# Poverty and environmental degradation in Africa: towards sustainable policy for reversing the spiral

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**Abstract:** The nexus of poverty and the environment has led to a situation where the poor are both the victims and perpetrators of environmental damage in Africa. This paper examines the primary issues contributing to the downward spiralling two-way relationship between poverty and environmental degradation in Africa, and then discusses and analyses priority areas of a managed and sustainable policy framework for reversing that spiral. It is argued that Africa entered the 21st Century as the world's worst failure in social, economic, human and technological development. Consequently, poverty is an enduring challenge in the region for which policy formulation and implementation needs to be ratcheted up. Similarly, the approach to arresting environmental degradation in Africa must be given a greater focus within the context of the poverty and environmental damage nexus. This work shows that both local and national environmental concerns have immediate and directly attributable effects primarily on the poor.

**Keywords:** Africa; poverty; environment; sustainable policy.

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## 1 Introduction

Poverty, in all of its manifestations, remains a serious problem in Africa. While the incidence of poverty has fallen in most regions of the world since 1945, in Africa the proportion of people living in poverty has been increasing. This continued prevalence of poverty in Africa keeps its eradication as a central objective of socio-economic development. Also, strategies for reducing poverty in the African region have begun to pay more attention to the relationship between environmental degradation and poverty. This nexus of poverty and environmental damage has led to a situation where the poor are both the victims and perpetrators of environmental damage in Africa. Environmental

degradation contributes to poverty through, among other things, worsened health and by constraining the productivity of those resources upon which the poor rely, while poverty restricts the poor to acting in ways that are damaging to the environment.

This two-way relationship between poverty and environmental degradation in Africa is therefore a significant one. Consequently, caring about the environment and poverty in Africa is not a luxury but a prime necessity. Reversing the downward spiral of this relationship is a key element in the strategy to improve and sustain socio-economic development in Africa and, in particular, to eradicate poverty. This paper examines the primary issues contributing to the downward spiralling two-way relationship between poverty and environmental degradation in Africa, and then discusses and analyses priority areas of a managed policy framework for reversing that spiral. The latter framework analysis also focuses on the critical roles played, or that can be played, by public–private partnerships.

## 2 The poverty and environment nexus in Africa

Poverty in Africa continues to be a major socio-economic problem despite the gains in economic progress in some of those countries since embarking on the process of economic liberalisation or structural adjustment in the early 1980s. Understanding the nature and features of this poverty in Africa is a basic precondition to designing policies to eradicate poverty in the shortest feasible time. Moreover, it is an important reference point for development strategy in Africa and for engaging policy-makers in an informed dialogue on how best to fashion such strategies for their countries and meet the Millennium Development Goals (MDGs).

African poverty has many facets. It is characterised by a lack of purchasing power, rural predominance, exposure to environmental risk, population displacement, insufficient access to social and economic services, rapid urbanisation and few opportunities for formal income generation. The poor in Africa are, however, not a homogenous group. They instead fall into three categories. The first category can be designated as the chronic poor. They are individuals at the margin of society and who constantly suffer from extreme deprivation. The second category can be referred to as the borderline poor. They are individuals or households who are occasionally poor, such as the seasonally unemployed. The final category can be termed the newly poor. They are individuals or households who are the direct victims of the crisis of development policy that has rendered them unemployed. They include retrenched workers and public servants (Hope, 2004).

The key features of Africa's poverty situation include the poor record of economic growth, high inequality in income and asset ownership and inadequate access to basic social services, which results in low levels of human resources development and low agricultural productivity. Although economic performance in many African countries has been improving since the mid-1990s, growth in Africa remains fragile and is inadequate to reverse the growing poverty in the continent. Looking at the historical situation, sub-Saharan Africa is one of the few regions where per capita incomes have fallen over the past 20 years. In 1980, sub-Saharan Africa's GDP per capita was US$770. However, by 2003, GDP per capita fell to US$633 and the region had ended the millennium 5% poorer than it was in 1990 (UNDP, 2002, 2005; World Bank, 2004). With a population growth rate averaging 2.8% per year, the number

of people living in poverty is increasing. It will take sub-Saharan Africa until 2012 just to restore average incomes to their 1980 levels at the growth rates experienced since 2000 (UNDP, 2005).

Undoubtedly, Africa is the poorest region in the world. It has the largest share of people living below US$1 per day. Currently, an average of almost 50% of the population in sub-Saharan Africa lives in absolute poverty compared to 20% in North Africa. About 30% of Africa's population is classified as extremely poor (Hope, 2004). Poverty in Africa is predominantly rural with approximately 59% of the rural population living in poverty. However, urban poverty has also been increasing substantially. The most recent comprehensive data on urban poverty indicate that approximately 43% of the urban population in Africa live in poverty.

The poverty situation in Africa can also be looked at from the point of view of the distribution of income. In many African countries, the disparity in income is quite significant. Compared to other regions of the world, Africa has the second most unequal income distribution next to Latin America. The most frequently used measure of income inequality is the Gini index. It ranges from zero (complete equality) to 100 (complete inequality). The most recent Gini index for sub-Saharan Africa is 72.2 (UNDP, 2005). In some countries – such as South Africa, Namibia, Swaziland, Lesotho, Central African Republic and Sierra Leone, for example – much more recent data indicate that the Gini index exceeds 57.5 with the richest 20% of their population accounting for more than 62% of total income or consumption compared to a share of 2% of income or consumption for the poorest 20% (UNDP, 2005).

### *2.1 Population growth, urbanisation and informal activities*

Poverty in Africa is exacerbated by both population growth and the pattern of human settlements. The population in most African countries doubles within 20 to 30 years. This is a demographic explosion unparalleled in human history (World Bank, 1996). During the past three decades the pattern of human settlements has shifted toward an urban bias. Because cities are the main catalysts of economic growth in Africa, their economic attraction, and the resultant urbanisation, have been major contributors to both urban poverty and environmental degradation. As more and more rural migrants voluntarily attempt to escape from rural poverty, they flood to the cities in search of income-earning opportunities. This phenomenon has been noted by Farvacque-Vitković and Godin (1998, p.v) in the following terms: "The massive migration of people from rural into urban areas is the most spectacular demographic upheaval that Africa has experienced in recent decades". This not only intensifies urbanisation but also contributes in a major way to urban poverty with all of its attendant consequences on the furthering of environmental degradation (Hope and Lekorwe, 1999).

In addition, there has been considerable involuntary migration – national (internal) and international – into the urban centres in Africa. In both scenarios, the contributing factors tend to be civil wars, local conflicts and bad governance; and environmental degradation and resource scarcity resulting from a lack of arable land, deforestation, loss of natural habitats, soil erosion, depletion and pollution of water resources and a cycle of droughts and floods. At the same time, involuntary migrants exaggerate the scale of environmental problems when circumstances push them to move in large numbers simultaneously and therefore force them to compete for natural resources such as

fuelwood, building materials, fresh water and wild foods to ensure their survival. At the beginning of 2005, there were 4.9 million refugees and other displaced persons in Africa (UNHCR, 2005).

Even assuming a future decrease in political breakdown and civil strife, the number of involuntary migrants is likely to continue to expand across the African continent, from ecologically risky and economically fragile areas to more environmentally sound and prosperous areas as was argued by the World Bank (1996). This, in turn, will negatively impact the environment. However, escalating violence and conflict in various countries around Africa, and natural disasters, such as the floods that occurred in Southern Africa during the 2000 rainy season, have a tendency to concentrate the problem and increase the number of refugees and internally displaced persons.

Although it is difficult to derive precise estimates on the scope of environmental damage done by involuntary migrants, some data are beginning to emerge from the few studies available. At the height of the refugee crisis in Tanzania in 1994–1996, for example, a total of 570 sq km of forest was affected, of which 167 sq km was severely deforested. An impact assessment study conducted in Zimbabwe in 1994, when Mozambican refugees had returned to their homelands, showed a reduction of 58% in the woodland cover around the camps (UNHCR, 2001a). In the early 1990s, an estimated 20,000 ha of woodlands were cut each year in Malawi to provide firewood and timber for the various camps hosting Mozambican refugees. In December 1996, refugees from Burundi and Rwanda, housed in the Kagera region in Tanzania, consumed more than 1200 tonnes of firewood each day and a total of 570 sq km of forests were affected, of which 167 sq km were severely deforested (UNHCR, 2001b). The United Nations High Commission for Refugees has estimated that the environmental rehabilitation of refugee camps in Africa alone could cost as much as US$150 million a year (UNHCR, 2001b).

No other region in the world has experienced such high rates of urbanisation with such low economic growth. Currently, the urban population in sub-Saharan Africa is estimated at 36% of the total population, from only 5% in 1900 and 21% in 1975. Africa's current annual urban growth is the highest in the world at close to 4% (UNDP, 2005). By the year 2030, it is projected that 54% of the population of the African continent will live in cities (United Nations, 2004). Urbanisation in Africa presents both benefits and costs. An additional resident may spend money in the city and thereby contribute to the urban economy. However, an extra resident can also drive up the cost of providing public services, increase poverty and add to the avoidable damage of the environment. For example, the majority of the poor tend to live in ecologically fragile zones. They overuse the surrounding lands for, among other things, fuelwood and subsistence and small cash-crop production, further endangering their physical environment, their health and the lives of their children. At the same time, they are disproportionately threatened by the environmental hazards and health risks posed by living in poverty. However, it must be noted here that reducing poverty will often lead to improved environmental quality and vice versa (Hope and Lekorwe, 1999).

The poor are therefore both the perpetrators and victims of environmental damage in Africa. Their poverty status is reinforced by lack of access to jobs in the formal sector. As a result, the bulk of the poor make their living through subsistence activities or informal sector jobs which tend to be more pronounced in the urban areas. Informal sector employment accounts for more than 60% of total employment in Africa. It also accommodated about 75% of the new entrants into the African labour

force between 1980 and 1985. By the year 2020, it is estimated that 95% of African workers will be in the informal sector (Hope, 2002). Some recent survey data indicate that informal sector employment contributes 45% of the total employment in the capital city of Gaborone, Botswana; 80% in both Kinshasa, Democratic Republic of Congo and Cotonou, Benin; 51% in Lilongwe, Malawi; 66% in Douala, Cameroon and 79%, 67% and 50%, respectively, in the urban areas of Ghana, Tanzania and Ethiopia (e.g. Hope, 2002; Hope and Lekorwe, 1999; ILO, 2002).

### *2.2 Survival tactics and access to services*

For the poor in Africa, dealing with environmental problems – of which their poverty status is both the cause and effect – tends to be influenced by short-term considerations (Mink, 1993). Since they are struggling at the edge of subsistence levels, the poor, therefore, are preoccupied with their survival on a day-to-day basis. To ensure their survival, the poor are forced to act in ways which, in turn, degrades the environment and puts them and their households at further risk. The immediate and most pressing environmental problems affecting the poor in Africa are those related to lack of access to safe water and sanitation services; poor management of solid wastes, especially in the urban areas; inadequate access to healthcare; inappropriate land use and housing; degradation of environmentally sensitive lands such as coastal areas and the deteriorating natural resource base and ecological environment.

#### *2.2.1 Water and sanitation access*

One of the most serious threats to the quality of life in Africa is the lack of access to water and sanitation services. By 2002, approximately 58% of the total population of sub-Saharan Africa had access to safe water while an estimated 36% had access to improved sanitation services (UNDP, 2005; WHO and UNICEF, 2004; World Bank, 2002). However, there is considerable variation in access to safe water and sanitation services among the countries in Africa. The population without sustainable access to safe water ranges from 5% in Botswana to 78% in Ethiopia, while for sanitation services the range is from 1% in Mauritius to 94% in Ethiopia (UNDP, 2005; WHO and UNICEF, 2004). Mauritius is also the only African country with safe water coverage to 100% of its population. Groundwater is extremely important in Africa. It is estimated that 75% of the African population uses groundwater as the main source of drinking water supply. However, groundwater accounts for only about 15% of the continent's total renewable water resources (World Water Forum, 2000). The demand for water is expected to grow by at least 3% annually until 2020 as populations increase (UNFPA, 2004).

Among the reasons for the significant lack of access to safe water in many African countries is the deteriorating delivery infrastructure. This, in turn, results in considerable leakage and loss of water, which then leads to erratic water supply and irrational distribution. For example, Kyessi (2005) found that in Dar es Salaam, Tanzania an average of 60% of the water pumped is lost and only 40% finally reaches consumers. In this city, all potable water is supplied by Dar es Salaam Water and Sanitation whose daily total output of 204 million litres per day, to begin with, is less than one-half of the daily demand of 410 litres per day (Kyessi, 2005).

### *2.2.2 Healthcare access*

The lack of access to clean water and sanitation, in turn, threatens the health of the poor. As a matter of fact, the lack of clean water and sanitation is the primary reason for diseases transmitted by faeces are so common in Africa. Various diarrhoeal and other diseases are spread via the faecal-oral route, and this route is most efficiently travelled where water supplies and sanitary conditions are inadequate (Hope and Lekorwe, 1999). It is in these conditions that the poor are forced to live since they are unable to afford a better quality of life. Poverty therefore stands out for its overwhelming role in degrading health. Indeed, the World Health Organization has called poverty the world's biggest killer (WHO, 1995). A research study found that the two biggest causes of death of the poor were respiratory infections and diarrhoeal diseases (Gwatkin and Guillot, 1999). Both are linked to environmental factors – dirty air and dirty water. The study also found that diseases with strong links to environmental factors are highly concentrated among the poor. For example, 60% of all malaria deaths and one-half of all deaths from diarrhoea occur amongst the poorest 20% of the world's population. In contrast, communicable diseases caused only 8% of all deaths among the rich (World Bank, 1999a).

Such a situation provides a major imperative for African governments to implement policies which result in greater access to healthcare services for the poor. However, in the poorest countries, there are still large numbers of the population without access to healthcare services. On average, about one-third of the population of Africa lacks access to healthcare services. Moreover, there are now even greater demands placed on these inadequate healthcare services due to the AIDS epidemic currently sweeping across most of the African continent. Estimates done by UNAIDS (2006) show that, at the end of 2005, 24.5 million people, out of the world's total of 38.6 million people living with HIV/AIDS, were in sub-Saharan Africa. This is equivalent to 63% of the distribution of the HIV/AIDS infection around the world. In some of the worst hit countries, such as those in Southern Africa, the prevalence rate is as high as 33% (UNAIDS, 2006).

The AIDS epidemic has been particularly devastating in sub-Saharan Africa and is undermining progress towards the MDGs, particularly those related to poverty reduction. In several of the countries, 50% to 80% of hospital beds are occupied by people with HIV/AIDS (Hope, 2001). Life expectancy at birth, which had risen steadily over the past three decades, is now expected to fall to below 40 years in many countries because of HIV/AIDS. Had AIDS not been in the picture, many Africans could have expected to live to the age of 70 and beyond. Similarly, infant mortality rates will increase as a large proportion of babies born to HIV-positive mothers will be infected through mother-to-child transmission.

Despite the fact that HIV strikes both the poor and the wealthy in almost similar proportion, AIDS is a disease of poverty (Hope, 2001). According to the World Bank (1999a), AIDS is a disease of poverty in many ways. Firstly, in the sense that most people with HIV/AIDS are poor. While infection rates are declining in the developed world, they are rising in most poor countries and particularly so in Africa. About 95% of HIV-infected Africans live in poverty (Hope, 2002). Secondly, AIDS deepens and spreads poverty. Poor households are more adversely affected by an AIDS death of a prime-age adult than other households because they have fewer assets to draw on to cope with medical bills and the loss of income and services that a prime-age adult typically provides (Salinas and Haacker, 2006). Finally, AIDS is also likely to increase poverty through the rise in the number of children who lose one or both parents to the

disease. The literature has demonstrated that orphans tend to have much lower enrolment rates and are more likely to be malnourished than non-orphans. The lack of schooling combined with malnutrition will make it much more difficult for orphans to escape poverty (Hope, 2005; World Bank, 1999a).

### *2.2.3 Solid waste disposal services*

Some African countries, particularly in their cities, can also be unhealthy places to live due to their lack of capacity to collect and properly dispose of sewage and solid waste. Solid waste is a sizable and growing problem in Africa that is primarily influenced by urbanisation. The concentration of waste in many African cities overwhelms the assimilative capacity of natural ecosystems within city limits and beyond, creating problems for surrounding neighbourhoods and water use (Hope and Lekorwe, 1999). To be sure, solid waste often creates one of the most visible and foul-smelling environmental problems in Africa due to its sheer magnitude, indiscriminate disposal, decomposition and lack of effective regulation of industrial sites.

Generally, most African countries are unable to keep pace with the growing volume of waste generated in their urban areas as a result of urbanisation. For example, by 1994, Gaborone, the capital city of Botswana, generated almost 90 tonnes of solid waste each day from a population of 180,000 compared to the generation of 30–40 tonnes per day in 1985–1989 when the population was approximately 60,000. In 1988, the population of Dar es Salaam, the capital of Tanzania, was approximately 1.5 million people and they generated 1040–1340 tonnes of waste per day. However, only about 180 tonnes of that amount was collected each day by the city council's garbage trucks operating on a small number of accessible streets (Beede and Bloom, 1995). Alexandria, the second largest city in Egypt, generates around 1700 tonnes of domestic solid waste a day and, with nearly 40% of Egypt's industry, the city also generates nearly 800 tonnes of industrial waste per day (UNDP, 1998).

## *2.3 Land use and housing access*

The problem of solid waste disposal and collection in Africa is also considerably influenced by the pattern and nature of land use and housing in those countries. The poor, and especially the urban poor, have converted land and established housing settlements in ecologically fragile zones. Approximately 50% of the poor in Africa live on marginal lands of low productivity and high susceptibility to degradation (GFHR, 1999). In Dar es Salaam, Tanzania, for example, squatter housing accounts for 70% of the total housing stock (Kombe, 2005). These land settlements also tend to quickly deteriorate into further environmental hazards since they lack basic services such as water, sanitation and electricity, for example. This, in turn, further endangers the health of the poor. Moreover, the housing in which the poor live tends to be substandard and overcrowded which, in turn, leads to rapidly deteriorating living conditions. This chaos in the housing situation for the poor in Africa has been attributed to the inability of governments to come to grips with the land management issue and this therefore makes it impossible, or very difficult, to provide basic services such as passable roads, storm sewers, drinking water supply and so on (Farvacque-Vitković and Godin, 1998).

### *2.4 Influence of coastal zones*

Another important factor contributing to the nexus of poverty and the environment in Africa is the changing nature of the coastal zones. A coastal zone is a dynamic area encompassing shoreline environments as well as adjacent coastal and marine waters. The characteristics of a coastal zone are:

1 a dynamic area with frequently changing biological, chemical and geological attributes
2 it includes highly productive and biological diverse ecosystems that offer crucial nursery habitats for many marine species
3 it contains certain features such as coral reefs, mangrove forests and beach and dune systems which serve as critical natural defences against storms, flooding and erosion
4 its ecosystems may act to moderate the impacts of pollution originating from land, such as sediments and human waste
5 its coasts attract vast human settlements due to its proximity to the ocean's living and non-living resources, marine transportation and recreation (World Bank, 1995).

Apart from the island states (100% coastal area), African coastal zones range from as little as 2% of country area in Sudan to 82% in Djibouti with a corresponding population, as a percentage of country population, of 2% and 93%, respectively (World Bank, 1995). These coastal areas and their natural resources are under increasing threat from unmanaged human activities such as population growth, shoreline construction, pollution, habitat destruction, overfishing and other overexploitation of resources. These activities, in turn, lead to such environmental impacts as deteriorating water quality and sanitation in the urban areas, coastal erosion, degradation of marine resources and destructive fishing methods, among others.

In African rural coastal areas, the major economic activities of the poor are fishing in the nearshore waters and farming of coastal lowlands to supply seafood and agricultural products for the inhabitants and urban centres. In the urban coastal areas, high population densities, high rates of fertility and mounting in-migration from the rural areas have resulted in the continent as a whole being caught up in a vortex of urban coastal overcrowding. The coastal corridor along the Gulf of Guinea, for example, is considered most likely to reach saturation – exceeding the area's environmental carrying capacity – long before 2025 if current growth rates continue (World Bank, 1995). This rapid urbanisation and poverty is resulting in

> "exploitative use of open access and common property resources while competing commercial interests in the fisheries and forestry sectors have taken advantage of poorly managed and monitored licensing regimes to mine resources to the point of depletion" (World Bank, 1995, p.19).

The consequence in both the rural and urban coastal areas is extensive environmental degradation which, ultimately, hurts the poor the most.

### *2.5 Natural resource depletion*

The final issue of concern in this section pertains to the deteriorating natural resource base and ecological environment. Cleaver and Schreiber (1994) have amply demonstrated that in much of sub-Saharan Africa the natural resource base and

ecological environment is deteriorating primarily as a result of deforestation, desertification, soil erosion and water resource depletion. This state of affairs results from both natural elements as well as the subsistence activities of the poor. In addition, excessive harvesting, poaching and illegal trade also takes a heavy and irreversible toll on animal and plant life. Excessive foresting, for example, destroys woodlands and the poor then have to walk much farther to obtain fuelwood, construction materials and other forest products. Desertification already costs Africa US$9 billion per year (UNDP, 1998).

Overall, the convergence of population growth, poverty, the rising demand for lumber and fuelwood and the conversion of forests to agriculture in Africa are expected to put increasing pressure on the continent's forests in the next few decades. The result is likely to be a considerable loss in forest area and quality which will further destroy the environment and way of life of the poor. It is estimated that 77% of frontier forest in Africa is currently under moderate to high threat from logging; mining, road-building and other infrastructure projects; agricultural clearing; excessive vegetation removal and other activities such as over-hunting and plantation establishment (WRI et al., 1998). One study indicates that, during 1990–1995, Africa lost its forest cover at an annual rate of 0.7% and that 90% of the population depends on firewood and other biomass as sources of energy (UNFPA, 2001).

As the environmental problems of deforestation, vegetative degradation, desertification, soil erosion and water resource depletion proceed in Africa, among other things, there will be declines in such factors as the livestock carrying capacity of pastures and rangelands, crop yields, the availability of fuelwood and other forest products and water that can be consumed by both humans and livestock. Such continuing decline of environmental resources will have greater impacts on the poor given their much greater dependence on those resources for their survival and livelihoods.

## 3 Towards sustainable policy for reversing the spiral

Poverty and environmental degradation in Africa have been shown to have a two-way relationship. Consequently, any policy framework for reversing the spiral must contain elements that address the poverty and environment nexus as a comprehensive whole. Indeed, the policy framework must also aim to ultimately meet the targets of the MDGs agreed upon by the world's leaders in 2000. Those MDGs include:

1 halving, by 2015, the proportion of people living in poverty

2 halting and beginning to reverse, by 2015, the spread of HIV/AIDS and the incidence of malaria and other major diseases

3 halving, by 2015, the proportion of people who suffer from hunger

4 integrating the principles of sustainable development into country policies and programmes and reversing the loss of environmental resources

5 halving, by 2015, the proportion of people without sustainable access to safe drinking water

6 achieving, by 2020, a significant improvement in the lives of squatters.

In this section, the discussion and analysis focuses on seven priority areas for policy implementation.

### *3.1 Water and sanitation*

Currently, very large number of people in Africa have no access to safe drinking water and sanitation services. Their lack of overall access is at the heart of the poverty trap and it is they who are most affected by increasing water degradation and scarcity (Sharma et al., 1996). The poor, often, pays the most for water services and suffers the most in terms of health and economic opportunity. As clean water supplies have diminished, competition for supply has been growing, usually between expanding urban areas and rural dwellers, further disadvantaging the poor.

Water has therefore become a commodity of strategic importance in most African countries due to increasing demands, rising costs and the rapidly diminishing supplies. Better management of water resources is the key to mitigating water scarcities in the future and avoiding further damage to aquatic ecosystems. From a long-term perspective, the water access problem must be addressed through policy choices that reallocate water to the most economically and socially beneficial uses (WRI et al., 1998). Developing sound water resource management programs will be crucial to Africa's poverty reduction, economic growth, food security and maintenance of natural systems (Sharma et al., 1996).

In that regard, *The Africa Water Vision for 2025* was developed by the World Water Forum 2000 of the World Water Council. It is a vision of an Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation and the environment. Its framework of action encompasses:

1 the strengthening of the governance of water resources

2 improving water wisdom

3 meeting urgent water needs

4 strengthening the financial base for the desired water future (World Water Forum, 2000).

In addition, the African Ministerial Conference on Water (AMCOW) has been created 'to share ideas and lessons and to provide mutual support and active direction' (WSP, 2002, p.2). AMCOW's role complements the goals and organisational framework of the New Partnership for Africa's Development (NEPAD) – a socio-economic vision and strategic framework for economic recovery and sustainable development that was adopted by African leaders at their Summit in 2001. The objectives of the NEPAD include the eradication of poverty and placing African countries, both individually and collectively, on a path of sustainable growth and development (Hope, 2002).

However, given the pervasiveness of poverty in Africa, it is unrealistic to assume that the poor can be comprehensively provided with access to water and sanitation services in an affordable manner. Nonetheless, the aim ought to be to increase access to water to as many poor households as possible through communal standpipes and, for sanitation, through the erection of ventilated pit latrines (developed in Zimbabwe) and/or condominial sewers (Hope and Lekorwe, 1999). This approach has been found to be successful in increasing access during the 1990s in such projects as the Mali Rural Water Supply Project and the Lesotho Sanitation Program (Sharma et al., 1996).

Many African countries have also been facing the challenges posed by growing water scarcity primarily by employing two strategies:

1 supply management, which involves locating, developing and exploiting new sources of water for irrigation, households, livestock and industrial use in a cost effective manner

2 a scaling up of both rural and urban demand-responsive approaches into national policies and programmes.

In this regard, a number of national, regional and global initiatives have been undertaken involving a mix of stakeholders and partners.

Mega projects in Lesotho, for example, the Lesotho Highlands Water Project (LHWP) which is a complex inter-basin water transfer scheme that would, among other things, export water from the Senqu/Orange River in Lesotho to the water-short areas of South Africa. The project, planned in five phases, will comprise a total transfer of up to 70 cubic metres per second (World Bank, 1999b). Other regional cooperation efforts are embodied in such frameworks as the Nile Basin Action Plan, developed in 1994 by The Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE), to promote a comprehensive approach for water management on a river basin level; and the Protocol on Shared Water Course Systems in the Southern African Development Community (SADC) Region signed in 1995 by the SADC states. Among other things, the Protocol affirms the need for equitable use of shared waters in an environmentally sustainable manner (Hope and Lekorwe, 1999).

Private sector initiatives or semi-private sector approaches are best exemplified by the examples of Botswana and South Africa, respectively. In Botswana, there is a parastatal – the Water Utilities Corporation (WUC) – which operates under strict business principles supplying the country with a safe supply of water. The WUC charges commercially-oriented tariffs appropriate for the urban conditions in the country and tariffs are increased when necessary. There are relatively high monthly tariffs but the progressive rate structure does not seem to exceed the ability-to-pay of the poorest customers (Hope, 2002). Currently, the WUC is managing a massive project (North-South Water Carrier Project) that moves water from a northern dam along a 360 km pipeline to the villages and towns in the southern part of the country.

South Africa has also engaged in private sector partnerships to serve the poor. Between 1994 (when the African National Congress assumed power) and April 2003, the country's Community Water Supply and Sanitation Programme "provided access to 8 million people at an average cost of US$80 per person. Officials estimate that the remaining 6 million people will have access by 2008" (Postel and Vickers, 2004, p.51). The poorest residents are provided with life-line quantities free of charge. In moving toward increasing access to water services, municipalities in South Africa have been engaging in partnerships with private sector participation. In March 1999, for example, Durban Metro in the Province of KwaZulu-Natal entered into an agreement with several partners to undertake a project to provide improved services to previously underprivileged communities in the Durban area. One of the partners is Vivendi Water, a private sector water company in South Africa.

Many international organisations have also been contributing to the efforts to improve and sustain access to safe drinking water and sanitation services in Africa. Perhaps the most comprehensive of these efforts can be found in the role played by the Water and Sanitation Program (WSP) established by the World Bank and the United

Nations Development Programme (UNDP). Since 1978 the WSP has been working to help poor people gain sustained access to improved water and sanitation. The WSP began as a set of separate projects supported by UNDP and implemented by the World Bank to test and promote low-cost appropriate technologies. Over the years, it has evolved into a global partnership active in more than 25 countries, with the majority of those being in Africa, and financially supported by multilateral and bilateral development agencies (WSP, 1999).

The WSP works with partners in the field to find and communicate innovative solutions to the problems faced by poor communities. This is accomplished through three mutually supporting objectives:

1 generating and communicating knowledge

2 strengthening sector policies

3 improving investment effectiveness.

One of the successful examples of the WSP's work in Africa can be found in its activities in the early 1990s in the City of Ouagadougou, Burkina Faso which led to the development of a strategy for waste water and excreta disposal. The government adopted the strategy in 1994 which led to two projects applying the basic characteristics of 'strategic sanitation' (WSP, 1999). Strategic sanitation is a demand-based approach offering an array of technological solutions and services and providing users with a choice of low-cost yet adaptable options. The approach included autonomous sanitation facilities, the promotion of appropriate technology and the training of local artisans (WSP, 1999). In addition, public–private partnerships are encouraged and facilitated.

### *3.2 Solid waste management*

In Africa, and other developing regions, solid waste management has historically enjoyed much lower priority than other services that are considered essential such as water, sanitation and electricity. However, the management of solid waste in Africa now takes on great importance due to the fact that both the growth in solid waste and its arbitrary disposal have been creating serious threats to local environmental quality and public health (Beede and Bloom, 1995). In the case of the latter, the poor are most affected. Improved solid waste services can yield significant benefits by safeguarding health, protecting the urban environment and improving overall urban productivity.

The traditional approach to solid waste management, where municipal governments are responsible for almost all aspects of collection and disposal of solid wastes has not been very successful in Africa. Consequently, a new bold approach, encompassing public–private investment partnerships, is what is required. Several countries are already beginning to move in this direction, including the preparation of guidelines, regulations and legislation pertaining to such things as landfills and their management. Other countries, such as Uganda and Ghana, for example, have received assistance from the World Bank to build properly sited, designed and constructed landfills in their major cities (Johannessen and Boyer, 1999).

All of the empirical studies of private sector participation in solid waste management have demonstrated that the sector is much more efficient in this service delivery than municipal governments (Beede and Bloom, 1995). It is this efficiency, along with environmental concerns and the need to extend services to the poor that is propelling

many municipalities in South Africa, for example, to move in this direction. The primary challenges of the public–private partnership approach are regarded by Dohrmann and Aiello (1999) as being:

1 regulatory
2 limited resources
3 institutional
4 technical.

South Africa has developed an innovative solid waste management strategy, through the establishment of a Municipal Infrastructure Investment Unit (MIIU) to use donor and other funding in support of private sector involvement, along with other forms of municipal service partnerships, in municipal service provision. This approach needs to be replicated in other African countries and perhaps used as the mechanism to emulate the novel method in use in the City of Alexandria, Egypt to deal with its solid waste – turning it into organic fertiliser or compost. This takes care of the solid waste itself and in the process produces something useful for agriculture.

### *3.3 Healthcare*

The most pressing environmental problems in Africa today, in terms of deaths and illness, are those associated with poor households. By targeting policies that help to reduce environmental threats that contribute both to ill health and poverty, it is possible to produce good health long before income growth could do so on its own (WRI et al., 1998). Improving access to healthcare services must, therefore, be seen also in the context of client affordability.

Africa continues to invest too few resources in healthcare services. The most recent comparative data (2000) shows that Africa was second only to East Asia with respect to the lowest level of public expenditure on health as a proportion of GDP (2.5% and 1.8%), respectively (World Bank, 2004). Moreover, other social, economic and political factors have been contributing to the weak state of health services in the continent. For example, political instability and economic considerations have acted as catalysts or push factors in the flight of many African healthcare professionals to the industrialised countries, undermining the public sector's capacity to respond to health needs. Between 1985 and 1990 alone, Africa lost 60,000 professionals and has been losing an average of 20,000 annually ever since (United Nations, 2000). A large number of these individuals are physicians and nurses.

The challenge now facing Africa is to recognise the importance of access to healthcare services as both a basic human right and a key factor in progress on social development. This means that the healthcare budget as a proportion of both the overall budget and GDP must be increased. In addition, the delivery of healthcare services must pay greater attention to meeting the needs of the poor by incorporating into public health programmes prevention measures capable of reducing the environmental health risks faced by those poor and by providing basic healthcare as the primary strategy of 'health for all' in the society.

Preventive measures include basic hygiene education; information, communication and education campaigns on HIV/AIDS and other Sexually Transmitted Diseases (STDs) particularly targeting high-risk groups and the monitoring of children's nutritional and growth status. Basic healthcare entails a cost-effective package of services designed to

deal with the most common health problems in a decentralised manner both in terms of delivery and geographical and social distribution. That means removing the high concentration of healthcare activities in the cities and spreading them out on a district basis to more rural areas. The rural poor in particular need greater access to basic healthcare through clinics and other health posts.

The basic healthcare package should give priority to essential clinical services and should include: prenatal and delivery care; family planning; vaccinations; treatment of malaria, tuberculosis, STDs and actual bacterial infections; diagnostic and referral services for more serious health problems and essential drugs. However, given the economic circumstances of most of the countries in Africa, to meet the foregoing obligations they would require assistance from beyond the public sector. Public–private initiatives would therefore have to be given greater prominence.

In this regard, a number of such successful initiatives have emerged, particularly involving NGOs and donor organisations. Uganda's success in controlling the spread of HIV/AIDS is linked, in part, to the country's partnership with several NGOs and international organisations such as UNAIDS. In 2000, a private sector firm – Bristol-Myers Squibb – donated some US$18.2 million to a research collaborative effort between a principal government hospital in Botswana and the Harvard AIDS Institute in the fight against HIV/AIDS in Botswana and beyond. The Bill and Melinda Gates Foundation has also been very active in providing financial resources in the fight against AIDS in Africa. Former USA President Bill Clinton, through his Foundation, has negotiated significantly lower prices for antiretroviral and other AIDS drugs for African countries. These types of institutional pluralism need to be expanded throughout the African health sector.

### *3.4 Land use management and housing*

Land is a basic but limited resource and a very important element in national development. In urban areas, land is also a very scarce commodity. Underlying virtually all urban environmental problems in Africa is the issue of land use and housing, from the lack of affordable housing, to overcrowding, to inner cities marred by abandoned buildings and informal settlements. Indeed, effective urban land management and housing policies are crucial for mitigating the impacts of urbanisation on environmentally fragile land and other resources (Bartone et al., 1994; Hope and Lekorwe, 1999).

One of the fundamental problems giving rise to inappropriate land use, poor housing conditions and the ensuing environmental problems in Africa is the lack of accurate and current information on land use and housing conditions. Such current and accurate information is required for planning and decision-making purposes and also for the evaluation of policies and programs. Most of the municipal governments in Africa lack established systems for generating the information needed to support land use management and housing policies. As a consequence, they have not been able to acquire a proper understanding of the nature of their land use and housing problem to allow them to make proper interventions. In many instances, the result has been the emergence of different types of problems such as inequitable land distribution and an increase in slum and squatter settlement populations and areas (Garba and Al-Mubaiyedh, 1999).

In African urban centres, addressing the problem of land use and housing for the poor needs to be focused on two key areas:

1 periodic assessment to generate information to support land use management
2 urban grading.

Generating information to support land use management presupposes that African municipalities and governments want to improve, or even begin, their decision-making with respect to the four basic issues of public land management intervention. These are ownership of land, use of land, marketing of land and taxation of land. Urban upgrading, on the other hand, is primarily concerned with improving the health, environmental, social and economic conditions in the community, with emphasis on the poor and encouraging the residents to improve their own houses.

Following the approach of Garba and Al-Mubaiyedh (1999), the periodic land management assessment framework is comprised of four steps. The first is to undertake a preliminary scan of the given urban area to identify trends in land demand and land use and also to identify contextual influences on land management. The preliminary scan will also allow an evaluation of the state of land management. The second step is the assessment of the policy and strategy formulation framework. The aim at this stage is to assess the framework for the availability of appropriate and coordinated policy guidance for all aspects of land management, assess the availability of information to support policy and strategy formulation and evaluate the responsiveness of the system to feedback. The third step is the assessment of the land management inter-organisational system. The objective at this stage is to determine both the individual land management institutions and the inter-organisational framework within which they operate. The final step of the assessment framework reviews the behaviours and practices of the land management institutions as they undertake the actual process of intervention and control. The aim here is to identify procedures, actions and practices of the institutions in the enforcement of intervention and control measures, and to assess these on the basis of appropriateness, efficiency and effectiveness in contributing to the achievement of community objectives (Garba and Al-Mubaiyedh, 1999).

With respect to urban upgrading, African municipalities and national governments need to concentrate on squatter/slum upgrading to improve the living conditions of the urban poor by providing basic infrastructure and service delivery, granting security of tenure and bettering the environmental circumstances where the poor live. An important aspect of this element is the provision of housing for the poor through sites and services programmes (Kessides, 1997). Understandably, the public sector in Africa is not in a position to mobilise the financial resources required to deal with the problem of housing for the poor. Consequently, municipalities and national governments would need to create an enabling environment that encourages public–private cooperation to facilitate community-based, commercial and self-help solutions.

### *3.5 Coastal zone management*

The coastal zone in general consists of the interface between land and sea where marine space and resources are just as important as terrestrial ones. Uncontrolled multiplication of activities in African coastal zones has led to environmental degradation and depletion of natural resources. To restore the sustainable development of these coastal zones requires the affected countries to pursue a plan of Integrated Coastal Zone Management (ICZM).

ICZM emphasises the integration of systems, coordination of policies and institutions, management concerns, development objectives and stakeholder interests across the different landscapes of the coastal zone. Its objective is to optimise the net benefit flows from coastal resources to individuals and society by reducing user conflicts, mitigating adverse development impacts and enhancing the productivity of coastal ecosystems (World Bank, 1995). It offers considerable opportunities for public–private partnerships.

In this regard, some international NGOs have been actively involved in promoting their identification of marine and coastal systems as global conservation priorities. In Mozambique, for example, the World Wildlife Fund (WWF) in association with two South African NGOs (The Southern African Nature Foundation and the Endangered Wildlife Trust) have been involved in promoting sustainable resource use at the community level in the Bazaruto Archipelago, a system of prime coral atolls and sandy beaches with high levels of biodiversity and significant tourist potential (World Bank, 1995). Similarly, the International Union for the Conservation of Nature (IUCN) has been conducting marine conservation programmes in such countries as Kenya, Tanzania and Mozambique. The IUCN has also drafted mangrove utilisation guidelines for the African Development Bank and is actively involved in coastal zone management projects in Southern Africa. With South Africa having taken the lead, a number of African countries are preparing comprehensive coastal management policies. In 1997, Eastern African countries also created a Secretariat for Eastern African Coastal Area Management (SEACAM) to intensify efforts at managing their coastal zones for sustainability.

### *3.6 Environmental conservation*

African decision-makers, assisted by national and international experts, are increasingly acknowledging that environmental degradation is a major factor constraining socio-economic development in the Africa region, and that reversing this trend is an essential ingredient in any poverty alleviation policy (World Bank, 1999b). Consequently, many African countries are beginning to take action to mainstream the environment in the context of both sustainable development and poverty reduction.

Most countries have opted to implement their strategies through National Environmental Action Plans (NEAPs) or equivalents. The overall objective of NEAPs is to elicit an environmental policy and investment strategy for a country. NEAPs or equivalents describe a country's environmental problems, identify their principal causes and formulate policies and concrete actions to deal with them. A country's government is responsible for preparing and implementing these plans with the financial and technical support of NGOs and bilateral and multilateral donors (World Bank, 1996). NEAPs tend to form the basis through which bilateral and multilateral assistance are channelled. However, many countries that have completed NEAPs have been unable to implement them due to political and/or economic crises – Rwanda, Burundi, Democratic Republic of Congo and Sierra Leone, for example. In other cases, the lack of political commitment has affected the effective implementation of NEAP policies and programmes as is the case in Kenya, Tanzania and Cameroon, for example.

One of the praiseworthy aspects of NEAPs is their recognition of the importance of decentralising environmental management and their encouragement of the development of Local Environmental Action Plans (LEAPs) for rapid impact at the grassroots level

through public–private partnerships. Many local authorities in Africa have prepared their own LEAPs usually with the assistance of a regional Managing Environment Locally in Sub-Saharan Africa (MELISSA) initiative. The MELISSA Programme is cofinanced by the World Bank, the European Union, Sweden and Norway. It was launched in 1996 with the goal of supporting and facilitating the improvement of the local environment through partnership development and knowledge management. It assisted local authorities and communities to prepare, implement and monitor their own LEAP. Its principle of partnership development implies that the Program collaborates with national governments, academic and training institutions, non-governmental and community-based organisations, international support organisations and the private sector. Its three main themes were:

1 local environmental governance

2 integrated environmental management strategies

3 participatory environmental evaluation and monitoring.

Local governance or the decentralisation of government authority, is on the increase in many countries in Africa, both in the urban and rural sphere. The management of the environment has, accordingly, become a dual responsibility of both central and local governments. However, although African local authorities have the imperative to develop appropriate environmental frameworks to ensure environmental sustainability at the local level, their initiatives can only be sustained where there is the commitment and involvement of the various levels of government, the private sector and civil society. The need for public–private partnerships is no longer suspect and questionable in Africa. However, for such partnerships to be successful over the long-term, they must be based on local community demands and needs. Even more importantly, they must maintain a focus on the poor.

One approach which focuses on the poor, as well as community demands and needs, is Community-Based Natural Resource Management (CBNRM) as practised in Southern Africa. CBNRM involves the management of land and natural resources such as pastures, forests, fish, wildlife and water by groups of rural people through their local institutions. As such, it is seen and regarded as an established and evolving African practice through the empowerment of local communities. It facilitates environmental management and conservation in rural communities in Southern Africa by giving these communities ownership of the natural resources as an incentive, in turn, for them to manage and conserve these resources. This approach to conservation should be adopted throughout the African continent since it offers the poor the best opportunity to participate in the conservation of resources on which they also depend for survival.

### *3.7 Employment generation and social protection*

The poor in Africa would benefit the most from growth activities that allow them to work their way out of poverty. Economic growth is the most powerful weapon in the fight for higher living standards and a better quality of life including social protection. Growth creates and expands employment opportunities while providing the economic wherewithal for governments to provide social protection for the poor. In most African countries, those who are employed in the formal sector are usually covered, to varying

degrees, with such social safety net elements as health insurance, life insurance, pension/gratuity and unemployment insurance. The poor, on the other hand, tend to be confined to employment in the informal sector where there are no such social safety nets.

The poor themselves in Africa and the rest of the developing world as well, have also confirmed that high on their priority list of means for moving out of poverty is access to employment and social protection. In a World Bank project on 'Consultations With the Poor', the poor said that what they wanted was the dignity of work, with a stable and predictable income based on a living wage, fair treatment, a place to live and not handouts (Narayan et al., 1999). However, the poverty status of the poor is also a function of their lack of educational attainments and this, in turn, confines them to seeking or creating employment in the informal sector.

As pointed out earlier, the informal sector accounts for more than 60% of total employment in Africa and by 2020 it is projected to account for 95%. It is a vibrant sector providing livelihoods for the poor through an enormously wide range of activities including small-time vending, odd jobs, making crafts and home-based or other microenterprises. It relieves unemployment pressures that otherwise would create serious political and social problems and offers the best chance for the poor to work their way out of poverty and not rely on handouts. It also contributes in the range of 20–42% of GDP in most African countries and women account for 60% of the activities (Hope, 2002; United Nations, 2005). By the year 2020, it is estimated that the informal sector in Africa will grow in its contribution to GDP to 66% (Hope, 2002).

Given the potential and importance of the informal sector as a source of employment and growth in African economies, it cannot be ignored. Rather, by virtue of its dynamism, it does have a crucial role to play in poverty eradication policies and in Africa's economic recovery and development. This has now come to be recognised by national governments, international organisations and non-governmental organisations. The United Nations Economic Commission for Africa (UNECA), for example, has included "creating an enabling environment for enhancing the effectiveness of the informal sector, developing market networks between the formal and informal sectors and the progressive integration of the informal sector into the formal sector" as part of a comprehensive approach to poverty reduction in Africa (UNECA, 1994, p.16).

However, African governments need to do more in support of expanding and integrating the informal sector into their economies. What was formerly known as the United Nations Office of the Special Coordinator for Africa and the Least Developed Countries eloquently addressed a number of actions that need to be taken in that regard (UNOSCAL, 1995). Nonetheless, from the point of view of this author, the most critical action that needs to be taken is that of enhancing access to credit for the poor to finance their small-scale enterprises and agricultural activities. At the moment, too many of the poor are dependent on microlenders who, unfortunately, tend to have reputations as loan sharks. Women in Malawi, for example, have complained that while they appreciated small loans as being helpful in making them fairly better off, the terms and conditions force them into psychological slavery (Narayan et al., 1999). And, despite the success of informal finance networks (such as rotating savings and credit associations) in Africa, large numbers of poor people are still unable to access credit to engage in income-generating activities.

What is recommended is that those African countries that have not already done so should follow the lead of Botswana and establish a national fund that will provide loans to Small, Medium and Micro Enterprises (SMMEs) that have the potential to generate employment. Through the creation of employment, the poor will be able to work their way out of poverty and away from the environmental problems with which they are confronted since jobs lead to income which, in turn, leads to economic independence, greater self-reliance and improved standard of living choices.

With respect to social protection, given that the majority of the poor work in the informal sector, they should be specifically targeted in social safety net schemes. African governments in partnership with NGOs should attempt to emulate the innovative microinsurance scheme that has been put in place by the Self-Employed Women's Association (SEWA) in India. The SEWA has developed the largest and most comprehensive contributory social security scheme in India at this point in time and offers a practical model of providing needed life, health and asset insurance to those working in the informal sector.

The SEWA is a registered association of members who are self-employed, hawkers, vendors, home-based workers and labourers who are covered by an integrated social security programme which includes health insurance, life insurance (death and disability) and asset insurance (loss or damage to house or work equipment) (Narayan et al., 1999). The programme works through risk pooling by members who already know and can monitor each other. The scheme is financed through the interest paid on a grant provided by a donor agency, direct contributions by workers and through a scheme subsidised by the Indian government involving the state-owned Life Insurance Corporation.

## 4 Conclusion

As predicted by Chimere-Dan (1999), Africa entered the 21st Century as the world's worst failure in social, economic, human and technological development. Consequently, poverty is an enduring challenge in the region for which policy formulation and implementation needs to be ratcheted up and greater emphasis placed on public–private partnerships to provide technical and financial capacity for effective outcomes and meeting the goals of the MDGs.

Similarly, the approach to arresting environmental degradation in Africa must be given a greater focus within the context of the poverty and environmental damage nexus. This work has demonstrated that both local and national environmental concerns have immediate and directly attributable effects primarily on the poor. Dirty water causes disease and inadequate waste disposal makes people sick, for example. They affect not only human health, but people's livelihoods and survival also. The rural poor are most affected because of the substantial quantitative contribution that environmental resources make to their households for subsistence (Cavendish, 1999). Reversing this downward spiral must therefore be given greater prominence in African development policy in these early years of this 21st Century.

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