africa's rangeland shows signs of desertification. In the World Bank we have done some analysis recently and we find that there may be a trend to lower average rainfall in many countries, although there are some countries with wide swings.

The Significance of Africa's Environmental Problems

In the countries in which I have been working in most recently, namely, those on the west coast of Africa, one can see in many people's lifetimes, visually, the dry areas of the savannah which are moving down toward the coast. In other words, greater areas visually can be seen to becoming savannah land, as opposed to forest. As forests and woodlands are being destroyed, people must pay more and walk farther for fuelwood and building materials. Woodfuels, which are the staple of household energy in Africa, constituting some 90 percent of all household energy use, obviously become scarcer as deforestation proceeds. We find that women and children who are the collectors of fuelwood are spending more time collecting from distant sources. There is thus a great economic impact of this destruction. It is immediate, obvious, and significant.

We find also that as a result of the reduced rainfall and the spread of savanna, crop yields also tend to decline. In a study that a colleague of mine and I recently did, despite the hundreds of millions of dollars that the industrial countries have poured into Africa in agricultural development, we find that there is a widespread phenomenon of decline in Africa's crop yields. We think that the cause for this is in fact partly climatic change and partly, if not mostly, problems of soil degradation and desertification over widespread areas of land.

If you look at aggregate statistics for agriculture in Africa since independence, you find that agriculture has not been growing at a rate which keeps up with population growth. Let me give you some averages. Agriculture in the post-independence period on the average has grown at about 2 percent per annum in Africa. Population growth has

been 2.8 percent per annum on average. Africa's population growth rate has actually increased. Today, it is 3.1 percent per annum. There has been a tendency to increasing fertility. Obviously, agriculture is not keeping up with population growth. If you factor in the situation of declining crop yields due to soil degradation and possible climatic change, you see that the future is not particularly rosy.

Interactions of African Agriculture, the Environment, and Population Growth

How does all of this fit into environmental degradation? The research which we have done, which is tentative and which is based partly on a literature review, suggests some complex interactions. Research findings suggest that the combination of rapid population growth and agricultural stagnation are in fact the most important causes of environmental degradation in Africa. Environmental degradation in turn feeds back in reducing agricultural growth. The linkages, and this is the most controversial part of what I am going to say today, are through shifting cultivation, traditional agricultural practices, a breakdown in traditional land tenure systems, increasing burdens on rural women for traditional fuelwood gathering, exacerbated by inadequate policy. The rest of my presentation is the development of this hypothesis.

The linkage between population growth, agricultural stagnation, and environmental degradation is through a perverse kind of interaction through these traditional practices, combined with the imposition of population growth, exacerbated by inadequate agricultural policy. Let me begin with shifting cultivation. If you look at traditional African farming and livestock husbandry methods, you will find that in fact that they were incredibly well adapted to low population and abundant land situations.

Shifting cultivation is the term we usually use for traditional cultivation practices in Africa. What it required to implement was in fact land and labor. Shifting cultivators added very little fertility to the soil. They didn't have to. What they did when soil fertility was eliminated was to move on, to cut or burn bush or forest area, plant their crops for 2 or 3 years, and then move on, leaving that patch fallow for 10 to 20 years, which were very long fallow periods.

Long fallow periods did permit fertility to be reconstituted through natural processes. Vegetative growth and decay, after a 10 to 20 year period, did restore soil fertility so that other cultivators could move back. We find all over Africa that this system worked extremely well. It was, if you like, an agricultural system in equilibrium. It assured

subsistence sustenance for people. It did not assure much growth, but nevertheless provided for sustenance with a very limited rate of population growth.

Transhumant and nomadic livestock raising was similarly adapted to lower rainfall savannah areas, where people moved in effect their livestock to fit the vegetative availability and climate. What has happened in the last twenty years has been an incredible increase in the region's population. Those population growth figures that I gave you are historically unprecedented in terms of world experience.

Some of the population growth rates for some African countries, like Kenya, for example, which now has a population growth rate of approximately 4 percent, is unparalleled anywhere in the world. Obviously, just doing the arithmetic, what you find with this kind of growth is that there is less cultivable land per family on which to farm. The opportunities for shifting cultivation are declining. In fact, if you look at the statistics, you find that the arable land per person has declined by about two-fifths since 1960.

Implications of Accelerating Population Growth on African Agriculture and on the Environment

Another way of looking at this is that there about 500 million people in Sub-Saharan Africa today. By the year 2020, which is not very far off, there will be 1.5 billion people if these kinds of growth rates are maintained. With this kind of population increase, obviously people have been pushed into more and more marginal areas. They have gone to cultivate in semi-arid areas. I observed this in Kenya over the five years in which I lived in that country. People were moving down from the highlands into the semi-arid areas simply because there was no other land to cultivate, or into the forest areas.

In a few countries, of course, intensification of traditional means has occurred. Rwanda is a very interesting case, where traditional farmers, using traditional low input agricultural technologies have evolved very slowly in responding to population pressure. Even in countries like Rwanda, agricultural intensification can not evolve fast enough using traditional agricultural technologies. Therein lies the crux of the problem. The rate of population increase is simply too rapid for traditional societies to evolve fast enough. It is the speed of the evolution which is required, and which is at risk in Africa.

The Impact on Women of Africa's Agricultural and Environmental Decline

The destructive nature of shifting cultivation, moving into marginal or sensitive areas, is exacerbated by several factors. One of them is women's role in farming. Traditionally, in African societies, women are responsible for food crop production. What has happened increasingly in recent years is that not only are women responsible for food crop production, but in many African societies, men are moving to off-farm employment, either in rural areas or actually migrating to the cities.

We did a study in the Congo on farmer household characteristics. We found that 70 percent of the farmer heads of households were women. Men had migrated to jobs in the cities. From this and other studies, we find that women have very little access to capital. They tend to be neglected by agricultural extension services that are provided to farmers. Women also have less access to education. In many of these societies, they have no access to land, other than that which is given to them by husbands. They have no factors of production other than their own land, or whatever land they are able to obtain, and their own labor and that of their children's, to deal with these problems of agricultural production in an increasingly environmentally precarious environment.

The one factor of production that women can increase in their circumstances is child labor. There may, therefore, be pressure on women, because of the lack of access to other ways of dealing with the precarious environment, to have more children as a short-term survival strategy. The loop thus feeds back again. One of the factors that may be putting pressure on the incredibly high fertility rate in Africa is poverty. Women are thus pressed into poverty in an elusive search for suitable factors of production, given the lack of access to other factors.

Land Tenure as a Factor in Africa's Agricultural Environment

A second traditional problem that may be feeding Africa's high demographic rate is land tenure. Traditional land tenure systems are based on community land ownership. Land under such a system is allocated by elders, or chiefs. As in the case of shifting cultivation, pastoralism worked extremely well when land was abundant, contrary to much of the pre-independence literature. These community ownership systems not only worked well, but they evolved. They evolved in places of higher population density to even allocate land on a semi-permanent basis as populations increased, and possibilities for shifting cultivation declined. The problem is that in the last twenty years the traditional systems have begun to break down.

The breakdown in African traditional land tenure systems has been caused by migration, on a massive scale, both within and across countries. In many of these countries there is more rural-rural migration than there is rural-urban migration. People of different clans or tribes are mixing together. The traditional land allocation practices of one society are often insufficient or suitable to address the needs of immigrants. More than that, governments in many countries, perhaps influenced by the colonial powers of the past, have decided that traditional land tenure systems are inappropriate.

Many of these governments have acquired *de jure* ownership of all land. In all of the francophone countries of west Africa, for example, government owns the land. People do not own the land, although there are a few individual titles allocated to large land owners, e.g., foreign plantations and political elites. For the most part, government as the owner of the land has further exacerbated the breakdown of traditional land tenure relationships in these countries.

Finally, there has been a breakdown in traditional norms and in ways of dealing with one another in Africa, in general. Traditional means of land allocation have been replaced by the so-called "modern government", or "modern" means of land tenure. What we find, unfortunately, is that the "modern" form of land tenure has not been adequate. The institutions of government in virtually every African country that we have looked at, have not been adequate to replace these traditional tenure mechanisms. The result of that has been open access land tenure.

Open access is really anarchy, in which either the traditional land allocation process by the chiefs, nor the modern systems holds sway. This is a tragedy of the commons, if you will, where people cultivate land simply by squatting on it. The result is that people have no land tenure security, because that land does not belong to them, neither in a traditional sense nor in a modern sense. Without clear ownership rights, the incentive for people to conserve land or to invest in it is limited. In fact, it is nonexistent. We think, therefore, that one of the things that is contributing to this environmental degradation that I mentioned before is open access land tenure.

It is not just greater numbers of people on the land, although that is a big part of the problem, that is contributing to Africa's environmental degradation. It is the weakness of traditional institutions and the inability of modern institutions in this particular case, land tenure mechanisms, to replace them, which is causing the degradation. Again, what we see is that it is the problem of speed of change. Population increases so rapidly that the

speed of change, in this case, land tenure arrangements, can not keep up. Land tenure is changing, but it is not changing fast enough. This has been very much the case in terms of traditional cultivation practices, i.e., changing, but not changing fast enough to keep up with population growth.

To take another example of traditional practices, let us look at energy. As I noted before, ninety percent of African household energy consists of fuelwood. We find that fuelwood in Africa is essentially free to harvest on open access land. Nobody owns the fuelwood, except in the traditional sense. Fuelwood which is free is simply collected, and the market price, when that fuelwood is sold, is equal to some notion of transport costs and profit. It does not include the cost of replanting. In that circumstance, there is no other energy source that is going to compete with fuelwood. Fuelwood is going to be the cheapest. As a result, there is an encouragement through the marketplace, a distorted marketplace it should be noted, to use fuelwood. Indeed, we see all over Africa, fantastic destruction of fuelwood and very little replanting of supplies. The elimination is occurring at a rate far in excess of replanting. Indeed, from the literature, many writers contend that fuelwood is the gravest source of environmental degradation in Africa.

Africa's Economic Policies Have Also Contributed to Environmental Degradation

There are lots of other factors that have contributed to agricultural stagnation, and which have fed back into this picture of environmental degradation. You find all over Africa a history of overvalued exchange rates, price policies which effectively tax agricultural production, both export and food production, subsidizing competitive agricultural imports. In this circumstance, profits of commercial agriculture decline.

In this situation of low profitability of agriculture, it is even more difficult to stimulate the transition from subsistence and shifting cultivation agriculture to a more intensive form of agriculture which would permit sedentarization of people on the same parcel of land. Settling people on land would require additions to the fertility and investments in the land. Surely, if agriculture is unprofitable because of confiscatory government price policies, farmers are going to have less of an incentive in these circumstances to invest in the land, to intensify their production. You have the unhappy circumstances a policy environment which provides barriers to improvements.

Logging fits into this picture. Logging is the most popular bogeyman of environmental degradation in Africa. In fact, it is not the major culprit, but it is a culprit in environmental degradation, particularly in the tropical forests of central and west

Africa. Logging fits into it because farmers tend to move into areas that have been cleared or partially cleared by loggers and the long logging loads. In west and central Africa, where you have much more land and smaller population densities, you still have the very rapid environmental degradation that is exacerbated or stimulated by logging activities, and people moving into ecologically sensitive areas as a result.

The way that it works is that human settlement prevents regrowth of the forest. The absence of regrowth prevents the growth of plant and animal species. We see this even in countries like Zaïre, which has by far the greatest forest density in Africa. People are moving in the forest, partly in conjunction with logging activity and partly in conjunction with plantation activity.

What should one do about this situation of population growth, farmer practices which are very difficult to change, land tenure, women's roles, fuelwood gathering strategies which are inimical to environmental protection? An action plan is not obvious. There have been many things tried in Africa to address some of these problems. The problems which I have mentioned are not new. Many of them have been known, at least partially, for some time. In terms of land tenure, there have been countries which have experimented with titling. Kenya is a case in point. What has been found has not been encouraging. Land tenure titling programs in Kenya have facilitated land grabbing by the political elite, because in these countries, very weak institutions are very vulnerable to manipulation by the political elite. What one finds is that land allocation becomes skewed. Modern tenure permits a very small number of people to grab most of the land.

Even in population programs, one also finds a very discouraging picture. Most of the population projects have been what I would call supply oriented. In them, one distributes the instruments of population management, e.g., condoms, interuterine devices, but the problem is that there is no demand. If women and men, for combinations of economic and cultural reasons, want larger families, they are not going to use these devices. In fact, this has been the experience of population projects throughout Africa. There has been very little demand. The statistics tell the story. They show that fertility rates are actually increasing, as I mentioned before. They are now at about 6.7 children per woman, when in all of the rest of the developing world, fertility rates have declined. The average in the developing world is now 4 children per woman. Africa is different. People want larger families. Supply driven population projects do not work.

Technological Fixes Are Not the Answer to Africa's Environmental Dilemmas

Consider the green revolution technology. For twenty years we thought that this would solve the problem of low input shifting cultivation. What we would do is introduce the green revolution technology that worked so well in Asia. It did not work for the most part. The fertilizer and high yield seed mechanism packages were, as in the case of population programs, not in demand by farmers. It is true that you could find spots in Africa where it has worked, but in a statistical sense, it has not worked.

What might work? First, in terms of population, what we need is to create a demand for smaller families. That is going to occur essentially through education. This is also true for land tenure.

In agriculture, we are going to have to find a new technology that is more adaptive. And here we get to the sustainable agricultural technologies which we talk about. There is a different kind of technology which we can introduce. Land tenure. We are not going to be able to jump from the traditional to the modern in five to ten years.

We are going to have to find a way of protecting traditional land tenure. An intermediate step would be to provide titles for community ownership. There should also be a government divestiture of land holdings to these local communities.

Positive Steps by the International Donor Community

There is a role in all of these steps for international assistance. Donors can help a lot through financing agricultural research systems to look at sustainable agriculture such as green revolution technologies. Donors can also help by financing land tenure reform, assisting governments and countries to give land back to local communities to protect them.

Donor assistance notwithstanding, most of the measures needed to preserve Africa's environment in a climate of economic growth is going to have to come from African societies themselves. They are going to have to find a way of accelerating the process of adaptation to rapid population growth and accelerating the process of reducing population growth to a rate that is more sustainable environmentally. If this does not occur, the rates of destruction that I summarized initially is going to occur. With 1.5 billion people by the year 2020, as opposed to 500 million at present, suggests that the environmental

destruction will be of such a magnitude that living in Africa will be unsustainable. Thank you.

Korinna Horta, Environmental Defense Fund. Thank you. While there are internal problems that contribute to the degradation of Africa's natural resources, this should not serve as an alibi for overlooking exogenous factors responsible for unsustainable development in Africa. These exogenous factors are rooted in questions of international trade and debt, and in the inadequate development models supported by international donors.

Multilateral Development Institutions Bear Major Responsibility for Solving Africa's Environmental Problems

Not enough attention is being paid to the impact of policies and projects by multilateral institutions on the state of the environment in Sub-Saharan Africa although economic development and the well-being of hundreds of millions of Africans depend directly on the conservation of the continent's natural resources. These institutions are not innocent bystanders in the unfolding ecological crisis in Africa. The International Monetary Fund and its sister organization, the World Bank, wield more influence over economic development and environmental quality than any other single institution on earth.

I would like to start off with a quote from Mr. Michel Camdessus, managing director of the International Monetary Fund, from a speech he gave in July 1990 before the United Nations Economic and Social Council. He said,

"When I refer to growth, I mean high quality growth, not pseudo-growth. To be frank, there have been many instances of the latter over the past twenty years, which helps to explain how the world is now, which is not only insufficiently developed, but also wrongly developed. Allow me to explain what I mean by pseudo-growth..."

There is growth for the privileged few, leaving the poor with nothing but empty promises... There is forced quantitative expansion, pursued through the disorderly exploitation of natural resources, and the ravaging of the environment."

It is somewhat surprising that these words of wisdom should come from the head of the International Monetary Fund, which is probably one of the world's most secretive and impenetrable institutions. The excessive secrecy surrounding IMF operations makes oversight of the institution by the appropriate legislative bodies in member countries extremely difficult. It almost goes without saying that people all over the world affected by its programs and policies have even less access to the relevant information on the agreements supposedly worked out on their behalf by the IMF and their governments.

Today, the absolute majority of countries in Sub-Saharan Africa are engaged in stabilization and structural adjustment programs promoted by the IMF. IMF policy prescriptions and the conditionality accompanying these programs aim at assisting a country in balancing its internal budget and in reducing its balance of payments deficits - an impossible task as long as massive debt relief is not forthcoming. Instead, nothing short of a drastic slashing of domestic expenditures and the relentless pursuit of exports is what is demanded of countries by IMF policies, with little regard for the social and environmental consequences.

Macroeconomic policies have clear implications for land use patterns, and thus for the sustainability of a country's resources. The World Bank has acknowledged this relationship and promises to study the matter, while the IMF continues to drag its feet on addressing the social and environmental impact of its operations.

Linkages Between Structural Adjustment Policies and the Environment

There are three basic linkages between the economic policies promoted by structural adjustment programs and the environment. First, there is increased economic pressure on the poor. The vicious cycle of increasing poverty and growing environmental degradation has been well established. Neutral sounding terms such as "demand management" and "curtailment of domestic absorption" can no longer hide the reality of an increasing marginalization of whole sectors of the population in Africa, which, as a result, are often pushed into ecologically fragile areas and unsustainable activities.

Second, governments are most likely to reduce their budgets by cutting spending in the so-called soft sectors, that is, for social support services and environmental protection. Restoring fiscal balance is thus paid for partly through further cost to the environment.

Last, but not least, there is pressure to earn foreign exchange through ever increasing exports of natural resources and agricultural commodities at an ecologically unsustainable pace. Attractive market prices for agricultural commodities do not reflect the social costs of production which African societies must bear, and thus create a false sense of growth.

The IMF continues to claim that countries would be far worse off without IMF involvement, although this blanket statement is contradicted by the IMF's own 1988 study, "The Implications of Fund-Supported Adjustment Programs for Poverty". The study acknowledges that sharp cuts in capital expenditures, in health and in education programs - to which one could add, cuts in environmental protection - prompted by Fund programs, have worsened the lot of the poor over both the short and the long run.

It is rather shocking that the IMF - as the world's chief economic policy-maker - has thus far refused to address environmental concerns in its activities. Although there is some rhetorical acknowledgement at the highest levels in the Fund that the environmental impact of the policies it promotes should be addressed, there seems to be little political will to do so. Even the idea of establishing a small Environment Unit in the Fund's Fiscal Affairs Department has fallen on deaf ears so far.

In the same speech that I quoted above, Mr. Camdessus describes "high quality growth" as opposed to "pseudo-growth" as a "growth concerned with the poor, the weak, the vulnerable...it is growth that does not wreak havoc with the atmosphere, with the rivers, forests or oceans, or with any part of mankind's common heritage". Unfortunately, nothing of this statement seems to be trickling down to the operational level, which continues to focus on a country's short-term repayment obligations. This pre-occupation with short-term adjustment is largely divorced from the broader development policy context needed to ensure social progress and the conservation of a country's natural resource base.

The IMF's sister organization, the World bank, has come under much closer scrutiny from the international environmental community for the simple reason that much of its lending is for projects whose environmental consequences can be directly observed and whose impact is immediately felt by affected communities. However, there is little evidence thus far that the Bank has been able to translate its stated twin goals of sustainable development and poverty alleviation into concrete policies and actions at the operational level.

The Difficulty of Sustainability, Participation, and Conservation in Multilateral Forestry Projects

Although much of the language of "sustainability", "participation" and "conservation" is now part of the Bank's regular vocabulary, there is a lack of clarity in how the Bank really hopes to apply these principles or what the terms really mean. The lack of definition of key concepts such as sustainability is best illustrated by the Bank's current or planned involvement in the forestry sector of several African countries.

The Bank fully acknowledges that the loss of Africa's tropical forests is one of the continent's foremost environmental problems. As late as the mid-1980's, fifty-five percent of all global tropical forest loss occurred in West African countries. At this moment, there is increasing pressure to speedily open up the forest of central Africa - the world's second largest area of tropical forest after the Amazon - which covers southern Cameroon, the Congo, Gabon, and Zaïre.

While there are many examples of failed projects, I would like to cite just one case, which is based on the World Bank's internal assessment. Just last month, the Bank published a Project Completion Report for a large industrial complex in northern Congo, which was intended to assist the Government's efforts to expand logging and woodprocessing. Seven years after the loan became effective - with a total investment estimated at over 60 million dollars - the Bank report concluded that the project had not met its objectives, stating that "the construction of the wood-processing complex is incomplete and even if it were completed, it is not clear if it would ever be financially or economically viable".

A central component of the Bank's loan involved studies on ways and means to ensure successful integration of the area's Pygmy population into the activities. These studies were never carried out because - as the report states - the funds established for these studies were diverted to other activities. For this reason - the report continues - the benefits to the Pygmy population from the existing operations cannot be determined. Should one conclude from this that the Pygmy population would be unaffected by the loan?

The considerable environmental and social costs of the Congo project - deforestation, increased poaching of wildlife, and the disruption of the life of the forest-dwelling communities - have not even been taken into consideration. As the Bank

declared this project to be a failure on purely financial grounds, in this case, the point became moot.

The critical role of forests in providing for the livelihoods of local people, in protecting watersheds and soils, in the preservation of biological diversity and in regulating regional rainfall, is well known. Also, the importance of forests in the global carbon cycle is better understood today, deforestation being a substantial factor in the release of greenhouse gases into the atmosphere which are leading to global warming.

Sustainable Development in Africa Requires Fundamental Knowledge of the Continent's Environmental Dynamics

World Bank documents show clearly that there is a tremendous lack of scientific knowledge about the sustainable management of natural forests. A recent study by the Bank's Operations Evaluation Department, or OED, reveals that natural forest management has been highly unsuccessful in the Bank's past forestry lending. More often than not, World Bank project funding has enabled countries to convert natural forests into monoculture plantations which have not only become social and environmental failures - but, according to the same OED study - also financial disasters as their financial earnings capacity has evolved towards less and less liquidity.

Despite these findings, the Bank plans to vastly increase its forestry sector lending to Africa over the next few years. Almost half a billion dollars is planned for investment in Africa's forests between 1991 and 1994. Loans for the countries of Africa's great equatorial forests are already in the pipeline - that is, for Cameroon, Gabon and Zaïre.

The governments of these countries are interested in obtaining World Bank credit to help them earn foreign exchange from tropical timber exports. As all of this money is expected to be paid back with interest, some governments will feel pressured to chop down their country's forests to be able to service these loans. Given current rates of deforestation in Africa, this is equivalent to consuming natural capital, with vastly diminished prospects for future growth.

There are practically no examples of "sustainable logging" in tropical rainforests, as a 1988 report done by the International Tropical Timber Organization documented. Industrial logging not only destroys ecosystems. It is also unsustainable in the narrowest meaning of the word because even sustained-yield timber production has proven to be an illusion in natural forests.

An international controversy last spring about a Forestry Sector loan to Côte d'Ivoire became the pivotal event leading the Executive Directors of the World Bank to demand that the Bank formulate a new forestry policy with more emphasis on conservation of forests. Environmental organizations in many countries, led by the World Wildlife Fund, fear that this loan would increase deforestation in Côte d'Ivoire, a country already so severely deforested that reductions in rainfall and increasing drought conditions are causing a reduction in agricultural output.

In an unprecedented move, the U.S. Executive Director of the Bank, representing the Bank's largest shareholder, abstained from voting in favor of the forestry loan to Côte d'Ivoire. He was concerned that it would open up nearly half a million hectares of relatively intact forest areas to logging operations and that it failed to include a plan for agricultural stabilization needed to prevent encroachment into the newly opened forests. He was also concerned about the loan component regarding the resettlement of as many as 200,000 people, without providing measures for the rehabilitation of the affected population.

Logging, as Kevin Cleaver has already mentioned, is one of the main causes of deforestation. As roads built to move machinery and trucks open up access to the forests, migrant farmers, who are unfamiliar with the mostly unfertile soils of the forest, and who, in order to survive, complete the destruction caused by logging by clearing the remaining forests for short-lived agricultural production.

Policy Choices for Sustaining Africa's Environment

There is a consensus in the international environmental community and among a number of Executive Directors at the World Bank, that the Bank needs to radically rethink its lending operations affecting tropical forest if Bank policies and projects are not to play a significant part in the ongoing destruction of tropical forests. First drafts of the Bank's new Forest Policy, which is scheduled to become operational this coming fall, were recently circulated and they are not encouraging.

The World Bank's new forest policy, it seems, will continue to be predicated on an almost religious belief in forests as renewable resources that can be sustainably exploited for timber production. However, no evidence is provided for this assertion.

The new forest policy also does not reveal a commitment of the World Bank to the rights of indigenous and other forest-dependent peoples. Projects affecting tropical forests have led all too often to an expropriation of forest resources from local communities to the benefit of industrial sectors. While mention of the need to look at issues of land tenure is made in the new forest policy statement, and the link between land security and the conservation of forests is established, the new policy is not promoting the transfer of control over resources into the hands of the local communities that depend directly on them.

Popular participation is now one of the most frequently invoked terms in development projects. But the term is not well defined, and much of the text in the draft of the World Bank's forest policy statement seems to imply a rather passive type of participation whereby "project beneficiaries cooperate in sustainable management schemes". No mention is made of granting local communities the right to have a decisive voice in development efforts that are supposed to benefit them.

Environmental organizations have also taken note of how little attention is given in the World Bank's new forest policy statement to how agricultural lending by the Bank affects the quantity and quality of forest stocks. For decades the Bank has promoted agricultural intensification directed towards mechanization and the production of cash and export crops at the expense of labor-intensive production systems that directly meet basic needs. The track record of agricultural lending to Sub-Saharan Africa is especially bad. The Bank's 1990 Operations Evaluation Department Report rated fifty percent of the Bank's agricultural projects to Africa as "unsatisfactory", in other words, as failures. This does not augur well for forestry projects.

These failures presumably do not even include a calculation of the social and environmental costs of World Bank agricultural projects. Agricultural sector loans can lead, for example, to excessive land concentration - as in industrial palm oil plantations - which contribute to increasing landlessness and which force people to move into ecologically fragile areas.

Anothe major flaw of the new forest policy in its present form is that it fails to analyze the external forces driving deforestation. Chief among them is the demand of northern industrial countries for tropical timber, as well as agricultural and mineral commodities. Prices paid on world markets for these tropical products simply fail to take into account the associated social and environmental costs borne by tropical producers, and thus reflect an inefficient allocation of resources.

One major stumbling block to environmentally and socially responsible development projects is the World Bank's structure of lending incentives. The World Bank's Operations Evaluation Department's Report on Bank experience in forestry lending, which was completed last month, cites lending pressure as a factor in poor project appraisal. It mentions that lending pressure may further increase because of the Bank's plan to increase forestry lending significantly.

World Bank officials are under pressure to lend money and to do so quickly if they want to further their careers. There are no incentives for officials who would like to delay disbursements of a particular loan out of concern that environmental aspects are not properly prepared or addressed. For example, a World Bank consultant working on an Environmental Impact Assessment is likely to see his contract end as soon as he decides to blow the whistle on an environmentally indefensible project. If there is no more project, then there is no more work.

I would like to conclude with a short comment on the African Development Bank. Of all the regional development banks, the African Development Bank has gained a reputation of being the least concerned about the environmental destruction that many of its projects cause.

As an example, I would like to mention a very recent loan proposal which was scheduled to be discussed by the Board of Executive Directors last week. The loan is for road construction deep into the pristine tropical rainforest in southeastern Cameroon. The only purpose of the road is to facilitate the movement of logging trucks in the area - a subsidy to foreign logging companies, if you wish to call it that. No environmental impact assessment has been made for the project, although it threatens massive deforestation and the survival of the Baka people, Pygmies who have lived in these forests since time immemorial. This project violates the African Development Bank's own Environmental Policy paper which it published in May of last year. Ironically, the paper characterizes the destruction of forests as "one of the most unfortunate and dramatic events in Africa". Where is the link between the Environmental Policy paper and actual operations?

Some progress has been made over the past few years regarding environmental safeguards in internationally funded projects, especially at the World Bank. On balance, however, multilateral development institutions still seem to see the environment more as a public relations problem than as an issue to be dealt with seriously. Thank you.

M.M.L. Shongwe, African Development Bank Group. Thank you. First of all, I would like to thank Dr. LeBel for having invited the African Development Bank, the youngest of the multilateral development institutions, to participate in this conference, especially to share the experience of the Bank in the area of environment and sustainable development. In terms of my presentation, I would like to change a little bit the spirit of the content of the presentations, in contrast to the two last speakers, who spoke to you of the good and bad actions in the region.

The Development Context of Africa's Environmental Problem

The environment problem in Africa is also a development problem. For many of the environmental issues in the region: desertification, deforestation, are critically and intrinsically linked to the low level of development as well as the precarious existence of the people. Hence, while the need to preserve the environment is clearly identified and recognized, oftentimes the struggle for sheer existence may appear to assume the top priority. This is not to say that there is a trade-off between development and the environment. They are complementary but the task of establishing the complementarity is not yet finished.

The process of integrating environmental considerations in the Bank's operations has been slow but steady, because we are not inventing the wheel as others have done, and we have to take into consideration those failures that have already been experienced by our predecessors.

The activities of the ADB Group concentrate on project lending and commitments to sectoral and structural adjustment programmes in Regional Member Countries (RMC's). In 1990, the Bank committed eighty-three percent of its loan resources to various sectors, including agriculture, road transport, public utilities, education, and health, as well as lines of credit to national development finance institutions. In the same year, the Bank Group also committed seventeen percent of its resources to sectoral and structural adjustment programmes.

Dimensions of Africa's Environmental Challenge

Allow me now to briefly outline the environmental problem in Africa as we see it at the African Development Bank. Africa is facing an explosive population growth and accelerated environmental degradation. Although in many cases, Africa's natural resources have not been exploited to their full potential, the limited carrying capacity of

the environment in some areas, e.g., the Sahel, determines the kind of development activities that can be implemented.

All over Africa, the soil productivity is being reduced by too short crop rotation periods, overgrazing, and soil erosion, particularly in areas of dense settlement and cultivation. The growing population pressure leads to an intensified use of marginal lands for fuelwood and cropland, leading to deforestation and accelerating desertification. This results in increased surface water run-off and soil erosion, lower groundwater levels, and could further reduce rainfall in arid areas. Furthermore, erosion leads to irregular flow and heavy siltloads of rivers, complicating impoundment for hydropower and irrigation.

In the Sahel, and in East and Southern Africa, soil erosion is due mainly to over-exploitation of rangelands. These are often being overgrazed, due partly to drought conditions and partly to overstocking. With the existing level of resource use, the effects of dry years leads to a dramatic and long-term deterioration of natural resources. The savannah woodlands are subject to clearing for agriculture and construction, and woodcutting for fuel and building material. The Sahara and Kalahari deserts gradually invade the surrounding areas, leading to substantial land degradation.

Deforestation is the main cause of soil erosion of tropical forests in coastal zones and the highlands of Northern, Eastern and Central Africa. Most of the deforestation in Africa is caused by shifting cultivation. Yet, especially in West Africa, tropical rainforest is cleared on a large scale for commercial purposes.

Most tropical ecosystems are biologically diverse in their natural state, especially the tropical rain forests. Conversion of natural areas, deforestation and cultivation of monocultures leads to habitat loss, a major threat to biological diversity. With species from the biological reserves (gene pools) of tropical ecosystems, existing species can be improved and new ones developed.

Toxic Waste Pollution Must be Controlled if Africa is To Achieve Sustainable Levels of Environmental Quality

Pollution is a growing problem in Africa, especially from waste disposal of poorly serviced urban areas. Although industrial pollution is not a large-scale problem as yet. However, some western industrial countries are trying to dump their toxic waste in Africa.

The African environmental conditions have led to a wide distribution of vector-borne diseases. Some of these diseases, such as sleeping sickness, also decrease the productivity of livestock and restrict its grazing opportunities. Only the combined effort of immunization, vector control, and vector habitat alteration can eradicate these diseases. Pollution and environmental degradation also lead to further environmental health problems.

The Environmental Policy of the African Development Bank

The long term economic and social development of Africa requires the effective management of the continent's natural resources. The Bank's increasing concern with sustainable development and the environmental impact of its lending programmes, resulted in the elaboration of an environmental policy. The Environmental Policy Paper of the ADB Group, published in 1990, seeks to:

- assess the state of the environment in Africa and assist the Regional Member Countries in identifying major environmental issues;
- present environmental policies for each of the ADB Group project and non-project lending programmes;
- present recommendations for the implementation of environmental policies and the use of appropriate environmental procedures in the project cycle;
- assist RMC's in developing national environmental policies, legislative framework and institutions involved with environmental and natural resources management.

The Bank Group, in its effort to manage the environment and natural resources for its regional member countries, has proposed a set of sector and sub-sector environmental policies for application in its lending operations. These policies will be utilized for purposes of undertaking environmental examination for those projects that may:

- Adversely affect natural resource sustainability;

- Significantly affect human health;
- Lead to the loss or serious deterioration of living natural resources; and
- Significantly affect the livelihood and subsistence of people.

Environmental Examination will be carried out on all Bank projects through the use of sectoral guidelines and assessment procedures. The environmental policies of the Bank Group concentrate on those sectors and sub-sectors that the Bank Group's development efforts are focused. These are mainly: Agriculture, forestry, fisheries, transportation, industry, energy, health, natural resources, water, technology, human settlements, resource conservation, tourism and natural disasters.

Development of Environmental Guidelines

The ADB is presently documenting the process by which it proposes to apply environmental impact assessment guidelines to its lending activities. A set of Technical and Procedural Guidelines are being finalized. The overall objective of the guidelines is to integrate an environmental impact assessment process into ADB development projects and programmes. The guidelines are intended to provide ADB staff with the information needed:

- for a step-wise approach to environmental screening of projects, in compliance with the project cycle, noting the many actors in the project environment;
- to ensure that during project preparation, appraisal, implementation and evaluation, and in the related documents, due attention is paid to the environmental aspects of the project;
- to get a better understanding of the mitigative measures required for a given environmental issue.

It is important that we, as an African institution, whose chief responsibility is to ensure that development of our people is sustainable, that whatever steps we suggest will be for the long-term. Though the guidelines are not a substitute for environmental regulations, they should, however, be used to consider environmental issues besides

technical and economic aspects, when preparing a project. They are meant to enable the staff of the Bank involved in the different stages of the project cycle to help mitigate the environmental impacts of a project.

We consider that continuous training of staff in environmental screening of projects will be an ongoing process. Such training will help to ensure that the environmental guidelines developed by the Bank are effectively applied during the project cycle.

Environmental Considerations in the Operations of ADB

The Bank believes that an analysis of environmental impacts must be a continuing, dynamic process initiated at the earliest stages of a proposed development activity. Information on environmental impacts which may be caused by a project has to be incorporated in the project cycle and evaluated before the implementation of the project reaches an advanced stage.

The environmental assessment guidelines being developed for application are meant for incorporation in the environmental evaluation process at every stage of the project cycle. Methods to assess environmental impacts expected will be combined with administrative procedures so that the results of the environmental assessment can become an integral part of project planning and decision-making.

Initial Environmental Examination (IEE)

It is envisaged that the results of the initial environmental screening of a project will be contained in the project identification document or Project Brief. If a more detailed environmental assessment is required, Terms of Reference (TOR) for an Environmental Impact Assessment study (EIA) will have to be prepared. Though my colleagues at the World Bank are already familiar with these procedures, I think it would be useful to mention them here. The terms of reference for an environmental impact assessment study will be prepared, but of course there are implications in all of this, implications that relate to the capacity of these countries to be able to undertake environmental impact assessment, ability for the Bank staff itself to be in a position to do policing in terms of environmental impact assessment of these projects.

Environmental Impact Assessment Studies

If a project requires a full-scale environmental impact assessment, the EIA study will be executed by a team of experts especially selected for this task. There are some negative indicators in this type of approach, but in the absence of expertise from within these countries, we will perpetually use consultants to undertake this sort of work. As my colleague indicated before, it is a dialogue that aims at improving the processes by which we introduce sustainable development in the lending exercises our institutions are concerned with. The guidelines being developed will provide ADB staff with information needed to prepare specific Terms of Reference for the environmental impact assessment of a particular type of project.

The Need for Mitigative Measures in Environmental Policy

After the assessment of environmental impacts caused by a development project, measures will be proposed to prevent or reduce each of the adverse impacts evaluated as being significant. A wide range of mitigative measures or interventions may prevent, reduce, remedy or compensate adverse environmental impacts, such as:

A. Modifying the project design:

construction: project sites, routes, timing of activities;
operation: processes, raw materials, fuels,
waste disposal routes or locations;

B. Introducing new project elements:

construction: phased implementation, landscaping;
operation: monitoring, pollution control, waste treatment,
safety requirements, personnel training, special social
services, public education;

C. Offering compensation;

restoration of resources, concessions on other issues, money
for affected persons, programmes to enhance other aspects of
the environment or to improve the quality of life of the
affected community.

Often costs are involved when environmental protection measures are incorporated in the project design and implementation. I think this is the crux of the matter. Most African countries understand about environmental protection, environmental conservation. The question is: who pays? These are some of the issues I hope we will be able to discuss here and come up with some proposals. The additional costs for environmentally sound project design would be considered when the overall costs and funding of the project are calculated and planned during project preparation and appraisal.

Environmental Monitoring

The Bank will perform environmental monitoring in development project to, for instance:

- ensure that legal standards such as for pollutants are respected;
- check that the planned mitigative measures are implemented;
- provide early warning of environment, so that actions may be taken to reduce the harmful impacts on the environment.

Environmental monitoring will be limited to those parameters that provide information on the performance of the environmental protection measures incorporated in the project. Also, monitoring will include measurement of parameters which reflect the actual magnitude of impacts identified as being significant.

The Role of Environmental Auditing

After project implementation, the actual impacts of project operation, the accuracy of the predictions, the effectiveness of the mitigative measures, and the functioning of the established monitoring programme will be determined and evaluated through proper auditing. Environmental auditing refers to the organization and analysis of the monitoring data to assess possible changes in the environment as a result of project implementation. Comparison of actual and predicted impacts provides information on

the effectiveness of the environmental impact assessment executed before implementation of the project.

"Learning from experience" as a result of effective post-monitoring and auditing is very important for improving the quality of development assistance as well as for developing more effective and accurate methods for prediction of environmental impacts.

Development of Environmental Procedures Guidelines

The environmental policy paper of the ADB Group states that the key to environmental management and sustained development will be the use of procedures to assess the environmental impacts of the Bank's lending procedures to assess the environmental impacts of the Bank's lending programme and projects. Adequate procedures will support decision-making and enable the integration of environmental considerations in all stages of the project cycle.

The Bank is aware that the purpose of procedures is to ensure that the role of renewable and sustainable development is systematically taken into account in structuring programmes and in the design and implementation of projects.

Procedures form the complex of rules, regulations and traffic signs of an organization, that guide and streamline the passage of a project or programme. With respect to environmental assessments, procedures are those internal decision-making mechanisms that are used in the organization to ensure that environmental assessment is incorporated - throughout the project cycle by making use of technical environmental assessment guidelines.

The Bank sees the objectives of procedures as necessary support to the application of technical environmental assessment guidelines. These are:

- To present recommendations for the application of these technical guidelines in all relevant stages of the project cycle of the ADB Group;
- To streamline the use of the technical guidelines in the departments and/or divisions related to the implementation of projects and programmes;

- To provide recommendations for implementation of procedural environmental assessment guidelines.

These procedures will eventually be an integral part of the Operations Manual used by staff engaged in programme and project operations. In the process of drafting guidelines attention will be given to their future use and as such they will be tailor-made to fit the decision-making climate.

NGO Participation in ADB Environmental Policy Strategy

I would like to indicate that the Bank is developing active relationships with NGO's, or Non-Governmental Organizations. Last year the Bank developed a policy for dealing with NGO's, because we recognize their skills as indigenous people, for them to participate in the implementation of Bank-financed projects. We believe that a consensus seems to be building among all participants as to the development agenda, and particularly the role of the environment, although, in the absence of common standards for judgment, there may continue to be some divergences in opinion among the various actors.

These are some of the issues that we have to address. When you say that you want to preserve the Pygmies in country X, when perhaps the priorities of that government is to modernize the Pygmies, those are some of the standards we need to harmonize, to ensure that we are all working toward a betterment of the indigenous people of the land. Thank you.

Peter G. Veit, World Resources Institute. There is a real advantage to going last. I would like to focus on some issues that relate to natural resource management, local level natural resource management, national policies, and what was referred to earlier, namely, popular participation.

Introduction

In the years immediately following independence many nations in sub-Saharan Africa successfully consolidated their political boundaries, established national development objectives, and expanded their basic infrastructure and social services. Ghana and Tanzania, through their emphasis on mass literacy, were often cited as successful examples of emerging nationally coherent states during this period. But after an initial period of growth, most African economies went into economic decline. During

the period 1961 to 1987, for example, Uganda's Gross Domestic Product declined by 2.2 percent per year, reflecting not only domestic civil unrest, but also a host of internal and external adverse conditions.

To be sure, there are some exceptions to this trend, notably Botswana, which experienced an 8.3 percent rate of growth in GDP between 1961-87, but sub-Saharan Africa as a whole has now witnessed almost a decade of falling GDP. With economic decline has come falling real per capita incomes, declining agricultural productivity, rising population growth rates, increasing hunger, and accelerating ecological degradation, as many of the panelists today have already discussed. Indeed, the World Bank estimates that, overall, Africans are almost as poor today as they were 30 years ago. These conditions have severely and adversely affected the standard of living of the most vulnerable groups, namely, women, youth, the elderly, and the disabled.

There are many reasons for this decline. Africa has a fragile resource base. Eighty percent of the soil is fragile. Forty-seven percent of land is too dry for rain-fed agriculture, which is defined normally as land with a minimum of 800 millimeters per year. Worse yet, the annual rainfall variation in many parts of Africa ranges between thirty and forty percent.

Beyond Africa's natural environment, public policies have also contributed to the region's economic decline. Government institutions have often performed poorly, stemming partly from development policies that emphasized urban over rural areas, import-substitution programs, and state-led industrial investment. As these policies became unworkable, Africa's debt service payments increased, limiting the flow of new investment, and hampering the returns on existing investment. Clearly a change from the status quo was needed.

Africa's economic stagnation encouraged many governments to undertake political and economic reforms, particularly during the 1980's. At present, more than half of the countries in Sub-Saharan Africa have embarked on structural adjustment and economic recovery programs. According to the World Bank, the countries that have persisted with these reforms since the mid-1980s are now showing the first signs of improvement. At the same time, some organizations, such as the United Nations Economic Commission for Africa, have expressed concern regarding the relevance of these programs to Africa's long-term development objectives. They have noted that adjustment has often had adverse effects on individual and family social, economic, and financial conditions, even if, in the aggregate, adjustment is a necessary step to reversing Africa's decline. As to our

concerns here, some of these studies have noted the environmental costs of adjustment, and which raises the issue of what measures are needed to provide for both environmental protection and economic growth in the future.I

The World Resources Institute is a policy and research organization focusing on issues related to socio-economic growth and sound resource management. WRI's Center for International Development and Environment works in developing countries with host governments and local private institutions to research, plan, and facilitate sustainable development.

I would like to discuss some preliminary findings of two World Resources Institute activities in Africa. One set of activities pertains to our involvement in national-level environmental planning exercises. The other relates to a Center-initiated program called From the Ground Up. I will conclude this discussion with several recommendations that emerge from the findings of our fieldwork and research.

Successful National Policy Depends on Popular Participation

Numerous countries in Africa have completed, or are currently undertaking, national environmental planning exercises with regard to natural resources. These include USAID's Country Environmental Profiles, IUCN's National Conservation Strategies, FAO's Tropical Forestry Action Plans, World Bank National Environmental Action Plans, and soon to be initiated National Biodiversity Strategies. Undoubtedly this list will expand in the next few years.

Each of these strategies recognizes that effective national environmental management requires successful local-level natural resource management. In turn, local resource management for the most part depends on daily household agricultural practices, and the means by which rural people conserve, consume, manage, and rehabilitate local resources.

In each African nation, millions of resource users cut trees for fuelwood and agriculture, start bush fires to clear fields and slopes for farming, grazing, and hunting purposes, collect herbs and other plant products for medicinal and religious usage. In so doing, they degrade land through the overuse of fragile soils, and deplete dwindling stocks of fish and wildlife -- all to meet the most basic, often minimum, needs for food, clothing, and shelter.

In recognition of the importance of resource users, the initial documents developed for most national-level planning exercises clearly state the need for popular participation. The TFAP, or Tropical Forestry Action Plan, for example, notes that its "success will...depend on the support and involvement of small farmers and village communities, local and national NGOs..."

It is quite clear that popular participation means different things to different institutions. "To ensure ...local ... involvement in the implementation of identified projects," the TFAP calls for "informing" the concerned people of the "benefits" they will receive well in advance of the project's implementation. It does not propose local participation in policy formulation or project planning, nor does it provide any detailed guidelines on how to ensure local involvement in strategy-making, problem identification, or implementation.

Many means have been utilized in an attempt to involve the resource users in activities concerned with natural resource management. Policies and legislation have been developed to make illegal or costly certain activities that are deemed to be environmentally damaging. Disincentives, e.g., fines and prison terms have been established and enforced. Incentives, e.g., tax benefits, secure land tenure, and direct economic benefits have been proposed and offered.

Certain areas of critical ecological importance, particularly, fragile regions, have been put off limits to human and livestock use. There is a whole series of protected areas such as forest reserves, game sanctuaries, and national parks. To this it should be noted that numerous environmental management methodologies have been developed. They include, for example, Participatory Rural Appraisal, Rapid Rural Appraisal, and Diagnosis and Design. These methodologies enable community development extension officers and other field staff to work with local people at the community level to develop site-specific action plans for improved socio-economic well-being.

For any of these initiatives to have nation-wide effects, public policies must be developed and supported. Thus, the critical issue becomes one of affecting and influencing African governments. And because we know that political will often comes from accountability, a more important issue is how can local resource users affect and influence their own governments. While we know a bit about how-to involve local people in the design and implementation of projects, we know very little about how to systematically involve the private sector in policy formulation, especially how to

encourage African governments to facilitate popular participation in public policy debate and formulation.

WRI's Center has worked in several select countries in the developing world to help prepare national environmental policies and plans. In Africa, the Center has most recently been involved in the TFAPs in Zaïre and Cameroon, the NEAPs, or National Environmental Action Plans, in Rwanda, Uganda, Guinea, and Ghana, and the NCS, or National Conservation Strategy, in Tanzania.

Our involvement has varied in the different countries, but a common concern has been to assess and facilitate efforts to involve local people and ensure the participation of the private sector in both the policy formulation phase and the program planning and implementation aspects. The specific methodologies employed and the results achieved by WRI's fieldwork are different in each country and in all cases limited in scope. Nevertheless, several lessons have been learned which can help steer other national planning exercises. Let me limit myself to just three.

Findings from WRI's Environmental Policy Fieldwork

- Popular participation is, indeed, an important and necessary component of national-level environmental policy formulation and program development and implementation. Popular participation ensures that the policy and action plan address local priority needs, problems, opportunities, and constraints. It also helps develop ownership in the plan which increases the likelihood of local participation in the implementation and enforcement of the policy and activities. Plans developed with no or limited popular participation do not appear to be as well implemented;
- There is little consensus on what popular participation means, but significant agreement that the process of ensuring popular participation is difficult and complex. Clearly, participation is an ambiguous and misused term. To some institutions popular participation means visiting a few communities to discuss with village leaders issues of local concern and, perhaps, to view activities in the field. To others it may mean soliciting the

views of local government authorities or inviting NGOs to national workshops;

- While every action plan and strategy pays lip service to the notion of popular participation, very few country exercises have much of substance to show. A few efforts have included some popular participation in development project planning and implementation. However, popular participation is rarely evident in the development of policy, especially government-sponsored and supported popular participation in policy formulation.

National Policy Choices for Popular Participation

The World Resources Institute's Center From the Ground Up program is founded on the premise that important insights can be gained from analyzing specific examples of successful grassroots resource management and that the driving socio-economic forces and key relationships that frame effective, local-level practices can be identified, documented, adapted, and disseminated successfully from one African context to another.

WRI's Center is working with local institutions in fourteen African nations to identify communities that are already pursuing a course of ecologically sound self-development. We are analyzing the core elements of their successful efforts. More than twenty-five case study exercises have been completed on agroforestry and terracing activities to protect the soil, on water harvesting and irrigation, and on wildlife protection and forest management. The focus is on the social, cultural, institutional, and organizational aspects of success, rather than the technical issues. We assume that a properly constructed bench terrace will reduce soil erosion and will help stabilize or even improve agricultural productivity.

In several focal nations, the country case study exercises are complemented by a series of policy studies which examine the effectiveness and effect of environmental policy on local-level natural resource management. The studies often include an inventory and critical review of existing national and subnational natural resource policies and legislation. Hypotheses are then developed on what villagers should be doing and fieldwork is designed to determine what the rural people are actually doing. Recommendations are then developed on how policy can become more effective in improving natural resource management at the local level. Various outreach efforts share

the research results and policy implications with other villages, national decision-makers, and the international development assistance community, including a new WRI publication series on the From the Ground Up case studies.

Findings of the From the Ground Up Program

What have we learned as a result of the From the Ground Up Program? From the case study exercises, we have learned:

- A community-based focus for local development can lead to more effective resource management than distant, centralized management. More important, the community or village-cluster can be an appropriate development unit to design and implement local development activities. Local labor and resources, combined with modest external assistance, can foster sustainable development;
- Few communities manage all of their resources well, although many manage some of their resources well. In some cases, external influences on the control and use of local resources restrict local-level resource management. In other instances, the community does not have the knowledge, expertise, or resources to address certain local problems or take advantage of existing opportunities;
- Few communities protect or conserve resources, most use them to meet their basic needs or for socio-economic development. Indeed, some of the most effective activities are those which provide immediate and significant economic benefits. The one case study exception is the protection of a sacred grove. The forest is protected for religious reasons and there is limited use of the forest products;
- A number of common core elements are beginning to emerge, such as the importance of local leadership, viable village institutions, whether indigenous or externally induced or supported, security in land and resources, whether perceived or real, links with neighboring communities, and linkages to

external political, technical, and economic entities. Each of these has important implications for national policymakers.

With regard to the From the Ground Up policy studies we have learned:

- Few countries have an umbrella environmental policy or appropriate land use or land tenure policy. Most have resource specific policy -- some of which is quite good, but would benefit from being updated.

There are significant problems, contradictions, and gaps in the existing policies and some policies are simply inappropriate for natural resource management. For example, policies offering tax breaks for land clearing, policies developing reliance on high-yielding agricultural exports, and policies providing timber concessions that are not based on a sustainable harvesting systems.

In addition, many resource-specific policies have single objectives. For instance, forestry policy is typically designed for timber production, and not minor forest products which are particularly important for the local resource users. Similarly, wildlife policy is often designed for the preservation of fauna, encouragement of tourism, and the sake of foreign exchange, and not for bushmeat for local consumption.

It is, however, incorrect to suggest that some policy is inappropriate because African policymakers are not in touch with the realities of rural people. Many were born and raised in the rural areas and routinely return to their home community. They are thus well aware of the specific circumstances of the local communities.

- Most rural people are aware of certain policies and legislation, but many mistakenly feel secure about their activities that may be illegal because they are not fully aware of the details of the policy provisions or their implications. People may also

recognize the inability of their government to implement and enforce its own policies and legislation.

In addition, some policy can remain legally dormant until voluntarily activated by enlightened local authorities or extension officers. Subnational policies and by-laws are often more effective than national policy, in part because they are closer to the grassroots and address conditions specific to the region, they usually provide some specific guidelines on what farmers should and should not be doing, and they are often better enforced than national policies.

Implications and Policy Recommendations

Each of these findings has implications for national policy and program makers, and the development assistance community. Let me limit this discussion to three sets of recommendations, and which I would characterize as preliminary.

National Environmental Policy

There is a need for African governments to develop appropriate national environmental policy, land use policy, and land tenure policy. These umbrella policies should be flexible enough to enable the various ministries and levels of government to develop appropriate resource and site specific policies. Means other than legislation should be considered to implement policy, and policies offering incentives, rather than disincentives should be encouraged.

Popular Participation

Popular participation in policy formulation, program design, and project implementation is critical. While the methods to ensure participation may vary, an essential component is an appropriate negotiation process with legitimate representatives of communities at the various local levels of the government.

One opportunity to involve local people in decision-making may be through government decentralization programs. Administrative and political decentralization gives local authorities the responsibility to translate national policy into local guidelines - either as policy or as by-laws. These guidelines are more likely to address

circumstances and priorities specific to the region. Political authority at a level lower than the state may have the capacity to both reach and involve the grassroots.

Strengthen Policy Machinery

The policy formulation and implementation institutions in many African nations need to be strengthened and their work made more effective. Activities are needed in at least three areas.

- a basic retooling of the various institutions with the information, manpower, supplies, and equipment need for them to do their jobs;
- the training of a cadre of community development extension officer with the skills needed to work effectively with the local people and to develop appropriate grassroots development activities;
- a better understanding of the policy formulation, implementation, and enforcement machinery to make them more effective, and to improve their capacity to reach the grassroots - both to inform and to be informed by the rural people. The effort should include an investigation of how policymakers become informed and are influenced.

Conclusion

Let me conclude by suggesting that it is not too late for the governments and people of Africa to reassess their needs, problems, and opportunities, and to chart a course toward sustainable development. Africa has considerable assets, including available land and water resources, agricultural potential, a wealth of mineral resources, vast gas and hydroelectric potential, a large informal sector, tremendous biodiversity, and, most important, a large and young population which has the capacity and interest for self-development, and whose resilience has already been proven. Thank you.

Discussion

Phillip LeBel, CERAf. Thank you. Let us now provide a brief opportunity for each speaker to respond to the presentations made by other panelists. We will then turn over the discussion to questions from our audience.

Kevin Cleaver, the World Bank. I would like to take on some of the critique of the NGO community, particularly Korinna Horta's statement, to stimulate a bit of the debate here. I find that in much of the NGO critique of the donor community a very simplistic notion that there is a conspiracy of bad guys, notably the multinational, and to a certain extent, the donor institutions, which are out to despoil the environment, particularly through logging and agricultural practices.

It isn't so much to defend the institutions. Obviously, I want to do that since I represent one, but I think that the target is misplaced, and that it diverts attention from the real problem, which is a problem of poverty, population increase, unsustainable practices, as well as logging practices. As long as the poverty problem remains, you are going to have environmental degradation, whether there are donors or not. The solution is one of poverty alleviation. If we divert our attention from this issue, I think we are in trouble.

Second, on logging, I was involved in the Côte d'Ivoire project that Korinna Horta mentioned. In fact, I presented it myself to the board of the World Bank. I think therein lies a very interesting lesson. Côte d'Ivoire has about seven hundred fifty logging companies. Most of them come from industrial countries. Not many are American, but most of them, if not the vast majority, are from industrial countries.

It isn't the World Bank that is logging, or even the government of Côte d'Ivoire. It is our companies that are doing the logging. Should that not be one of the targets of the NGO community? What we tried to do in the Côte d'Ivoire project was to improve regulations of those companies, firstly by evaluating them. The last result I had seen showed only five of the seven hundred and fifty passed an evaluation. The others were to be closed down on those forest areas covered by the project.

Secondly, we wanted to increase the taxation of these companies, so that the government and the country in which they were logging would obtain more of the benefits from whatever logging activities remained.

Thirdly, we wanted to prevent logging in some of the ecologically fragile areas. There is a legitimate debate about how much of the forest area is ecologically fragile. Many NGO's suggest that all of it is fragile. Nevertheless, it was certainly true that logging was occurring in ecologically fragile areas, and a lot of that will be closed down.

Next, we have a separate land tenure project with the stated objective being identical to what you heard from the two NGO representatives here today, i.e., to transfer ownership slowly over time to local communities. I believe that they are absolutely right that it is ownership of assets that give people power. It is not the participation of local people in meetings and conferences. But the transfer of assets takes time, particularly when governments resist.

In addition, there were incentives provided for people to move out of the forests, to the extent that they are in them. There are land titles, extension assistance, farm inputs, to be provided to farmers who have encroached into the forests an incentive to move out. Therein lies part of the solution. In conclusion, I think that much of the NGO attack on the multinational institutions is pointless because we have, today, the same objectives. Projects like the Côte d'Ivoire one were unfairly and inaccurately criticized by the NGO community.

Let's look at little further at what the NGO's themselves are doing. One of the things that we rarely do in these debates is to scrutinize the NGO's. We have begun to do this. There was also a very interesting audit undertaken by a professor at Oxford University, of the World Wildlife Fund projects in the world.

The World Wildlife Fund is one of the interesting NGO's in that it actually does something in the field. Most of the environmental NGO's simply criticize those of us who try to do something. He found, and I believe the statistic is correct, that some sixty to eighty percent of World Wildlife projects were failures. He found that they had spent vast sums of money on projects, like their Panda project in China, to no significant impact at all. Unfortunately, the Pandas are virtually extinct despite all of that money having been spent.

The point here is that it is very difficult to do these kinds of environmental protection investments. The NGO's have had no more success than the donors. Korinna was right about our fifty percent failure rate. We have looked at other donor projects and U.S. AID has about the same failure rate in Africa as we do. Regarding community participation - if you look at your average NGO project, what do you see? You see

representatives of the NGO in a very small area who are managing the community participation. Usually, this work is not community led. It is led by the NGO's themselves.

I think that in order to provide community, or people-driven management, you have to have the overall policy environment right. For people to manage their own natural resources effectively requires a land tenure situation that provides them ownership, along with structural adjustment and reform programs that make agriculture sustainable and profitable.

Most importantly, political change will be required. Political change means political pluralism. It is not going to start with the little NGO project, or closing down a World Bank project here and there. Fundamentally, for people to participate, mechanisms are needed in these countries that allow political pluralism. And that is for the Africans to take care of. It is not through World Bank or IMF conditionality. Africans are going to have to take the lead in opening up their political systems. A danger is that by attacking the multinational institutions, a redirection of aid may result, and that is not going to cause the environmental problem to go away, nor is it going to facilitate the solutions for environmental protection in Africa.

Korinna Horta, Environmental Defense Fund. First of all, I would like to stress that multilateral development institutions are not monolithic blocs. In them there is a variety of opinion. For instance, in the World Bank, there is now a debate on forest policy. Organizations like the Environmental Defense Fund see their role as the role of watchdog which helps strengthen the position of those individuals within these institutions that are committed to the environment and to social progress. That is how we see our role.

I would like to come back to the Côte d'Ivoire project, which is so controversial. It is not the word of the World Bank against the word of the environmental organizations. The critique that I presented here was a critique made by the U.S. executive director of the World Bank, which as I said, is the largest shareholder in the World Bank. Now let us assume that what Kevin said was perfectly right, i.e., that this project was going to be for the good. Why, then, did that information not become evident in the project reports that were presented to the Board of Directors? Why, then, did the staff of the U.S. executive director have trouble understanding the benefits of the project? Somehow, there is a problem in communication.

I would like to continue, with a question to Mr. Shongwe. He mentioned the question of indigenous peoples. He talked about two options, one that seemed to be pushed by outside forces, which is the preservation of the Pygmies, and the other, by governments, who express interest in "modernizing" the Pygmies. The point that environmental organizations make is that it is not for governments to decide if indigenous people are to be "modernized". It is much less for organizations thousands of miles away to decide what the future of these populations is going to be. Our point is that these people should have the possibility to determine their own future, and to adapt from modern life what they wish to adopt. The precondition for this to happen is that their customary land rights must be recognized, and we strongly believe that this should be one of the main cornerstones of environmental policy at the multilateral institutions.

M.M.L. Shongwe, African Development Bank. I would like to bring about some of the arguments that have come up here. I want to take your memories back and I want you to listen to the voice of the African technocrat, trying to develop immediately after independence. They inherited a host of conditions. These constituted the agenda of the development process of the African governments that we heard from those who were there before.

Let us talk of north and south, north meaning the developed countries, and south being the developing countries. Some time ago, the issue of trade in the forestry sector, for instance, was considered of major importance. Governments of Africa were faced with a situation where raw materials were being exported at very low cost, even as deforestation expanded. The imbalance between production and exports has not yet been resolved, as is evident with Africa's continuing experience with deforestation.

This brings me to the question of technology. While we know that technology for the north has actually degraded the environment of the north, at the same time it is technology that also provides an alternative. For the South, technology transfer can alleviate some of the resource imbalances that exist within developing countries. The issues of effective technology transfer has not been properly articulated. The need to share and transfer technology is still as great today as it was at the onset of political independence of countries in Africa.

A major factor which has affected African development strategies is the shift from technology transfer to sustainable development. This new agenda, as defined largely in the North, is being shaped even before technology transfer has been accomplished.

I want you to understand that we understand these issues, but it is a question of the manner in which these things come. The faith of the southerners is fast diminishing because a new agenda is being set before you have not completed the previous one. You thus find yourself in a difficult position to decide which agenda to support.

I am talking about a fellow who is in absolute poverty. He will look and laugh at you, not because he is not concerned about the environment, but because you are asking him to pay out of his meager resources that keep him alive today for something that he can foresee that is for tomorrow and the next day. But he is dying right there at that time. So these are the problems that we have when I referred to my discussion that there is that complementarity between development and the environment, the agenda of which has not been properly set on the right footing, which has not been properly defined so as to know what role one party is to play and what role the other is to play.

May I come back to Ms. Horta's question. It is difficult to some governments to understand the genuine intentions of some NGO's who will advise that Pygmies should be left alone, outside the development mainstream. Many government leaders consider such advice to be selfish, and geared largely to tourists who would perpetuate the notion that Africa is a land inhabited solely by primitive people living in abject poverty. While African governments have no intention of eradicating their cultural heritage, they do not intend to set aside whole populations solely for the sake of perpetuating false images about objective economic and social conditions as they exist today on the continent.

As to the road project in Cameroon, as far as the African Development Bank is concerned, it is a developmentally viable project which we have supported. The track already exists. What the government is actually doing is trying to improve the road network in that part of the country. In this particular case, concern for environmental considerations has led to a decision not to use bitumen or asphalt, while at the same time improving transport in the region. That is why I spelled out here that we have to have mitigative measures.

There are those projects, such as category I, that have significant environmental impact. Those projects require further analysis, which may result in an environmental impact assessment. And then we come out with something. We are coming slowly at the Bank because we are mandated by our own governments to be able to help them develop economically and socially.

There is some help coming from various quarters, and we have to monitor this because not all of it is helpful. For instance, to corroborate Kevin Cleaver's point, not all NGO's are useful as environmental organizations. Let us put it right. Some are interest groups for other purposes, and the agenda set for the environment of these countries may differ. So we have to be careful. We have a mandate as multilateral institutions to perform, to intervene where we can, and to assist, we will make the effort to do so.

Lastly, I would like to say, in the case of the African Development Bank, there is a strong collaboration that is going on with all NGO's. With the NGO's, we have set up a policy unit within the Bank to see how we can work together.

With the World Bank, we also have close collaboration. In fact, right now, we are going to participate in a training workshop on environmental assessment in Africa. With WRI we are developing these Bottom Up programs. So we are actually trying to make sure that we balance the approach in the continent. However, it should be noted that while some of the external assistance is good, some of it is bad.

Peter Veit, World Resources Institute. I think that we must not lose sight that in this business we all have the same ultimate goal, that we are all interested in managing the resource base in Africa for the purpose of social and economic development. I think that there are a number of obstacles, and problems, that are confronting us, in addition to the ones already discussed.

One of them is that we just do not know enough about what works and why it works. I think that all of us here could spend a lot of time criticizing projects, and talking about why some things have failed and why some things have not worked as planned. Out of those criticisms, we do not really know what we need to do. I think that all of us need to take a step back and look at what has worked, to try to understand a little bit as to why some of those things have worked, because from there we might be able to get some real concrete ideas on what we might be able to do in other areas, and in other countries where they might work equally as well.

Second, I think that there is a real problem in upscaling local successes. Despite the fact that NGO's, and I did not know that eighty percent of World Wildlife Fund projects had failed, but despite the fact that all of us have tremendous failures in Africa, there are good things happening out there. Oftentimes the multilateral and bilateral organizations have tried to take those local successes and tried to enlarge them so that they would have

a nationwide effect. For the most part, they have not worked as well as a number of people would have liked.

What we found in our work is that communities can only move so far on their own, that there really is a role for external assistance, whether it is financial or technical. Oftentimes this is no more than two to ten thousand dollars that could make a wealth of difference to that community. A number of donors have recognized that difference and they have tried to develop programs to filter small amounts of money down to the communities. U.S. AID has a project called the PVO NRMS, or Natural Resource Management Support, project.

The UN Environmental Programme has something called the Africa 2000 Network Project, which is really designed to filter small amounts of money down to communities or to indigenous grass-roots NGO's, not necessarily national-level NGO's, to try to improve natural resource management. Can you imagine the nightmare of trying to monitor five thousand five thousand dollar grants in Africa? I think that one of the other things we need to do is to try to encourage these decentralized initiatives, to work with the donors to try and make those kinds of efforts more effective and common in Africa, Asia, and in Latin America.

Ms. Duen Needleman, African-American Institute. To Mr. Kevin Cleaver. You mentioned that Africa is not over-populated, that it is a distribution problem. My question is that in the case of forestry projects, so much seems to be simply logging the timber. Now if project recipients were able to transform the timber into finished products, would they not be able to receive many more times the value from forestry? Would it not be possible to allow African countries to have forestry projects funded on a more full transformation of timber products? In this case, cutting would be much less, and it would contribute to a more sustainable pattern of growth than at present.

Kevin Cleaver, the World Bank. The problem is not so much whether Africa is over-populated. My thesis is that the rate of increase is too rapid for traditional societies to adapt. It is not so much the numbers of people right now, although that is going to be a problem, but rather the rate of increase can not be sustained.

On reforestation projects, some have failed, as Korinna has said, and some have not failed. Our tendency is to look for reforestation within farms themselves, that is, farm forestry, agro-forestry. Farmers can grow trees and sell them.

In terms of manufacturing, Robert Repetto, of the World Resources Institute, did a very interesting study that suggested that subsidies for processing of wood in fact encourage a more rapid deforestation. There is a lot of processing of wood in these countries. Côte d'Ivoire has a thriving wood processing industry. I would tend to disagree with you. I think it would probably encourage an accelerated process of logging if you subsidize processing.

Joseph Pessima, University of Pittsburgh. I want to mention that sometimes the World Bank does not take into consideration the interactions among various projects within the same geographic or sectoral framework. How is this reconciliation to take place?

Second, I want to know your policy with regard to debt service. I have seen a lot of loans made to African countries. For various reasons, the projects do not start, even though the debt service begins. The project stays there over five years, then the project begins, but in the meantime, no productive recovery from the investment has taken place. When you have experts sent to Africa to do a study, they know the economic conditions. You know very well that there are conditions that can not hold, but then you block the project. It stays there, and it is destroyed, but in the meantime, debt has been created for which repayment is being expected by the donor institution. This seems most unjust.

The third question is that agricultural projects funded by most donor institutions are not viable for the long-term. Have you thought of problems of sustainability if you have such a short-term perspective? I want to question whether the Bank has any vision for development of education and health beyond the immediate time frame?

Kevin Cleaver, the World Bank. Very quickly, we do stop projects that don't work. My criticism would be different, namely, that we did not stop them quickly enough, but now it is true that we are blocking projects that are not working. If a project works, I can tell you right now that we are so desperate for projects that work that we don't close them down.

On debt service, most of the problem of debt is not caused by multinational lending institutions. Much of the debt was created in the 1970's by huge, very ineffective commercial bank lending to extraordinarily lousy projects. There are white elephants all over Africa. The debt service problem which these countries now confront is how to manage repayment of loans for investments that never took place or which were poorly designed and implemented.

My own personal recommendation to most African governments would be not to repay it. In fact, that is what most of them are doing. I do not believe that most will ever repay their commercial bank debt. I think that the debt service issue in Africa is highly overrated. Furthermore, contrary to what Korinna has said, countries are not exporting wood in order to repay debt. Regarding the World Bank's role, most of its lending to Africa is on IDA terms, in which there is an eighty to ninety percent grant element.

Long term sustainability. Your question is an excellent one. There are agricultural investments that are sustainable, and some are cash crops. Tea, in Kenya, is one. A smallholder in Kenya in the tea zone can make about five times the income on his small parcel of land than he could if he planted an alternative crop such as maize. Surely, we don't want to encourage that farmer to rip out his tea plants, which, by the way, are environmentally quite sustainable over long periods of time, simply in order to increase his maize production. Surely, he should continue to produce his tea, even expand production of tea. He could then buy the maize, up to five times the quantity of maize that he could have produced on the lands now devoted to his expanded tea production.

Sustainability is a very complicated thing. My own view is that our collective error in Africa was an error of philosophy of development. We thought that, as in western Europe, in America, and Asia, we could bring in technology based on a model that worked in our own countries.

The green revolution technology is a science-based technology. We tried to stimulate a similar green revolution in Africa in the 1960's and 1970's. It did not work. In this, I agree with my colleague from WRI. What we need to find is a model that works in Africa, one that isn't just a blind importation from elsewhere. What works in Asia is by no means what is going to work in Africa.

The challenge is to find this development model. You can call it sustainable agriculture if you want. There are lots of terms for it. There are some success stories that we can build on, but not enough of them.

Joseph Pessima, University of Pittsburgh. If you have made these studies, what have you done to get things back on track? If some fifty percent of projects have failed, what then is being done to improve the performance of project lending, particularly with regard to getting people involved? Moreover, if projects have failed on your part, then there should be compensation for these failures.

Chris Ngassam, *Journal of African Finance and Economic Development*, University of Delaware. I would like Mr. Cleaver to address the question of successful projects, in particular, the question of successful projects and sustainable development in Africa. How does one relate the notion of popular participation to successful projects and to sustainable development?

Kevin Cleaver, the World Bank. A lot of our ex-post evaluation of projects has suggested that a major reason for the failure of donor, and NGO projects as well, is the lack of popular participation. Frankly, looking at the ways in which we are trying to stimulate that participation, particularly the NGO model, which is to send in a technical assistant and deal with the local community, does not seem to work in the long term. When that assistant goes, that project dies. It is likely to be most important to have assets allocated to local people, for example, the use of forests. Typically, forest resources are allocated by governments to logging companies as concessions. It would be preferable to have local communities manage forests.

To permit local participation, you need a mechanism that allows local people to participate in their government, in order to assure their own participation. So, yes, the absence of participation is directly connected to the failures in the past. You can't assure local participation in a dictatorship. You can do it perhaps on a very limited basis with a lot of foreigners forcing it on weak local governments for a very short period of time, but fundamentally, in order to ensure local participation, governments have to accept the notion. This is what I mean by political pluralism. It is not multi-partyism, necessarily. It is a structure that allows people to articulate their needs right up to the top.

M.M.L. Shongwe, African Development Bank. To a great extent, I agree with Mr. Cleaver. Let me just share with you some of the confusion that exists. In the 1970's, when UNEP, the United Nations Environmental Programme, was established, there was immediately a campaign to have governments establish ministries of environment, boards, commissions, and all of that. They were also asked to establish legislative instruments by which governments could protect the environment.

These governments were coming straight from independence. They were given documents which were supposed to lead to their governance, i.e., constitutions, and which bore only limited relevance to their traditional way of life. There has been a need for African governments themselves to introspect and see if these documents relate to the model that they know, that they can use for purposes of development. Unfortunately, they have often realized this rather late. Reorganization is thus overdue.

Governments are in the midst of solving the political situation at the same time that they are trying to address the economic dimension. In the process of sorting this out, I think that forms part of the failures that have come about, which my colleagues have referred to here as a lack of direction, a lack of leadership on our part to define those models that we think will work. As a result, too little attention has been given to the often contradictory development policies and strategies based on the socialist eastern and capitalist western models of development.

Let me give you an example. You go to one particular country. You would find, for example, in a hospital, that an X-ray comes from Germany. The medicine comes from Italy. The laboratory equipment, e.g., the centrifuge, comes from the United States. Then, chaos erupts when you need spare parts, to be able to keep the thing going. That is the type of situation which governments are placed in.

I agree with you that we have to remodel. Somehow we have to find a model that works for ourselves. When you look at it from a global point of view, from the donor's point of view, there are a lot of them going into the project arena. We at ADB, as the youngest multilateral development institution, find that these are the kinds of issues that we have to deal with.

Kofi Afriyie, Rutgers University. Why is there not an emphasis being placed on the development of indigenous technology? Why not facilitate, using African materials, the development of indigenous technology. As I see it, there has been no emphasis by either development institutions or by African governments in this direction. We certainly have not only the raw materials, but also the indigenous manpower, and the ability to develop such a technology.

M.M.L. Shongwe, African Development Bank. Let me take, for instance, the ADB, that I represent. There is this continuous search for lending instruments that seek appropriate approaches to our countries. It is not an easy task when you are dealing with the whole continent. In fact, when you put out a policy such as the ADB environment policy paper, you will find that it is very difficult to promulgate a policy that is general throughout Africa, to all of the countries on the continent which are so diverse, and yet specific enough to be able to address the issues.

When you suggest that Africans should "do their own show", I would agree with you one hundred percent. Unfortunately, a lot of the issues we are dealing with, such as those

which we are discussing here, transcend beyond the boundaries of each country, and beyond each continent. Some of these issues are so global that all of us have to hold hands together if we are to ensure success. If we don't, when I talked earlier about technology transfer, we have to learn from what has been done, and try and apply it.

Although we have to develop appropriate strategies for ourselves, we have to do so with the assistance of people from the outside. However, outsiders can be useful to us only when we know what we want. If we do not know, like any other consultant, the consultant will not tell you what you need to do, but you tell him what he has to do for you. I agree that we have to do it ourselves, but we need this effort to start. It is an agenda for Africa. The Organisation of African Unity, having finished with the political liberation of the continent, is now focusing on economic development. And so is the African Development Bank.

Kevin Cleaver, the World Bank. Very briefly, I see the problem of developing indigenous technology by Africans as mostly an African problem. You need an incentive framework for people to invest in technology. In many African countries, you have not had either the price or market incentives needed to stimulate investment. What you have had are governments that impose so many restrictions to development of any kind that the potential indigenous entrepreneurs are cut off. We need an incentive framework that is sufficient to permit people to invest.

Simultaneously, you have in Africa declining educational systems. That certainly has to be reversed. I would say that we in the donor community have to shift from such inadapted models as the green revolution to a technology more appropriate to Africa's economic realities. This is what I think one of the members of the audience had in mind by the reference to sustainable technology. It is going to be very difficult because it tends to be site specific. The green revolution technology in Asia was very productive, but it was not site specific. It was appropriate to homogeneous areas. What we need in Africa are menus of adapted technology to site specific areas. That is enormously difficult to do.

Finally, to get back to the first issue, we need much less of the paternalistic attitude of giving Africans things. I think that fundamentally, Africans are going to have to do things themselves. They are going to need political institutions that permit them to articulate their needs. They are going to need governments that, instead of taxing them and controlling them, will permit them to be entrepreneurs, to develop their potential in a free and open environment.

Ms. Yin Yin Nwe, UNICEF, New York. I want to know whether any of the institutions have developed any other modalities of environmental assessment. We at UNICEF are very concerned about this whole issue. We are trying to develop human indicators of poverty, measureable indicators that can better track human mortality and the quality of life. Along those lines, I am wondering if in the development of project assessment methodologies, whether multilateral development institutions such as the ADB and the World Bank have developed such indicators, or are considering the use of such indicators in making resource allocation decisions.

M.M.L. Shongwe, African Development Bank. We are working very closely with UNICEF. We have a cooperation agreement with UNICEF. Your executive director, Mr. James Grant, has collaborated with the Bank on several workshops on "structural adjustment with a human face", to try and build around our lending activities some of those components with which you are very much concerned.

In terms of the utilisation of indigenous people at the grass roots level, that is what UNICEF has been involved in. We have developed, as I indicated, a policy dealing with NGO's, local NGO's. Our idea there is that we believe that they can be very useful when it comes to developing this environmental impact assessment and the associated studies because they have lived in the areas, and they know the problems of the areas at the grassroots level. After we developed this policy, we invited these local NGO's and put the policy before them, and indicated to them that we would like to begin to operate with them. We are in the process at the present moment of actually identifying the modalities on how we are going to operate with the NGO's.

The first action on the list is to register all of the existing NGO's in Africa. They would, of course, like to have their own representatives within the Bank, and this is being looked into to see how best we can have this relationship developed.

Kevin Cleaver, the World Bank. If I were one of the environmental representatives from the World Bank, I would explain how great we are in developing environmental assessments. We do have initiatives such as that devised by the African Development Bank, and all of our projects must undergo an environmental assessment process.

My worry is that this may simply hide the greater problem, much as it does in the United States. The population of the United States contributes to wetlands destruction, to ozone depletion, the depositing of oil wastes in the seas despite environmental

assessments, even in private industry, that are far superior and far more careful than anything that Africa is going to implement in the next twenty years.

I think that rather than diverting all of this attention to individual projects, what we need, as Mr. Veit said earlier, is environmental action plans that look at the big picture, that try to understand these underlying economic, social, and political trends, and to deal with them through environmental action plans. These plans will involve more appropriate agricultural technologies, which may in turn involve land tenure reforms which return land to communities. You are not going to get that kind of thing out of environmental assessments. You may change a mining project here and there, introduce some mitigating measures, but I think it is a grossly overemphasized activity, i.e., environmental assessment.

Ms. Yin Yin Nwe, UNICEF, New York. I was thinking more in terms of human indicators.

Kevin Cleaver, the World Bank. That's a different question. That's human monitoring. That needs to be done as well.

Rolf Sternberg, Department of Environmental, Urban, and Geographic Studies, Montclair State. I would like to ask Mr. Shongwe about education for the study of the environment. For example, how do you prepare professionals so that they can obtain the requisite expertise to address the complexities of environmental management?

M.M.L. Shongwe, African Development Bank. I did mention that at the present moment, to prepare the environmental impact assessments, though it is the prerogative of the government, we will help the government to recruit consultants, but it is a situation that we do not envisage will go on forever.

We are at the same time are trying to develop the local capacity in these countries. One of the items which we discussed with the NGO's is actually training them to have the capacity to be able to undertake environmental impact assessments. We are, together with the World Bank, actually on the twentieth of this month, holding an environmental impact assessment training workshop in Botswana in an effort to address this capacity-building effort.

The idea is to get all of the SADCC countries to come in, not necessarily governments, but also non-governmental organizations, to begin to introduce the

parameters for the preparation of environmental impact assessments, so that they appreciate and they build country-specific capacity for them to be able to do this on their own. It is not anything that the Bank imposes. We recognize from within ourselves that there is a need to increase the ability and the capacity to be able to read an environmental impact assessment, to interpret it in a manner such that the project gains in terms of sustainability. That is the strategy of the Bank at the moment.

Emmanuel Ajuzie, University of Connecticut. When we consider the need for land tenure reform, I am wondering if there is any effort to develop grassroots organizations to engage in these activities. How can agricultural organizations undertake this task? Second, small-scale agriculture as is now practiced in most parts of Africa, presents a formidable organizational challenge of how to organize improved natural resource management at the local and regional level. Many of these traditional farming units are wedded to highly traditional technologies that do little to preserve the environment. What are the options for changing this situation?

Kevin Cleaver, the World Bank. On farmer organization, yes, we and NGO's are desperately trying to find a way to encourage farmer organizations. To be honest with you, the problem is, as soon as an outside force, whether it is the World Wildlife Fund, or the Environmental Defense Fund, or the World Bank, organizes farmers' organizations, they are no longer farmer organizations. They become donor-fed and operated, even if they are justified and can do great things. The trick is for farmers to develop their own organizations. I come back to the incentive framework for this.

Your second question, on the fragmentation of farms, is absolutely true. In parts of your own country, in Nigeria, the Kenya highlands, much of Rwanda, where there are postage-stamp size farms with traditional cultivation, we find that this is an absolute guarantee formula for soil degradation. We have not taken the step of trying to group these farms into larger units. That step is a dangerous one that some countries have tried to do through socialization, if you like. Our recommendation at this point is firstly, the rapid intensification of those postage-stamp farms so that people, despite the small farm size, can get something out of them to live on. The second is to move to a program of reducing population growth, rather than social engineering of the farm size. Nevertheless, as many here have said, the techniques and formulas for agricultural intensification are not always convincing.

Daniel Dorow, Exxon Corporation. There is an issue that is likely to become more pressing on African countries, namely, the issue of global warming. After listening to

members of the panel, I am assuming that their concerns are much more localized, much more basic human needs. My guess is that the issue of the greenhouse effect is likely to be neglected. Is this a correct assumption and do you see this being addressed in the next decade?

M.M.L. Shongwe, African Development Bank. The problem of Africa is poverty. Poverty alleviation, therefore, is the primary target of development interventions. Environmental protection should be an input in the exercise of poverty alleviation. In some way, I did indicate that global issues are known by most of the leadership in Africa. You can explain it. They will see it, but they tend to dovetail to those issues that are of immediate effect because they cannot begin to address such issues, given their limited resources.

The issue of global warming is something that has been raised in the context of differing priorities between the north and the south. There is an impression that the north is not eager to help the south. Let me give you an example. For instance, farmers in the U.S. are paid not to produce agricultural products because the agenda that has been set within that context calls for such minimization. Why couldn't the North opt to pay for conservation for global environmental issues in the South, since they affect all of us equally? This is the situation, the imbalance. There are certain things that they would like to do, but they are incapacitated by poverty. Therefore, you must first solve the issue of poverty. We can do it on an integrated fashion, but we must, as I said, hold hands together.

It is interesting that today in the African Development Bank, the annual meeting, which starts today, has a symposium whose theme is poverty alleviation. I can assure you it will have a heavy linkage, or environmental dimension, to it. I know that it will finally dovetail to the poverty that exists now and it will make a recognition that we shall do something in the future.

Korinna Horta, Environmental Defense Fund. It is certain that the greenhouse effect is going to be a major issue affecting Africa's future. Kevin Cleaver mentioned that there is already considerable deforestation in Zaïre, and if the Congo basin is going to suffer similar rates of deforestation as have occurred in West Africa, this deforestation is going to contribute substantially to carbon dioxide emissions and to the warming of the earth's surface. It has to be studied more closely as to how the northern countries can compensate the south, in particular the tropical forest countries, for maintaining their forests.

There should be compensation on the one hand, and on the other hand, the northern countries may not use this compensation as an excuse for not reducing substantially their own atmospheric emissions. Also, I would like to add that it is most likely that the people who will suffer the most intensely from global warming are going to be precisely the poorest people in the world, namely Africans, from increased drought, floods, cyclones, or related shifts in climate conditions arising from the greenhouse effect.

Caswell Ewan, Department of Economics, Montclair State. In your studies of the environment, would you say that environmental degradation occurs primarily by economic demands by Africans or by forces from outside? What findings do you get from the studies you undertake and what recommendations do you propose to address the issue?

Korinna Horta, Environmental Defense Fund. There is a very complex set of reasons that contribute to environmental degradation. We may not have a specific recipe of how to solve all of the problems right away.

One of the suggestions we have is that when multilateral institutions become involved in development projects, or in programs, on the continent, that first of all, they make publicly accessible the information on those projects so that the people who are going to be affected by them can know what is going to happen to them. This is something that usually does not happen because, under the cloak of confidentiality, people usually are not even informed about the programs that are supposedly benefitting them.

As a next step, which is to repeat what Kevin Cleaver has mentioned, popular participation is possible only if people have access to information first. Once you have this access, you can promote participation directly, an active participation in which the people have a decisive voice in the projects that are going to affect them. I mean by this not just to have a voice, but in which they themselves can determine what is best for them.

Nnamdi Nwankwo, IAPC, Montclair State. In your speech, Ms. Horta, you mentioned industrial wastes. I am seeing an environmental hazard, not only to health, but also to society, from the dumping of industrial wastes in Africa. One Italian company brought this waste somewhere in Nigeria and it caused a lot of problems. Apart from Nigeria,

other countries are suffering the side effects from the dumping of these wastes in Africa. How can one address this problem.

Korinna Horta, Environmental Defense Fund. I would approach this problem by protesting very strongly to the northern governments, who permit this kind of toxic exports. The power of NGO's is limited, but what we can do is to manifest suitable expressions of protest to the respective governments and to the media to place pressure on participating institutions to refrain from doing so.

Robert Allison, CERAf and National Bureau of Economic Research. I have a request for a clarification and a short question. The clarification is for Mr. Cleaver. Would he be willing to restate the position regarding African debt, particularly with reference to its composition, and to what he recommended the African countries do, and further, is this his personal view or the view of the World Bank. My question is to Mr. Shongwe. It is that would substantial external debt relief in Africa have any environmental impact, and if so, what are the prospects for expanding debt for nature swaps, or something that links the debt problem with the environmental problem. Thank you.

Kevin Cleaver, the World Bank. I thought that I had said that the perspective on debt was my own personal one. Obviously, no international organization is going to call officially for the renouncement of debt. However, even here, the World Bank is working with both the Toronto and the Paris Club, which are two groupings, Toronto being for commercial debt, and Paris for official debt, and our participation in each of those in the African context is to push for debt relief, debt forgiveness, extending the loan terms with these institutions.

In terms of the general problem, I think it is fair to say that the World Bank is for substantial debt relief. Most of our lending in Africa, probably ninety percent of it, is International Development Association, or IDA, funding, which comes at a fraction of one percent, typically repayable over thirty to forty years. If you do a present value calculation on such terms, you will see that the grant element is eighty to ninety percent. Our own debt burden, if you like, on Africa, is minuscule compared to the overall debt burden. The facts of the matter are that most African governments are repaying World Bank debt, some official debt, but little commercial bank debt. My own perspective on this is that they will continue not repaying commercial bank debt.

M.M.L. Shongwe, African Development Bank. The question of debt relief is still a major problem. We, in setting up the environmental division in the ADB, were aware

that in fact we have to resort to some creative financing, that will assist in answering the question of the environment.

You will find that we are very receptive to the idea of debt for nature swaps. As a matter of fact, we have established an NGO outreach project where the NGO's, principally U.S. institutions, are linked with the continental NGO's, for purposes of sensitizing the non-formal and the non-governmental organizations within these countries and to bring about some kind of expertise from within the local NGO's, to be able to interact with the governments insofar as debt for nature swaps are concerned. The Sierra Club in the United States is our contact point on this issue.

Paul Kadjo, Millersville University. I have a question for Mr. Cleaver. When you talk about Africa, you need to put it into the world context. For more than three hundred years, Africa has been colonized, and has been subject to the horror of the international slave trade. Have you ever in your studies of the environmental policies examined this international political system and considered a solution for the short run as well as the long run.

My second question, to any member of the panel, is why is it the case that when we observe in Africa any African leader, or administration, who tries to at least understand the African's condition, or to adapt whatever technology to the African condition, that the leader is forced to leave the country or be killed?

Kevin Cleaver, the World Bank. The colonial legacy has done some pernicious harm whose effects are sometimes difficult to quantify. I would maintain, and this is my personal opinion, that a lot of the very centralized control driven governments, were a legacy of the kinds of governments established by the colonial powers. For example, in crop marketing, all over Africa, prices have been largely controlled by government marketing boards, and this is a system that was instituted by colonial governments. It has required years, through structural adjustment mind you, to get rid of.

The idea that governments had to replace people in making marketing and pricing decisions, that people somehow could not do it themselves, that farmers could not even be trusted to sell their crops to somebody that they wanted to sell them to and at a price which they would negotiate, that it required a central government to set prices - this was a legacy of colonialism that was inherited by independent governments. Mind you, these independent governments were not very quick to shed that legacy, so that perhaps the problem is shared.

M.M.L. Shongwe, African Development Bank. I would say that from the analysis made by the speaker, there lies the answer. When these countries got independence, they were given constitutions by people who do not have constitutions themselves, because they knew it didn't work, because of the various ethnic groups that exist. Those that emerged at that time had to defend the piece of paper that was before them, and to defend that piece of paper, anybody who went against it was then sidetracked.

Robert Schwartz, Economists Against the Arms Race. One thing that runs through every statement that we have heard is the need to replace large governmental debts, to reduce them. As Mr. Shongwe said, to pay debt out of the meager resources of Africans is an onerous burden. One thing that cuts across all of this is that nobody has focused on is that two billion dollars a day has just spent on war in the Middle East, at which time forty thousand infants a day died from lack of basic health and nutrition. No has mentioned this as a resource. In January, I participated as an ECAR NGO representative at a World Bank conference to look at the costs of armaments in terms of prospective future loans.

Peter Veit, World Resources Institute. I agree with you on how amazingly quickly the Gulf crisis consumed such vast amounts of resources, and how little money is needed to really make a change in Africa in certain areas. With regard to natural resource management, there is a significant and growing awareness in the development community, with donors and NGO's, and also with governments and local organizations, that the environment needs attention. As we have heard from the African Development Bank and the World Bank, they are both either establishing environmental programmes or significantly expanding their environmental activities.

What concerns us all is that this not become just another phase in development, and that five years from now, the environment will no longer be the catch word, to have been replaced by something else. We also share the concern that the money now being made available for the environment will indeed make a difference.

One thing we really need to be careful about is that we are just not really prepared right now to spend billions and billions of dollars on the environment. We just do not know how to spend that kind of money right now, it seems to me. I do not want to pick on any organization, but it seems that we have to be very careful, as institutions and governments in Africa, to accept money to do environmental work. We have to make

sure that any such monies are spent appropriately and such initiatives will have the effects that we all want them to have.

Luncheon Session

Phillip LeBel, CERAf. At this point, please let me acknowledge one of member of our guest table, Dean Philip S. Cohen, of Montclair State's School of Humanities and Social Sciences. Both Dean Cohen and Dean Rossetti, whom you met this morning, have been important sources of support to CERAf, and I am pleased to publicly acknowledge that support.

In addition, allow me to now introduce Irvin D. Reid, President of Montclair State, who would like to make a few remarks. Before he does so, I also thank President Reid for his personal support of our efforts, as well as the support which we have received through the Global Education Center, which was established by President Reid in support of international education initiatives here at Montclair State.

Irvin D. Reid, President, Montclair State. Thank you very much Dr. LeBel. It is indeed a pleasure for me to welcome all of you to this conference, which has been organized by the Department of Economics. It is the first one I am attending, and the fifth in the series that Phillip LeBel has organized. I want those of you who are visiting our campus that we are pleased to have an activity of this quality.

We also have a Latin American literature conference, as well as number of other regional conferences. I want to assure you that it shows that this campus is indeed committed to giving our students an international perspective. As a number of people here today are with the Institute for the Advancement of Philosophy for Children, and I want you to know that this is another example of an outstanding program which we have here at Montclair State.

I hope that the students will take advantage of these programs which are being organized by our excellent faculty and that you will come out on every occasion to engage the intellect which we have assembled here, represented by Ambassador Kargbo, as well as by the other panelists who made their presentations this morning. Again, on behalf of Montclair State, a warm welcome to all of you.

Phillip LeBel, CERAf. We have all had a very stimulating discussion this morning in terms of the panelists and their presentations, as well as from the questions from

members of our audience. At this point, I would like to introduce Tom O. Kargbo, who is Ambassador Extraordinary and Plenipotentiary of the Mission of the Republic of Sierra Leone to the United Nations.

Ambassador Kargbo has an impressive list of achievements, some of which I would like to briefly share with you. Not only has he been an international diplomat, but he has also been involved extensively in a number of international activities in conjunction with his work at the United Nations. He has been involved in special sessions on economic development, and on apartheid. In addition, he has been a member of the General Assembly of the United Nations, to which I would add is a long list of conferences and seminars in which he has participated.

He has been involved with the non-aligned movement, the delegation to the OAU in Addis Ababa, and with numerous other high level positions. Let me also add that it is Dr. Kargbo whom I am introducing, a geographer by training, with specific research undertaken on urbanization in Africa. Ambassador Kargbo thus comes to us with a wide range of academic, diplomatic, and technical expertise. We are thus pleased to have him provide our keynote address today.

Tom O. Kargbo, Ambassador of the Republic of Sierra Leone. I always thought the United Nations was a place where whatever you do you pay for it. Phillip, I don't know if this is a way of making me pay, but I shall do my best.

I think we were treated this morning to a very exciting session on environmental issues, especially as they affect development in Africa. I won't pretend to be an expert. I am not. Prior to my coming to the United Nations forum, I was a university lecturer myself, in the Department of Environmental Studies at the University of Sierra Leone. When I did come to the UN, it was not at the forefront of national politics. What we are seeing now is not even new. Since the creation of man, we have been affecting the environment.

I heard the four panelists this morning. I would like to briefly go through the things which were highlighted, before I turn to my own remarks. I am very happy that the World Bank, at least the gentleman from the World Bank, Kevin Cleaver, has undertaken an analysis of the environmental problem. We all know what those problems are. Perhaps some of you know what should be done to eliminate this problem. There may be general disagreement on the institutions of the World Bank, and NGO's, as to how this problem should be dealt with. What gives me encouragement is that there is an acceptance that

the problems exist. There is an acceptance of the problems as enumerated by all of the speakers.

Separating Cause from Symptom in Analyzing Africa's Environment

The picture which has been painted this morning is not at all encouraging. You can see the plight of the African technocrats. When I listened to them, honestly, if you give me any plan to devise for my country, I will be confused. My confusion stems from the fact that I do not know exactly what to do about it. Are we dealing with the problem, or are we dealing with the symptoms? These are questions which we need to ask ourselves. The general conclusion is that there is a need for us to remodel the policies as they affect Africa. If the need is there, will we be allowed to remodel? This is a question of allowing you to remodel. Don't you know that we know the problems? We do. Even the man who has not been to school knows exactly the problem that he is facing.

The talk of popular participation, to me, raises a simple question. We have been participating since time immemorial. Let us not be blind to certain things. I talk here as a Representative of a Government, as somebody who believes in the tenets of democracy. I do not believe in dictatorship. Quite a few of you know me, and you know that we have often argued about the conditions for democracy. Now I am speaking to you about a national debate, which is whether or not the system should be open.

You ask me if there are institutions which guarantee freedom of speech, freedom of association. Is that not democracy? Should we decide ourselves on what we want? I heard talk of the green revolution. Honestly, all I saw of the green revolution was vehicles. The green revolution was only green in the offices occupied by the experts, or along the roads. Nobody ever touched the people who worked themselves. Nobody ever did.

What has happened with efforts to bring the green revolution to Africa. Consider the following. A World Bank, or some other multinational agency, expert comes to Freetown on a mission. First of all, he complains about the mosquitoes. Discomforted, he does not leave his hotel room. If he leaves his hotel, it is to an air conditioned office.

Under the circumstances, is the developmental expert on a country field mission likely to drive in a jeep on tertiary roads, up country, one hundred and twenty miles to investigate local conditions first hand? Do you think he will go? He will stop where the asphalt stops. And he will come back to the home office with a report, a report which

will have been prepared largely from central office documents and from conversations with senior officials. And we sit down as technocrats and accept it, even though it may simply represent a compounding of past errors.

The Complexity of Demography and Land Tenure in Shaping Africa's Environmental Choices

There are many ways of looking at Africa's environmental problems. We have had an agenda which has been set. People think population is increasing at a speed so much so that there is pressure on the land. So they recommend small families. Do you know why the man has chosen to have a large family? Don't you think it is his own choice as to why? My father has thirty-nine of us. And we are all very prosperous. How can you convince this man to have less than the number that he has when all thirty-nine of them are prosperous?

We are talking about land tenure, and of land tenure reform. If you go places in Africa, there are certain countries. We make a mistake as experts. We tend to treat Africa as if it were one homogenous region. No. If you talk about Sierra Leone, we have twelve different ethnic groups. We all look at land in a different way. If a majority of the people who own land...What we should seek to do in this case is to find a marriage between those who have the capital and those who have the land.

The reforms which have been advocated for Africa will prove rather unsuitable for situations which are little understood. What we seek to do is to have people understand us, primarily all those development policies which have been advocated since 1960 up to now which have failed. If there had been basic understanding of the fact that we were doing things which were not suitable for these people, but because they do not have the capital, they will not say no.

We sit down to plan for new policies. What are the things that attract international financial institutions? A plan. If you want a plan, they do it for you. If you want a defense of the plan, they make it for you. And so you finance the plan. The plan is not financed in isolation. It has to come down to the people. And if it is not accepted by the people, you have failed right before you start. These are some of the problems.

I heard a lot of panelists talk about agriculture. Again, it is tied to the land tenure system. It is also tied to the various financial institutions, the lending institutions, or policies of lending institutions. We have heard about growth as distinct from "pseudo-

growth". We have heard about development and we ask ourselves, "What does it mean?" An economist, and I do not mean to underrate anyone, is somebody I respect. I respect economists because they look at people and put in quantitative terms what even the cost of life is. This is all fine for presentations. These are the sorts of things which international institutions accept. But you forget that in an environment where you cannot price something such as human life, whatever policies you have which are based on that price are actually making false assumptions. If the assumptions are false, the conclusions will be false.

When you turn to us and you say that you have faith, it is not us, it is really those who do not seek to understand. They do not understand first of all how to formulate these policies, and secondly, how to implement them.

On the African Development Bank's Environmental Policy Statement

I am happy that the African Development Bank has come up with a document relating to environmental policies. I am also happy that the document reflects the sort of concerns which those of you who are interested in environmental policies for sustainable growth in Africa are advocating. My fear is that these policies will contain conditions which will be attached.

I have spoken to international financial institutions. I have taken part in negotiations with members of the World Bank. They will set conditions which as a government, when you apply them in your area, the people will riot against you. We should also look at this thing as a government which is there to protect, not only the people, but also the institution of governance.

International financial institutions say to you to eliminate all of the subsidies. If you eliminate the subsidies on certain goods such as rice, which is the staple food of my country, the price of rice will go up as an incentive to produce. On paper you are correct. But since we eliminated subsidies, there has not been an increase in production. What has happened is a series of riots from the most rural to the most urban areas.

Now we are developing in a confused state. At one point, the agenda is one thing, and which has not been achieved. Another one comes along, and we will not have finished that one. Now we are talking about the environment. It is a very big agenda. Believe me, what we heard this morning leaves us with enough to talk about and to think about for quite a long time. Again, I want to use this opportunity to thank those panelists.

I think that they gave excellent presentations. I want you to join me in giving them a hand.

I will formally start by highlighting to you what I think. I have sat down, thought about, put on paper. Again, as I told you, I am not an expert. So make no mistake about what you hear. It is subject to criticism, as you have had this morning. I do not hesitate to do that.

Distinguished guests and visitors, ladies and gentlemen, friends. I am delighted that the Center for Economic Research on Africa is sponsoring this conference. It is my pleasure to be able to participate. Let me add my sincere thanks to the organizers and deep appreciation to all of those who have an interest in Africa's environment, which is the subject of this conference.

As we gather here to address a process as complex as development and the environment, in a continent as diverse as Africa, let me draw your attention to an observation. It was made by Mahmoud Ul Haq, the special advisor to the administration of UNDP. He said in a seminar that Africa has got more bad advice per capita than any other continent. We do not want to fall into the same trap I hope.

On the United Nations' Environmental Policy Initiative

Since nearly two decades ago when one hundred fifty nations pledged in Stockholm to preserve and improve the environment for the benefit of mankind and posterity, environmental destruction has accelerated. Let us take the UNEP figures. Some eleven million hectares of tropical forest are destroyed every year. If you look at certain areas, deforestation is taking place at a rate of fifty thousand kilometers yearly.

Over the past thirty years, about two million square kilometers of trees have been cleared. That area could be compared to Mexico. The world is currently using some eighty thousand chemical products deemed potentially hazardous. Some twenty billion tonnes of wastes containing hazardous chemicals are dumped into the world's oceans annually. Ninety percent of this toxic garbage remains in coastal areas, poisoning sea life.

Taking Stock of the Magnitude of Environmental Pollution

Let us not underestimate the significance of environmental pollution for the world community. I have seen such pollution, some years ago, even here in New Jersey. Since I came to this country, I have never gone to any beach. I am frightened stiff. I will go anywhere but the beach. You do not know what you are going to get there and bring home. Carbon dioxide levels have increased by twenty-five percent since the industrial revolution.

For the environments which we are talking about, it is our only common heritage. It is so whether you are in the north or in the south, or in the east, or in the west. Pollution has no specific address. If I live in South Africa, it may still find me there. If I pollute the seas in South Africa, and you live in North America, it will come to you. That is our one common heritage. It is where we live. It is also the environment that we seek to develop, to improve the quality of our lives.

There are times when we treat the environment as if it were a separate entity, separate from human action. There is quite a lot of controversy in many quarters, as to the extent of damage which has been inflicted on the environment. There is a view which minimizes the damage. Now this view seeks to exaggerate the earth's recuperative ability. They therefore advocate slow remedial measures by the international community.

I read through the guidelines of this conference. They clearly indicate to me that the subject of discussion is actually very broad. The task is enormous. The environment is very complex and it is also very delicate. We are talking here about the atmosphere, the oceans, the seas, the rivers, the lakes, the climate, the soil, flora, and fauna. All these components have unique relationships to each other through which human existence and progress have been ensured. Today it is the very progress of human development that threatens to upset the integrity of the environment. That jeopardizes not only the further progress of man, but his very existence.

Institutional Responsibility for Environmental Conservation

In Africa, perhaps more than anywhere else, degradation of the environment portends severe consequences. It affects long-term economic progress, and thus sustainable development of the region. Faced with these prospects, African policymakers have reacted by raising concerns over such issues as transfer of toxic wastes into the region. Concern has also been raised over the greenhouse effect, and the progressive depletion of

the ozone layer, which has been caused by pollution of the atmosphere, mainly by industrial activities.

In my profession we do not name names. We say for whom the cap fits, let him wear it. However, one can observe that an unequal global power distribution has made it difficult to compel those who should accept a fair share of responsibility for the damage and their commitment to rectifying the problem. Thus, African countries have been unable to prevent the dumping of toxic wastes. We know the waste is being dumped.

In a conference on the zone of peace in Brazil, a Brazilian delegate said that if you see any ship coming around the coast (bearing toxic wastes), we will inform you. Everybody know that is not enough. Who knows in Sierra Leone that the ship is coming to dump toxic wastes? What do we do? We do not have patrol boats. They can come twelve miles away and dump the wastes anyway. They do not even ask you.

There are times when polluters even bring toxic wastes to land, in drums. They put it in your backyard and the man says that he just brought these things for safekeeping. He pays you twenty dollars per day. Have you ever heard those stories? And you keep the drums there. The man will even utilize the drums to store water.

You look at those things and you ask yourself what is it being done. In the originating countries of toxic wastes, there is strict regulation as to how it is to be disposed of. Now why can't we apply those regulations worldwide? We are not asking you to punish anybody. We are asking for fairness. We did not manufacture anything. We do not know what the waste is. You bring it, and you even tell us it is there to fertilize the land and we will believe you.

Global Linkages Arising from Environmental Pollution

I am not a scientist. I am not an agriculturalist. By putting a disproportionate burden of adjustment on these poor countries, anit-pollution provisions, even in international conventions, are seen to be biased against the economic development of Africa. The impact of these conventions is undermined by the omission to address seriously the questions of technology transfer and adequate financial assistance. Concern over the impact of rapid population growth on the environment has not been translated into effective action because of the inability to replace the predicted shifts in cultivation systems with more efficient agricultural methods that generate productivity and involve little or no deforestation.

Similarly, the heavy pressure placed on the forest as a source of energy can never be relieved without the provision of affordable and more efficient energy sources. You look at the common man. You tell him not to cut the wood. That is his source of income. That is his source of fear. What do you give him as a replacement? How do you expect this man to respond? It is not that what he is doing is good for the environment. It is bad. When you tell him not to cut down the trees, you cut down his life.

Concern has also been expressed over the destruction of the rainforest by such activities as logging and certain types of mining, as well as the decimation of wildlife. Now we see that in certain areas in Africa, there is preservation of wildlife. In east Africa, for instance, and in south Africa, we see examples of wildlife game park management schemes that have had some success. In Sierra Leone we are trying to establish one park, and possibly we need to do more. We are faced with tremendous economic problems. We are grappling with them. And now the environment has come as an agenda to add to those problems.

Economic Policy Aspects of Environmental Quality

The desperate need for foreign exchange imposed by the necessity to pay for imports and to liquidate foreign debt in the face of depressed commodity prices, among other things, have made concern for the environment little more than wishful thinking. If the view expressed by Kevin Cleaver were the official view of the World Bank, I would have sent a telex to my President, to tell him that what we have been trying for all along is finally here. Your presence in institutions of this nature is an encouragement to some of us. What we will seek to do is to have some of you in such institutions to spread that sort of thinking, positive thinking, for Africa's development alternatives.

I would also mention Africa's terms of trade. We are all familiar with what is happening. There are times when you sit down, and believe me, as I am in a government institution, I know how things are run. There is so much blame being levied on governmental institutions in Africa that there times when I sit down and I say, "Look, we are creating all these problems for these people".

You come to us with a package. As I am talking we have had all manner of negotiations with the IMF and the World Bank on debt. What matters to them is what happens to GDP, and that it should be rising. Well, it's fine. Now when the General Assembly, in 1983, asked the World Commission on the Environment, to formulate a

new agenda for change, quite a lot of us thought that the time is here. We thought that this was a moment of historical change, an historical challenge for international relations. Yet there has been a growing realization, even in national governments in Africa, of the need for change. Unfortunately, multilateral institutions insist that it is impossible to separate economic development issues from environmental issues.

On the Global Environmental Facility

We see the establishment of a global facility for environmental conservation. With all respect to the institutions represented here, it frightens me when I learn that this global environmental facility is again being financed by the World Bank and by UNDP, UNEP, and so on. Yesterday, I was asking whether participation in the facility would be based on conditionality, again. Of course, the conditions will be there. The conditions will be such that you might as well say, "no, thank you." Let us manage with the little that we have.

What impresses most people is a success story. They will tell you that if you do these things that were done elsewhere, you will be successful. Take Ghana, for example. One success story. It is receiving world headlines. There are forty-nine failures. Why can't you give these people the help which they deserve? For those of us who know, we know exactly what happened. In the Ghana situation, you can not take this as a success story and then say that if Sierra Leone did the same thing that it too would be such a success story.

Ghana is not Sierra Leone. Sierra Leone is Sierra Leone. Nigeria is Nigeria. You may all see us as one people. We all have the intention of being one state in Africa, but we have different cultures at the moment. We look at things differently. These are the sorts of things which should go into any planning, to address those conditions.

Let me give you the sort of things which the Global Environmental Facility has chosen to finance. First is protection of the ozone layer. Second is a reduction in greenhouse emissions that cause global warming. Third is the protection of biodiversity. Fourth is the protection of international water resources. Who has drawn up this agenda? I can't say that it has been us.

The African Bureau of UNDP called me about a week ago and they asked me to look at the agenda put forth via the Global Environmental Facility. An Official from the bureau said that we should submit projects which would fit these activities. I declined and

said that they should take it back and to tell them that we are not going to submit a project. Instead, let us sit down and talk about the agenda.

Most policy initiatives which have been accepted under externally imposed institutional arrangements in Africa have come to fail. When they fail, Africans are blamed. What is needed is for Africans to sit initially and discuss the setting of an environmental agenda, to identify the sort of thing which we need to address, after which we can formulate suitable projects. Instead, what usually happens is for external institutions to send experts to draw up the agenda for you and they say that you should go and develop projects which fit the agenda. I say "no", and that we should sit down and think about the agenda.

Conclusion

I submit that any discussion of environmental problems, without a broader perspective that encompasses the factors underlying world poverty and international inequality, will only be touching the symptoms. Say what you will on the major cause and effect relationships of global environmental problems, but when all has been said and done, it is poverty that continues to haunt the African continent.

In essence, one of the major challenges for the international community, especially the environment and development conference in Brazil that is scheduled to take place in 1992, is to provide an adequate and immediate response to Africa's legitimate need for technology, education, and financial assistance. If the long-term goal of protecting the environment, or the integrity of the environment, of Africa is to be assured, probably, as we have seen in the deliberations by representatives of the institutions represented here, I would appeal to them that we need financial assistance. Let them also impress on the donors that it is high time that we consider the environment as a form of debt management, with all of the attendant mechanisms for adjustment that result in sustainable choices for the future. Thank you.

Discussion

Phillip LeBel, CERAf. Thank you Ambassador Kargbo. In keeping with the spirit of our deliberations this morning, would any of the panelists like to comment on Ambassador Kargbo's remarks before I turn it over to the audience?

Kevin Cleaver, the World Bank. The Ambassador said so many things that I am not going to debate all of them. There are, however, a couple of points that I think are important. I think that there is a misconception about how international agencies, or donors, intervene in development projects. The Ambassador suggested that it was very rare to find World Bank staff actually out in the field managing projects. My impression, as somebody who manages World Bank staff, is that we do too much of it. The NGO's also do too much of it. In the final analysis, it has to be Africans themselves that manage their own projects. It should not be donors who manage these projects in the field.

In effect, we should act very much like Chase Manhattan Bank when it deals with Chrysler. When it provides a loan to Chrysler, it doesn't go to Chrysler and manage the automobile manufacturing. It lets Chrysler do that because Chrysler, supposedly, hopefully, knows how to produce a car. If it doesn't, then Chrysler should not have a loan. I know that it is very difficult in the development process to do this, but essentially what I would like to see is not having our people manage these projects, nor my friends in the NGO community. It should be Africans that do the management. This said, it is not true that World Bank staff do not go to the countryside. In fact, we prefer to do that more than going to conferences or sit in our offices.

The other point is a broader issue. There is a schizophrenia in dealing with international organizations. On the one hand it is suggested by Korinna Horta, and many in the NGO community, that we have to tighten up our conditionality. We have to have environmental conditions now attached to our loans. That is what an environmental assessment becomes in effect.

The industrial world also forces us to strengthen our conditionality. There is some movement in the United States and in western Europe to impose through the World Bank greater conditionality on developing countries. In the U.S. Congress, there is a proposal to have political conditionality attached to multinational loans, and to African Development Bank lending as well. Such conditionality would be used to force countries to adapt political systems that are attractive, not just to us as bureaucrats, but to members of Congress.

My own view is that although some conditionality is useful, there is a danger here. The danger is that you are creating, by your elected representatives, very very powerful multinational institutions. In effect, we may become the policeman for the world, the political policeman, the economic policeman, and the environmental policeman. To give

that power to bureaucrats in banking institutions is a mistake. They should not have that power.

Another point I would like to raise is the issue of popular participation. We are all in favor of increased popular participation. The problem, as we all know, is that all too often, governments have very little accountability to their people. When this occurs, some rather perverse consequences can result. When the Ambassador talked about food subsidies, food subsidies benefit a very small percentage of the urban population, usually the urban elite.

Food subsidies do not benefit farmers. Farmers are having their production confiscated through artificially low producer prices. They are forced to market their production through government monopolies, which they simply would not do if they had their own choice. The accountability of governments and people at the top is the key.

Korinna Horta, Environmental Defense Fund. I would just like to follow up on Kevin Cleaver's remark. I think that accountability of governments to their own people is the key point. When Kevin said that NGO's like my organization are pushing the Bank to impose more conditionality on loans, what we are really looking for is that countries that are not accountable to their people, and who exploit the resources in a very unsustainable manner and in which there is little or no benefit to local communities in any case, that there be conditions that guarantee more of an accountability to make it possible for local people to participate. Such conditionality should affirm local participation actively and decisively. And so the conditionality which we advocate is designed to enhance accountability of both governments and multilateral development institutions.

M.M.L. Shongwe, African Development Bank. I just want to take a good aspect of what the Ambassador said. Coming from the continent and from a development financial institution, when you talked of poverty, in the past we had divorced poverty from any other activity, including the environment. I think the plea that he brings here is that we need first to understand what are our basic needs. We must do so before we actually go further.

As the Ambassador spoke, what came into my mind was a book written by Susan George, *How the Other Half Dies*. If you read this book, you get to understand that if you are interested in a world that is free of hunger, a world that is free of development constraints, then development should receive top priority in the formulation of global economic policy.

Whatever ills we ascribe to conditions in the developing world, should not be blamed on the World Bank. You can not fault the World Bank, and the African Development Bank, when they are trying to bring all of us together to have one common agenda for purposes of development. It is this aspect of Ambassador Kargbo's speech that I am taking home with me, namely, that for those who are ready to assist, please learn what the problems are so that your assistance will be relevant. I know many people who work very hard in Africa, who spend time in the rugged terrains of the continent.

I also know people who go to Africa, not because they are interested in development, but first they have their own ego, that they will go back and write a thesis, and tell you that they know about a particular issue, because they spent time in one part of the continent. The continent is vast, and it is diverse. The economics that you apply must be relevant and it must be country-specific, project-specific, and area-specific, if we are all really interested in development.

Kevin Cleaver also touched upon the issue of environmental conditionality. One proposal calls for an environmental impact assessment study to be undertaken one hundred and twenty days before the actual project proposal is submitted for consideration by a banking board. Such a requirement would impose enormous burdens on multilateral development institutions, even if the intent is to promote sustainable development choices.

First, multilateral banks themselves often do not have the institutional capacity to undertake environmental assessment studies. Second, it interrupts the project cycle, and thus adds to cost of development projects.

As an environmentalist myself, I appreciate the concept of environmental assessment. At the same time, one has to ask whether anyone has considered how such assessment standards are likely to affect the people most likely to be affected, namely, the local population. In the short-run, most development institutions do not have the technical expertise and the financial capital to undertake these measures. And while everyone agrees that in the long run such measures are essential, there is little short-run consideration of the financial and technical constraints which must be met if such assessment is to be undertaken.

The plea that I want you to take with you, and which the Ambassador has raised, is, as an African, that we have too many agendas that seem tangential, and which are not

focused directly on the problems affecting the continent. I am the first one to affirm that African problems must be solved by Africans themselves. They know them better than anyone else. Let us find out how we can help these people. That is the preoccupation of the African Development Bank. All of the policies that we come up with try to be as liberal as possible, and yet, we do have controls through conditionality. We have the conditionalities ourselves, because we want to be able to steer the boat in the right direction. Thank you.

Wendell Martin, Environmental Services, Group Research Corporation. As far as the World Bank is concerned, it appears that everyone here is worried about their funding of certain kinds of projects, namely, in terms of accountability, and whether adequate feasibility studies have been undertaken. With regard to agriculture, does the World Bank finance new projects and programs where substances which are banned in the United States, for example, certain pesticides and herbicides, are utilized in the countries in which they are funded.

Secondly, if they do, what do you think is the responsibility, morally, legally, and financially, to assist in cleaning up the environment? By this, I mean, whose responsibility is it, and how is this responsibility translated into appropriate action?

Kevin Cleaver, the World Bank. I can only speak for the Africa region as this is the only one where I have worked for the World Bank. The use of pesticides and herbicides in Africa is still minute compared to the level in this country. Even with all of these protections, it is not yet a problem in most of the continent. What we finance right now is very limited indeed. I am trying to think of a project in which we do finance herbicides and pesticides in Africa. I am sure that there are some, no doubt.

The rule is that we follow FAO guidelines of dangerous pesticides and herbicides. We have a banned list, and anything that is procured under our projects that does not conform with those guidelines, that is, if it is a prohibited pesticide or herbicides, we refuse to finance it. That is the rule. Now in other continents such as Asia, I suspect that there is much more of a problem since the use of chemicals, fertilizers, pesticides, and herbicides is much greater. Yet we also apply the same rules to that region.

Wendell Martin, Environmental Division, Group Research Corporation. The rules that you use - are these from the U.S. Environmental Protection Agency, specifically the Toxic Substances Control Act? Secondly, the amount of DDT which has been banned in this country has been increased.

Kevin Cleaver, the World Bank. Don't forget that the World Bank does not finance all inputs in all developing countries. I can tell you that we certainly do not finance DDT. In answer to your first question, we try to remain independent of the United States. It is a multinational organization, owned by the governments of the world.

We had the same problem with regard to environmental assessment. The U.S. government wanted to impose certain standards which differed from those used by other member governments. It is a constant battle with the U.S. government. As the largest shareholder amongst our owners, they do try to impose their conditions on us.

Environmental assessment is one, pesticide and herbicide use is another. We try to have independent rules. In fact, in our environmental assessment paper, we shopped around and chose the best from western Europe as well as from some of the practices in the United States. So the answer is "No". We do not copy or duplicate what U.S. principles and practices unless we independently evaluate it to be the best. Frankly, it isn't always the best.

Dula Abdu, Texas Commerce Bank. As I see it, environmental standards are being imposed by different sources on the African agenda. It is becoming a big problem in that it is belittling other factors that are affecting the continent. The question is that we have always complained about western influence and domination. Now this is one of the factors that is coming into the picture. How do we protect ourselves if it is not really critical to the African agenda, particularly when it is imposed from without and when it supersedes other important issues?

M.M.L. Shongwe, African Development Bank. I would respond in that the environmental policy paper to which I referred to looks at environment not as an entity and not as a supersector over the others. It looks at the environment as an integral part of development. We believe that this is the best way of looking at these things because environmental issues, although they are now being highlighted as the number one problem, from our point of view, they are part and parcel of all of the development problems that we have.

As I indicated earlier, there are agendas that are being elevated because of specific interests from some other quarters. I indicated to you that for all of our African countries, I do know that environmental protection, environmental preservation, ecology, is an

agenda that is there. They know about it, but the agenda itself is overwhelmed by the pressing problems that exist. The question is, "Who pays for them?"

The economies of these countries have been going down, and therefore, some of those issues that relate to long-term development tend to be postponed until the more immediate ones are addressed. I can assure you that the African Development Bank, as expressed by President Babacar N'diaye, that issues of women in development, issues of environmental protection, all form the agenda for development of the continent. It is a whole process.

In terms of our management system, and in terms of our lending portfolio, from the identification phase, we want to see that the economic instruments that are used to determine the viability of a project are also subjected at the same time to environmental considerations. This holds right through from project identification to project preparation, project appraisal, supervision, implementation, and evaluation, up through post-evaluation.

N. Majoetje, Lesotho Mission to the United Nations. My question is directed to Mr. Cleaver. Earlier this morning, he talked about popular participation. He said that he did not mean necessarily many political parties. Now when he reacted to the remarks made by the Ambassador from Sierra Leone, he said that the lack of accountable government in Africa is responsible for the troubles that African countries are going through. In light of the issue of suitable constitutions, one of the basic refinements is that the existence of political parties is a process essential to accountable governments. I wonder how he could elaborate on this.

My second question is in reference to Mr. Cleaver's statement that the removal of subsidies would not be of major magnitude since they tend to benefit only a small minority of the urban elite at the expense of farmers. I do not know who benefits from health subsidies and other subsidies in the social sector, such as education, but do those subsidies benefit only the urban elites? Thank you.

Kevin Cleaver, the World Bank. You know, we have digressed into politics. In agreement with my NGO colleagues, I think that the reason why we have done so is that one of the sources of failure in agricultural projects was a lack of popular participation in the design and execution of projects. As you look at how to correct that imbalance, inevitably the logic takes you to government reform. This is something that you can not assure on a micro level.

When I said that I didn't think that multiparty systems were necessarily the answer, what I was trying to suggest was that political pluralism might be assured in various ways. It doesn't necessarily require multiparty systems. It is conceivable, perhaps unlikely, that you could have a certain amount of political pluralism, at least enough to make these projects work through a one-party system. That is why I tried to make the distinction. It is a fine point.

If you want to go into political science, I am not the person to argue with. The point here is to assure participation by large numbers of people from the grass roots. It requires a political apparatus that permits them to articulate their interests. That is the point.

On the second issue, I think that you may have misinterpreted me. I said that the existing food subsidies, we have found in study after study in Africa, benefit almost exclusively the urban elite. These are people with money. How do these subsidies work? Typically, what is done is to set an administered price that is lower than the market price. People who are buying the commodity benefit. It isn't the subsistence farmer, who doesn't buy anything who is going to benefit by an artificially low consumer price. It is the urban elite.

You find that a lot of these subsidies are on more luxurious goods. Meat, dairy products, for example, are two luxury items that are commonly subsidized. It is certainly not the poor who are consuming these commodities. What I said, in fact, was that the removal of these subsidies would benefit the poorest. Most of the poor in Africa are the rural poor, contrary to conventional wisdom. They are not urban poor. The removal of subsidies which permits farm prices to increase actually benefits the rural poor.

It is true, and perhaps this is what the Ambassador was referring to, that there are urban poor who are hurt by these subsidies. But the answer is not to continue or maintain a distorted price system. This is what the Soviet Union is finding out today. The answer is to get rid of the subsidies and the distorted price system. As you do so, it is appropriate to undertake mitigation actions to help the poor who are hurt. As examples, I would suggest food for work programs, public infrastructure employment, to employ the urban poor.

As to education and health, this is a different case altogether. I do not think that I have said anything about eliminating education and health subsidies. Those are public goods that require public involvement. But food is a different story.

Tom O. Kargbo, Ambassador, Sierra Leone Mission to the United Nations. I don't want to respond to all of these issues, but I believe that we should draw a distinction between a system which has evolved over one hundred years and that which is imposed on our people. I think that if we draw this distinction, maybe we will be able to understand the reasons why I raised the particular issues to which I referred.

I also want to draw your attention to a project which took place while I was a university lecturer. It was called ACRE, Adaptive Crop Research Extension, and was devised by the United States. I worked as an administrator with this project. The villagers were called in to participate. They did. They told us what they wanted. We went on to advise. We told them they could produce more than they actually consumed.

Now in Africa, typically one-third of all crop production is lost through spoilage. What is the Bank's, or multilateral institutions actually doing to alleviate the problems which have been created by such spoilage, when they fully know that it has been brought to their attention? It is not that we can not produce enough food to feed ourselves. We can. If you go to the ACRE project, they produce a lot. What has discouraged the ordinary man is why should he produce a tonne when first of all he can not preserve it? If you ask how many projects that contribute to preservation, you will be hard pressed. Institutions are not generally prepared to finance such conservation projects. What is the multilateral institutions' assumptions about such things?

Kevin Cleaver, the World Bank. The Ambassador is absolutely right. Spoilage is a big problem. He is also right that other donors and African governments have had over the last twenty-five years the wrong approach to this. What the donors did was to support very large parastatal institutions, which would purchase foodstuffs from farmers, store it and distribute it. Invariably, these public institutions became very big, unwieldy, corrupt, very similar to what you see in eastern Europe, where they have the same kind of institutions.

These institutions were so market unresponsive that frequently you found them buying at the wrong time, and selling at a price which did not permit them to cover costs. Food rotted in their storage facilities, which were not properly managed. The conclusion we came to is that bureaucrats, and this includes us as well, can't do this sort of thing. You have to leave it to individuals, and to the marketplace.

A better answer is on-farm investments in storage facilities, by farmers who have an incentive to store food. You have to have an incentive framework in place that makes it possible and profitable for them. You can't have such an incentive if you control prices, and you have monopoly parastatals that purchase all production so that the farmer can not sell to whom he wants. I suspect that the Ambassador will not be satisfied with this and he is right not be satisfied.

There is, however, more to the issue of farm spoilage. On-farm storage technologies have to be discovered and introduced. As Mr. Shongwe said, these kinds of storage facilities will vary from country to country, from climate to climate, from type of pest to type of pest. It is a big job. But that is the answer.

Paul Kadjo, Millersville University. I would like to know why the international system shifted from a system of giving aid to developing nations to a situation in which developing nations have to pay exorbitant interest on the loans that they acquire from the international system. When these countries acquired independence in the late 1950's and early 1960's, this situation was very different. A very clear and explicit commitment was made to helping these countries, just as the World Bank made a commitment to aid war-devastated Europe through the Marshall Plan in the immediate post World War II period. Now the situation has shifted to business operation of loans. I simply would like some clarification of why this has been the case.

Kevin Cleaver, the World Bank. You know, I think we could have a whole seminar on debt, and I believe that CERAf had such a seminar not long ago. In responding to your question, let me put out the caveat that I am an agricultural economist and I do not have any responsibility for the debt question, which is why I can be so irresponsible as to say that African governments should not repay their commercial bank debts.

A lot of the commercial debt, which is the high interest loan debt, was provided by the Chase Manhattan banks, the Manufacturers Hanover Trust, very much in the same manner that they provided their real estate loans in this country. They did not have concrete projects for which they provided this money. They provided it in exchange for a guarantee, a sovereign guarantee from the governments.

In the vast majority of cases, commercial bank loans to Africa went into the pockets of the political elites, or the pockets of somebody who did not produce concrete realizations. Their failure rate is nearly one hundred percent. Now that debt tends not to be paid back. There are very few African governments that are repaying this debt. To

my mind, quite rightly, and maybe that is the shared responsibility that you are talking about.

Then there is official donor debt. Each of the donors, the bilateral donors, the international institutions, have varying interest rates and maturities, varying hardness if you will, of their loans. It tends to be much softer than commercial lending. They also bear some of this responsibility. We, for example, have a fifty percent failure rate in our agricultural projects, although less than that in other sectors. You could argue, as someone here did, that we should forgive those loans that failed. That is a political issue, as to whether it can be done or not. I am not going to risk my job by suggesting that it be done or not.

Let's focus the problems on real causes. There is a glut of dollars that arose with the oil price boom of the 1970's. Banks were taking money from the Middle East and lent out a lot of it in Asia and in Latin America. The problem is even bigger in Latin America. There you have tens of billions of dollars that were lent out for nothing. They went into the pockets essentially of the political elite. That is the big problem. There were no realizations at all. With many commercial loans, there are many cases in which literally nothing happened at all. And that is perhaps the most troublesome issue.

Phillip LeBel, CERAf. At this point, I would like to bring our discussion to a close. There are certainly many question which we have raised, and many more which we have not answered. It has been my goal in all of these conferences, as with this one, that we could have a reasoned discussion about a particular issue, and to increase our understanding of that issue through the participation of various institutions that are involved in that process. I hope that in some modest way that we have contributed to that dialogue toward a productive solution of some kind, in this case, toward a more productive solution of Africa's environmental problems. I thank you all again for coming. I very much appreciate your participation. I thank the panelists and also Ambassador Kargbo for being with us. Thank you once again.

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Appendix A

Table 1
Basic Economic Development Indicators

Africa	Population 1988, millions	Population 2000, millions	Growth Rate, 1988-2000	GNP per capita \$U.S. 1987	GDP per capita \$U.S. 1987
Ethiopia	605.4	863.8	2.99%	\$686	\$1,187
Chad	45.0	61.0	2.57%	\$130	\$454
Zaire	5.4	7.3	2.54%	\$150	\$400
Malawi	34.0	49.0	3.09%	\$150	\$220
Mozambique	7.9	12.0	3.55%	\$160	\$476
Tanzania	15.0	20.0	2.43%	\$170	\$500
Burkina Faso	25.0	40.0	3.99%	\$180	\$405
Madagascar	8.6	12.0	2.82%	\$190	\$500
Mali	11.0	17.0	3.69%	\$210	\$634
Burundi	8.9	13.0	3.21%	\$210	\$543
Zambia	5.2	7.3	2.87%	\$250	\$450
Niger	7.9	12.0	3.55%	\$250	\$717
Uganda	6.7	9.8	3.22%	\$260	\$452
Somalia	17.0	26.0	3.60%	\$260	\$511
Togo	7.1	9.8	2.72%	\$290	\$1,000
Rwanda	3.3	4.7	2.99%	\$290	\$670
Sierra Leone	6.8	10.0	3.27%	\$300	\$571
Benin	4.0	5.4	2.53%	\$300	\$480
CAR	4.5	6.6	3.24%	\$310	\$665
Kenya	2.8	3.8	2.58%	\$330	\$591
Sudan	23.0	38.0	4.27%	\$330	\$794
Guinea	24.0	34.0	2.95%	\$330	\$750
Lesotho	6.6	8.9	2.52%	\$340	\$500
Nigeria	1.7	2.4	2.92%	\$370	\$1,585
Ghana	106.0	159.0	3.44%	\$370	\$668
Mauritania	14.0	20.0	3.02%	\$390	\$481
Liberia	1.9	2.7	2.97%	\$440	\$840
Angola	2.4	3.5	3.19%	\$450	\$696
Senegal	9.5	13.0	2.65%	\$470	\$1,000
Zimbabwe	7.0	9.7	2.76%	\$520	\$1,068
Morocco	9.2	13.0	2.92%	\$580	\$1,184
Egypt	24.0	31.0	2.16%	\$610	\$1,761
Côte d'Ivoire	51.0	67.0	2.30%	\$680	\$1,357
Congo	12.0	19.0	3.90%	\$740	\$1,123
Cameroun	1.9	2.6	2.65%	\$870	\$756
Namibia	11.0	15.0	2.62%	\$970	\$1,381
Botswana	1.8	2.6	3.11%	\$1,000	\$1,500
Tunisia	1.2	1.8	3.44%	\$1,050	\$2,496
South Africa	7.8	9.8	1.92%	\$1,180	\$2,741
Algeria	34.0	43.0	1.98%	\$1,890	\$4,981
Gabon	24.0	33.0	2.69%	\$2,680	\$2,633
Libya	1.1	1.6	3.17%	\$2,700	\$2,068
	4.2	6.5	3.71%	\$5,460	\$7,250

Source: UNDP, *Human Development Report 1990*; World Bank, *World Development Report 1990*.

Table 2
Africa Basic Health Indicators

Africa	GDP per capita \$U.S. 1987	Life Expectancy in years, 1987	Population to Physician Ratio '1000, 1984	Under 5 Year Mortality Rate '1000, 1985	Accessability to Water Rate 1985-87	Contraceptive Prevalence Rate, 1985
Algeria	1187	52		177	44	7
Angola	2633	63	2.3	107	68	7
Benin	1000	45	42.0	292	30	1
Botswana	665	47	15.9	185	52	6
Burkina Faso	2496	59	6.9	92	54	29
Burundi	500	48	57.2	233	67	1
Cameroun	450	50	21.1	188	26	9
CAR	1381	52	8.0	153	33	2
Chad	591	46	23.1	223	30	1
Congo	400	46	38.4	223	28	1
Côte d'Ivoire	756	49	8.1	114	21	1
Egypt	1123	53	4.3	142	19	3
Ethiopia	1357	62	0.8	125	73	32
Gabon	454	42	77.4	259	16	2
Ghana	2068	52	2.8	169	92	1
Guinea	481	55	14.9	146	56	10
Kenya	500	43	57.4	248	19	1
Kenya	794	59	10.1	113	30	17
Lesotho	1585	57	18.6	136	36	5
Liberia	696	55	9.2	147	55	7
Libya	7250	62	0.7	119	97	1
Madagascar	634	54	10.0	184	32	1
Malawi	476	48	11.6	262	56	7
Mali	543	45	25.4	292	17	6
Morocco	1761	47	15.6	119	60	36
Mauritania	840	62	12.1	220	16	1
Mozambique	500	47	38.0	298	16	1
Namibia	1500	56	9.0	176	40	1
Niger	452	45	38.0	228	48	1
Nigeria	668	51	8.0	174	46	5
Rwanda	571	49	34.7	206	50	10
Senegal	1068	47	13.5	136	53	12
Sierra Leone	480	42	13.6	266	25	4
Somalia	1000	46	16.1	221	34	2
South Africa	4981	61	4.8	95	65	25
Sudan	750	51	10.1	181	21	5
Tanzania	405	54	7.6	176	56	1
Togo	670	54	8.7	153	55	1
Tunisia	2741	66	2.2	83	68	41
Uganda	511	52	21.9	169	20	1
Zaire	220	53	40.0	138	33	1
Zambia	717	54	7.1	127	59	1
Zimbabwe	1184	59	6.7	113	65	40

Source: UNDP, *Human Development Report 1990*; The World Bank, *World Development Report 1990*.

Table 3
Africa Basic Education Indicators

Africa	GDP per capita \$U.S. 1987	Adult Literacy Rate, 1985	Gross Primary Enroll. Ratio 1986-88	Gross Second. Enroll. Ratio 1986-88	Gross Tertiary Enroll. Ratio 1986-88	Education Share of GNP, 1986
Algeria	\$1,187	46	87	38	8	
Angola	\$2,633	50	105	61	15	6
Benin	\$1,000	41	n.a.	n.a.	n.a.	3
Botswana	\$665	27	84	23	4	4
Burkina Faso	\$2,496	71	111	31	6	9
Burundi	\$500	14	41	8	1	3
Cameroun	\$450	35	68	6	1	3
CAR	\$1,381	60	119	32	4	3
Chad	\$591	41	82	17	1	5
Congo	\$400	26	73	10	1	2
Côte d'Ivoire	\$756	63	75	35	12	5
Egypt	\$1,123	42	85	30	4	5
Ethiopia	\$1,357	45	100	79	26	5
Gabon	\$454	66	46	18	2	4
Ghana	\$2,068	62	55	30	8	5
Guinea	\$481	54	78	49	2	4
Kenya	\$500	29	41	13	2	3
Lesotho	\$794	60	98	27	2	5
Liberia	\$1,585	73	102	18	1	4
Libya	\$696	35	82	35	4	5
Madagascar	\$7,250	66	95	80	15	10
Malawi	\$634	68	97	23	5	4
Mali	\$476	39	73	5	1	4
Morocco	\$543	17	29	9	1	3
Mauritania	\$1,761	34	85	43	13	6
Mozambique	\$840	17	61	23	6	6
Namibia	\$500	39	76	7	0	4
Niger	\$1,500	55	n.a.	n.a.	n.a.	n.a.
Nigeria	\$452	41	37	14	1	4
Rwanda	\$668	43	60	22	4	1
Senegal	\$571	47	69	7	1	3
Sierra Leone	\$1,068	28	71	19	5	5
Somalia	\$480	30	68	23	3	3
South Africa	\$1,000	12	22	10	5	6
Sudan	\$4,981	65	86	50	15	5
Tanzania	\$750	23	59	23	3	4
Togo	\$405	60	67	5	0	4
Tunisia	\$670	41	124	36	5	6
Uganda	\$2,741	55	126	46	7	5
Zaire	\$511	58	76	16	1	1
Zambia	\$220	62	84	32	4	0
Zimbabwe	\$717	76	102	45	2	4
	\$1,184	74	130	49	5	8

Source: UNDP, *Human Development Report 1990*; The World Bank, *World Development Report 1990*.

Table 4
Africa Basic Environmental Indicators

Africa	GDP per capita \$U.S. 1987	Urbanization Rate, 1988 in ha., 1988	P.Cap. Forest and Woodland 1988	Deforestation Rate per year 1973 to 1988	Per Capita Food Production Index 1979-81=100 1989
Algeria	\$1,187	41	1.17	-0.46	93.13
Angola	\$2,633	51	0.20	1.08	92.64
Benin	\$1,000	36	5.58	-0.17	80.28
Botswana	\$665	53	0.79	-1.32	122.44
Burkina Faso	\$2,496	33	0.80	0	68.57
Burundi	\$500	12	0.78	-0.83	113.61
Cameroun	\$450	11	0.01	1	88.2
CAR	\$1,381	60	2.25	-0.43	95.3
Chad	\$591	55	12.79	-0.03	89.67
Congo	\$400	44	2.39	-0.6	98.22
Côte d'Ivoire	\$756	50	11.16	-0.1	96.28
Egypt	\$1,123	55	0.49	-5.51	92.02
Ethiopia	\$1,357	55	0.00	0	107.13
Gabon	\$454	17	1.00	-0.11	88.74
Ghana	\$2,068	54	18.18	0	78.62
Guinea	\$481	38	0.59	-0.8	94.99
Kenya	\$500	33	1.49	-0.88	110.92
Lesotho	\$794	32	0.16	-0.78	102.66
Liberia	\$1,585	28	1.18	0.34	71.66
Libya	\$696	52	0.88	0	91.7
Madagascar	\$7,250	76	0.16	1.42	110.34
Malawi	\$634	32	1.33	-1.01	92.38
Mali	\$476	21	0.53	-1.28	85.77
Morocco	\$543	23	0.95	-0.45	99.38
Mauritania	\$1,761	56	2.74	0.04	125.33
Mozambique	\$840	54	0.63	-0.06	87.15
Namibia	\$500	41	0.98	-0.67	82.47
Niger	\$1,500	66	10.23	0	92.18
Nigeria	\$452	27	0.36	-2.09	83.82
Rwanda	\$668	43	0.20	-1.84	94.79
Senegal	\$571	11	0.07	-0.56	71.66
Sierra Leone	\$1,068	44	0.85	-0.46	103.55
Somalia	\$480	40	0.52	-0.22	87.27
South Africa	\$1,000	44	1.23	-0.55	97.26
Sudan	\$4,981	65	0.13	0.56	93.34
Tanzania	\$750	26	1.94	-0.74	82.66
Togo	\$405	46	1.69	-0.27	90.02
Tunisia	\$670	33	0.39	-2.99	92.71
Uganda	\$2,741	59	0.07	0.93	88.93
Zaire	\$511	14	0.33	-0.72	84.88
Zambia	\$220	46	5.15	-0.11	91.71
Zimbabwe	\$717	65	3.68	-0.31	95.99
	\$1,184	35	2.17	0	94.29

Source: UNDP, *Human Development Report 1990*; The World Bank, *World Development Report 1990*;
FAO, *Production Yearbook 1989*.

Table 5
Africa Basic Financial Indicators

Africa	GDP per capita \$U.S. 1987	Ratio of ODA to GNP, 1987	Exports Debt Service Ratio 1988	Int. Reserves Import Ratio in mos., 1988
Algeria	\$1,187	11.8	16.6	
Angola	\$2,633	0.3	77.0	4
Benin	\$1,000	4.0	12.0	0.2
Botswana	\$665	8.1	5.4	0.2
Burkina Faso	\$2,496	10.1	4.0	17.7
Burundi	\$500	16.2	11.9	4.6
Cameroun	\$450	15.3	25.1	2.9
CAR	\$1,381	1.7	11.9	0.7
Chad	\$591	16.1	5.9	3.9
Congo	\$400	20.3	2.7	1.7
Côte d'Ivoire	\$756	7.0	28.7	0.1
Egypt	\$1,123	2.5	13.0	0.1
Ethiopia	\$1,357	4.9	13.9	1.8
Gabon	\$454	11.8	37.4	1.5
Ghana	\$2,068	2.3	6.2	0.4
Guinea	\$481	7.4	19.7	2.7
Kenya	\$500	6.0	21.9	0.2
Lesotho	\$794	7.0	19.4	1.3
Liberia	\$1,585	29.4	5.2	1.2
Libya	\$696	6.9	15.0	0
Madagascar	\$7,250	0.0	10.0	5.3
Malawi	\$634	15.8	39.0	3.7
Mali	\$476	22.8	17.2	3.7
Morocco	\$543	18.6	14.2	0.7
Mauritania	\$1,761	2.4	24.8	1.5
Mozambique	\$840	19.0	21.6	1.4
Namibia	\$500	40.9	7.8	0.4
Niger	\$1,500	2.0	10.0	6.7
Nigeria	\$452	16.1	21.1	4.7
Rwanda	\$668	0.3	24.2	1.3
Senegal	\$571	11.6	9.6	3.2
Sierra Leone	\$1,068	13.6	18.4	0.2
Somalia	\$480	7.3	5.9	0.4
South Africa	\$1,000	57.0	4.9	0.6
Sudan	\$4,981	0.0	4.0	1.1
Tanzania	\$750	10.5	9.5	0.6
Togo	\$405	25.2	17.1	0.6
Tunisia	\$670	10.0	18.3	4.5
Uganda	\$2,741	2.9	24.2	2.5
Zaire	\$511	7.2	14.0	0.8
Zambia	\$220	10.7	6.9	1.4
Zimbabwe	\$717	21.1	14.2	1.2
	\$1,184	5.0	24.8	2.2

Source: UNDP, *Human Development Report 1990*;
 The World Bank, *World Development Report 1990*.

Figure 1

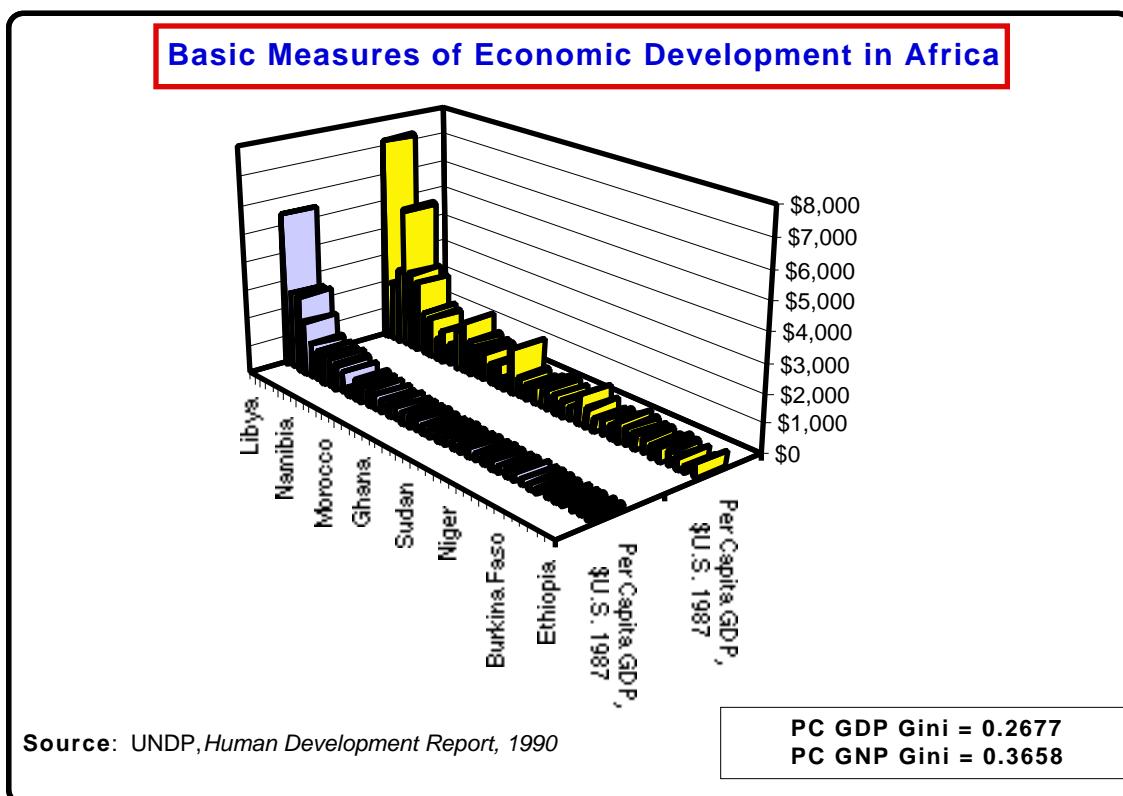


Figure 2

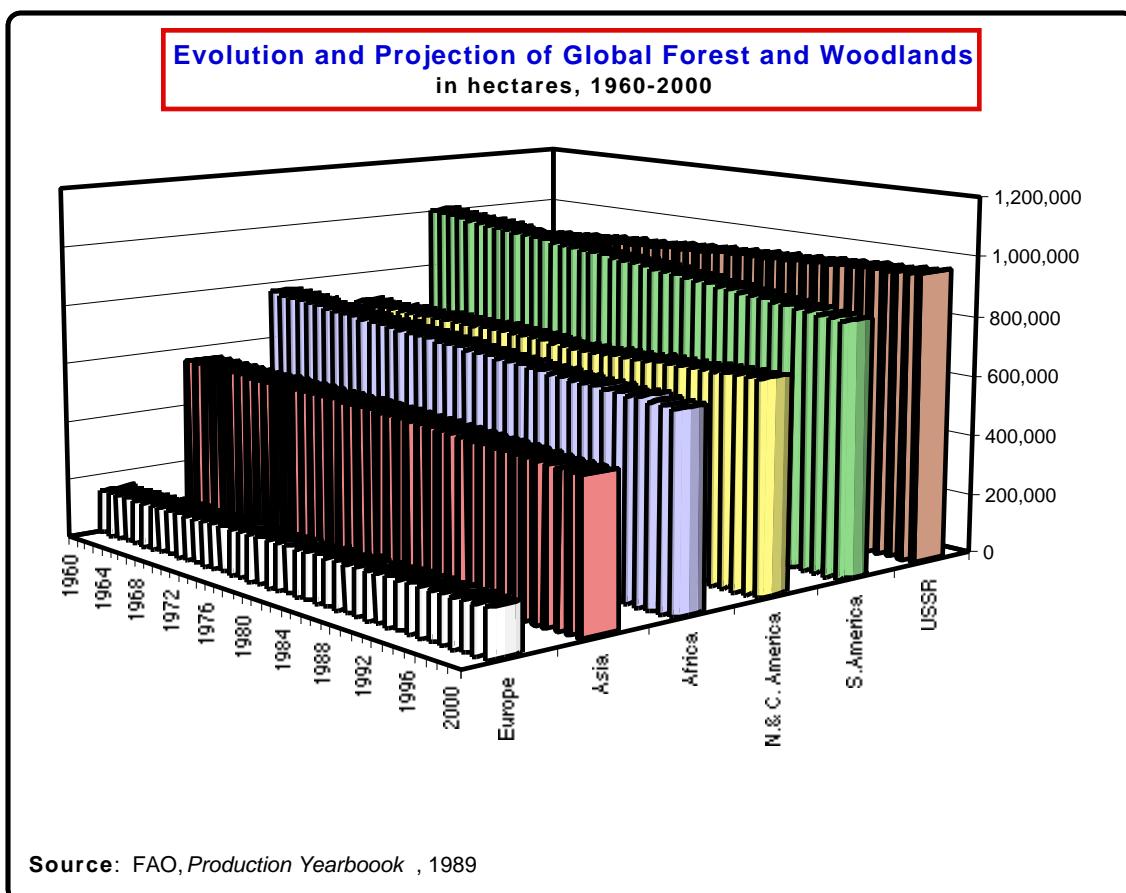
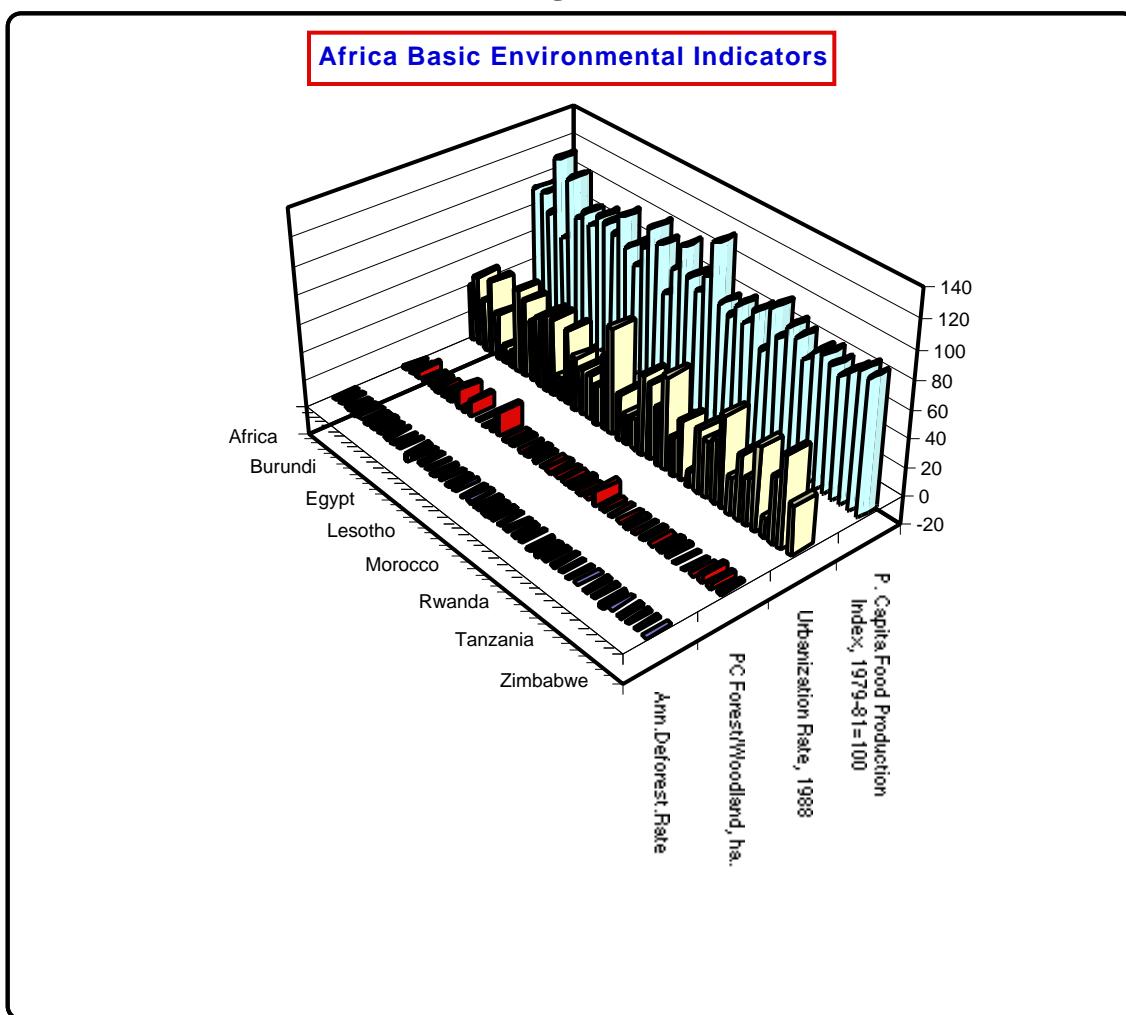


Figure 3



Correlation Matrix:	A	B	C	D
Annual Deforestation Rate (A)	1.0000			
P. Capita Forest & Woodland, ha., 1988 (B)	0.1480	1.0000		
Urbanization Rate, 1988 (C)	0.1701	0.3037	1.0000	
P. Capita Food Production Index, 1979-81=100 (D)	-0.0248	-0.1357	0.3125	1.0000