

CHAPTER 6

POPULATION, POVERTY AND ENVIRONMENT IN AFRICA

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Introduction

The African continent consists of four sub-regions, namely Eastern, Middle (also known as Central), Northern and Southern, which vary considerably in demographic, economic, developmental and environmental profiles. Generally, Northern Africa is excluded from analyses of Africa because of its geographic and socio-cultural affinities with the Middle East, thereby restricting focus to Sub-Sahara Africa which characterises the African region in many respects. In keeping with this tradition, This Chapter analyses the region's *population, poverty and environment as entities in themselves and in terms of their interrelationships in ensuring or undermining sustainable development.*

While the next section explains the setting of our analysis, the rest of the sections highlight population, poverty and environment, followed by concluding remarks.

General

Sub-Saharan Africa comprises 50 countries which are distributed as follows: 19 in Eastern Africa, 9 in Middle Africa, 5 in Southern Africa and 17 in Western Africa. These countries differ considerably in size, population, poverty, extent and levels, and environmental conditions. Moreover, some of the countries are sometimes classified or do consider themselves as part of different sub-regions from which they are classified. The best examples are the three countries in the Southern and Eastern Africa - Mozambique, Zambia and Zimbabwe - which, according to a variety of statistics, are part of Southern Africa. Another confusing issue is regional economic integration which places these countries together with Malawi, Mauritius, Tanzania and Angola within the *Southern African Development Community (SADC)*; all the Eastern African countries and Zaire within the *Common Market for Eastern and Southern Africa (COMESA)*; Anglophone and Francophone as either part of the *Economic Community of West African States (ECOWAS)* or member states of *Communate` de l` Afrique* - of the West African Economic Community (CEAO); the *Union Duaniere Economique de l'Afrique Centrale* - the Customs and Economic Community of Central Africa (UDAEC); some Eastern and Middle African states (Rwanda, Burundi and Zaire) as member states of the Economic Community of the Countries of the Great Lakes (CEPLG). Such fluid classification systems complicate attempts to make sub-regional generalisations or comparisons and shift residence to country-specific interpretations which in themselves are far from comparable.

Throughout this Chapter, the United Nations classification which apportions the SSA into the four sub-regions, has been adopted. Exceptions to this rule apply where a given phenomenon is best explained by a different classification.

Population: Basic Concepts

The term *population*, while commonly used, has been so misinterpreted in Africa by lay persons that it is misconceived as “Family Planning”, that is, a method of spacing or limiting births, or both. Clearly this is a gross misinterpretation of a concept which is on the lips of researchers, planners, policy and decision makers who scarcely share information in many SSA countries.

As the total number of people in a given place, the term population must of necessity address population dynamics whose components - **fertility** (a positive factor), **mortality** (a negative factor) and **migration** (having elements of either) - determine the growth and structure of population. *While the difference between fertility and mortality constitutes natural increase of population, the aggregate change due to the interplay of the three factors denotes population change.* Measures of **fertility** range from a *crude index* (crude birth rate) to a more refined, *total fertility rate*; of **mortality**, from crude death rate to *infant mortality rate* (IMR), *maternal mortality rate* and *life expectancy at birth* ; and of **migration**, from *gross migration* to *net out-migration* or *in-migration*, or *net emigration* or *immigration*.

In the context of population - area relationship, population distribution (configuration of population in a given space) and population density, either the number of persons per square kilometres (arithmetic density) or the number of persons per square kilometre of arable land (physiological density) point to whether population size exceeds and therefore exerts pressure on resources; the optimum population which economists often underscore, is an idealistic condition because it presupposes an equilibrium between population and resources.

Finally, the *concept of population pressure on resources*, notably land, has far-reaching implications for environmental management and sustainable development. In traditional African societies, shifting cultivation, including the “slash and burn agriculture”, thrived because population size was small relative to the available land, ie, societies were underpopulated. As population increased and land sizes diminished, it became necessary for agriculturalists to adopt intensification in agriculturally fertile land and extensification by agriculturalists extending agriculture to formerly non-agricultural lands, for instance, marginal and deforested areas (Bilsborrow and Okoth-Ogendo, 1992). In drylands, which represent a substantial part of SSA, nomadic pastoralists have been moving with

their livestock, in some cases overgrazing and causing environmental degradation. Where agriculturalists have adopted extensification, they have generally invaded the pastures, thereby engaging in serious conflicts and violence with nomadic population; examples abound in East Africa's rangelands (Talbot).

In certain circumstances, agriculturalists have *out-migrated from densely settled areas*, where there is acute pressure on the land, to neighbouring areas for purposes of agricultural land colonisation. This explains in-migration into Rift Valley Province (the former "White Highlands" which were exclusively for white settlement) from the more densely settled Central and Western Provinces of Kenya during the period of land settlement (approximately 1962-1975) and why "land clashes" had to occur in 1991-93 when the indigenous population disputed invasion of their hereditary land (Oucho, 1984, 1996). This example is not limited to Kenya; rather, it has been replicated in virtually all SSA countries where agriculturalists, envisioning land shortages at some stage, colonise agricultural, or even marginal, lands in their neighbourhood to angmeny and resources, generally at the expense of the indigenous population.

Demographic Indicators

Population Size and Growth

At the close of the twentieth Century, demographic indicators of SSA countries depict an irksome situation. Of Africa's total population of 738.730 million as of mid-1996, Sub-Saharan African accounts for a staggering 577. 358 million or 78.2 percent of the continental total. For Sub-Saharan Africa alone, the sub-regional percentage distributions are: Eastern Africa (39.4%), Western Africa (37.3%), Middle Africa (14.8%) and Southern Africa (8.4%); at mid-next century when SSA will have a population of 1.7 billion, the projected percentages are expected to be 40.4%, 36,9%, 16.5% and 6.2% respectively. Both Eastern and Middle Africa will improve their proportions as both Western and Southern Africa record declining proportions for SSA's population. In a descending order, the top five largest populations in SSA are, and will continue to be, Nigeria, the Democratic Republic of Congo (formerly Zaire), Ethiopia, United Republic of Tanzania and Kenya.

Population growth rate explains why sub-regional differences in population size exist and will persist in future. Middle Africa leads the peak with a growth rate of well over 3 per cent per annum, due largely to improving fertility where in the past infertility and sub-fertility reigned. Western Africa comes second with a growth rate of nearly 3 per cent per annum; the sub-region consists of some of the slowly growing populations, such as those of St. Helena and Cape Verde Islands and the Sahelian countries (Mauritania, Senegal and Burkina Faso), with

Liberia experiencing a negative growth rate due to massive refugee outflow since 1992. Except for Malawi, Somalia and the Indian Ocean islands with exceptionally slow growth rates and Rwanda with a negative growth rate due to the outflow of refugees, all Eastern African countries record high population growth rates. The slowest population growth rate is in Southern Africa where all the countries register virtually uniform population growth rate. It is important to stress, however, that there is a declining trend in the SSA population growth rate which lurked above 3 per cent for much of the previous decades. This declining population growth is attributed to fertility decline which has been taking place since the 1980s in virtually all SSA countries as mortality continues to decline.

Crude and Refined Fertility and Mortality Measures

Two fertility measures warrant consideration, namely: Fertility Indices and Mortality Indices.

Fertility Indices

Crude birth rate (CBR) measures births per 1000 population; it is a crude measure because it presupposes that both males and females and those within and outside child-bearing ages do give birth. The CBR is highest in Middle Africa, followed by Western Africa and Eastern Africa which tie, and Southern Africa as a distant fourth. It is in the Sahelian countries of Niger and Mali and in the Western, Eastern and Southern African countries of Guinea, Uganda and Malawi where CBR is highest.

A more refined measure is the *total fertility rate* (TFR), representing the average number of births to women of child-bearing age (15-39 years). Eastern, Middle and Western Africa tie in leading with a TFR of 6.4 children, followed by Southern Africa. But the TFR levels correlate closely with CBR levels as it is highest in Niger (7.4) and is noticeably high in Malawi (7.2) Angola (7.2), Mali (7.1), Burkina Faso (7.1) and Uganda (7.1). These are TFR levels comparable to Kenya's TFR in the 1970s: it should be remembered that high fertility and fast declining mortality were responsible for Kenya's highest population growth rate (about 4.1 per cent per annum) in Africa in the late 1970s and early 1980s.

Mortality Indices

Likewise there are crude and refined mortality measures, namely *crude death rate* (CDR) and *infant mortality rate* (IMR) which reflect the quality of health and life expectancy at birth. **Crude death rate** measures the rate of all deaths per 1,000 population, including infants, children, women adults of all ages and old-age population whose mortality varies considerably. **Infant mortality rate**,

on the other hand, measures the rate at which infants die before reaching their first birthday (i.e., those aged 0-11 months); it is often higher than the general under-five mortality, before children become more adaptable and resilient healthwise. **Life expectancy at birth** is the average number of years newly born are expected to stay alive before dying; generally it increases as socio-economic development increases, though devastating pandemics or epidemics such as AIDS would tend to reduce it.

Crude death rate is highest in Eastern Africa where Rwanda, Malawi, Uganda and Burundi register exceptionally high CDRs; Western Africa comes second with Sierra Leone, Liberia, Guinea-Bissau and Guinea recording equally high rates; Middle Africa, where countries of the sub-region register nearly uniform CDRs, has medium rates; and Southern African countries have more than halved their CDRs from those in the first two sub-regions. *It would appear that countries which have been experiencing civil war and economic difficulties still lurk in a different mortality enclave from that of other SSA countries.*

Infant mortality rates in Africa remain the highest in the world. Again, the general rate is similar to that of the crude death rates. Countries with IMR rates above 120 per 1,000 live births include Liberia, Sierra Leone, Mali, Guinea-Bissau, Guinea, Gambia and Niger in Western Africa; Malawi, Rwanda and Burundi in Eastern Africa; and Angola and Congo (Brazzaville) in Middle Africa. Clearly Southern Africa is in a class of its own, experiencing much lower IMRs.

Life expectancy, which has declined in the era of AIDS pandemics, it is still exceptionally low in SSA countries. It is highest in Southern Africa where all the countries have life expectancy of 50 or more years; followed by Middle Africa where, however, the national figures are more or less uniform; then comes Eastern Africa where the figures range from a mere 23 years for Rwanda to over 70 years in the Indian Ocean islands of Reunion and Mauritius; and at the tail end is Western Africa where variations among the countries is, however, negligible.

Internal and International Migration

Spatial dynamics of population - spatial and urban population distribution, and both internal and international migration determine the total population within a country or part of a country. Highlights of these are given to underscore considerable variations in the continent.

Population Density

Africa is generally a sparsely populated continent. The large chunks of arid and semi-arid lands (ASAL) including the Sahara and the Kalahari deserts in

inhospitable tropical forests are largely responsible for spatial population distribution. But within any particular country, there are pockets of very densely settled areas in which population pressure on the land is already being experienced. Of the sub-regions, Eastern Africa is the most densely settled (within the Indian Ocean islands, Burundi and Rwanda having very high population densities), followed by Western Africa, Southern and Middle Africa in a descending order.

Urban-rural distinguishes the total population between urban and rural areas. It should be cautioned that the term “urban” is fluid in SSA countries, as whereas some countries have adopted the threshold settlement size of 2,000 people to denote an urban centre, others apply the proportion of non-agricultural activities, a settlement’s administrative role and so on. This invalidates attempts to compare urbanisation among SSA countries or between Africa’s and that of other developing countries.

In SSA, the proportion of urban population has increased steadily in the three-odd decades 1960-1993 and projections are expected to be dominant by the year 2000. In Mauritius, it ranges from a small percentage in 1960 to a projected figure of 42% in the year 2000; in South Africa from 47% to 53%, respectively; in Congo (Brazzaville) from 32% to 63%, respectively; in Nigeria from a mere 14% to a staggering 43%, respectively; and in Kenya from 7% to 32%, respectively. These statistics symbolise the rapid rate of urbanisation that has been taking place in the region. Yet in many SSA there is the “urban primary” whereby one principal city, often the national capital, dominates the national scene; incidentally except for Lagos in Nigeria and Kinshasa in the Democratic Republic of Congo, these cities have much smaller populations than do Asian and Latin American cities.

Migration is simply defined as spatial or geographical mobility of population involving a change in the usual residence (IUSSP, 1982: 92-93). Distinction is made between internal migration which denotes movement within the national boundaries and international migration in which movements cross defined territorial boundaries.

Internal migration consists of four types: (a) rural-rural which accounts for the bulk of internal migration in many SSA countries (comprising nomadic pastoralism, movements to agricultural land colonisation); (b) rural-urban migration which was important in the first two decades of independence in SSA countries but whose rate has so far dwindled; (c) urban-urban (inter-urban) which is still limited in many SSA countries, but which promises to gain prominence in future as urbanisation increases; and (d) urban-rural, including return migration of retired workers, the deceased and their relations, unemployed person, and those who have lost employment.

Important features of internal migration include the following:

- ❑ It is both a cause and an effect of a country's development pattern.
- ❑ It is easily studied from census data (e.g. by cross classifying place of birth with place of renumeration statistics) as well as survey data and case studies.
- ❑ While return migration is a characteristic of first-generation migrants, it does not apply for second and subsequent generations of migrants who often break socio-cultural links with their origins.
- ❑ Migrants are selected by ethnicity, sex, age and economic activity.
- ❑ The peak age of migration is often 20-29 years and that of return migration begins at 45 years in most SSA countries.
- ❑ Determinants of migration include external factors, community level variables, household characteristics and decisions, environmental and resource factors and so on.
- ❑ Consequences of migration are positive and negative in both origins and destinations.

International migration also consists of four board types: (a) permanent immigration (e.g., Europeans in South Africa and Asiatic in many SSA countries) and emigration (e.g., slave traffic to Asia and the New World); (b) labour migration which comprises cheap labour (e.g., mine workers from Southern Africa states to South Africa) and skilled persons (e.g., highly educated and professionals in the South-North “brain drain” and from the rest of Africa to Southern Africa, especially the buoyant economies of Botswana, Namibia and South Africa - as “skilled relocation”); (c) refugees, including asylum seekers, which is by far the most dominant type of international migration in SSA, especially in Eastern Africa; and (d) illegal/ clandestine/ undocumented migration along the generally arbitrarily drawn, porous, unpoliceable borders dividing one ethnic group into two or more nationalities.

International migration has the following features:

- ❑ *Permanent migration* sustains diaspora which is useful in political, economic and social networks and linkages.
- ❑ *Documented migration* depends on rules of entry into the immigration country and rules of exit from an emigration country.
- ❑ While *South-North migration* (especially from West and Middle Africa to the developed nations) constitutes “brain drain”, intra-Africa one is “skill relocation”.

- ❑ *Refugee flow* is by far the most dominant type of migration, with SSA accounting for more than one-half of the world's refugees. It is the result of *coup d'états*, civil wars, floods and environmental problems such as drought and famine. Together with internally displaced populations, refugees disrupt development efforts in any sending or receiving country.
- ❑ *Illegal/ clandestine/ undocumented migration* is rampant along all borders of SSA countries depending on political, economic and social circumstances.
- ❑ All SSA institutions of regional economic integration - e.g., ECOWAS, COMESA and SADC - have protocols on free movement of persons, right of residence and establishment, which have not been fully implemented. When implemented, SSA will be a region of countries without boundaries, and one where better "skill relocation" would be effected for the benefit of all the countries which make up the region.
- ❑ *International migration* (different types of it) is caused by wide-ranging factors: demographic, economic, political, socio-cultural and environmental.

Poverty

Definitions

Literature on poverty suggests that while the term is commonplace, it is by no means clear to most people. The simplest definition of poverty (UNCOS, 1996:108) is that:

Poverty implies deprivation of human needs that are not met. It is generally understood to arise from a lack of income or assets... Definitions that set a "poverty line" to divide the population into the "poor" and the "non-poor" are often most inaccurate because they simply standardise what is highly complex and varied.

To this end three concepts may help define poverty, namely:

- ❑ **Poverty** in terms of *lack of physical necessities, assets and income*;
- ❑ **Deprivation** which encompasses the above and includes other dimensions such as *isolation, vulnerability and powerlessness*; and
- ❑ **Unreliability** which denotes *defencelessness, and exposure to risk, shocks*

and stress. It is, therefore, important to be absolutely clear about the aspects of poverty being discussed at any particular time. Most SSA government seem to favour the simplistic “income level” definition as they fail to provide the population with the physical necessities or to give them opportunities to acquire dependable assets. This is presumably because the Bretton Woods Institutions (The World Bank and the International Monetary Fund) express national incomes and assets in terms of gross/national product (GNP) per capita or gross domestic product (GDP), national averages that mask intra-country variations and that depict misleading pictures about individual countries, especially when compared internationally.

The literature on poverty is also replete with concepts such as “*absolute*” and “*relative*” poverty, reduction, alleviation and eradication of poverty, which do not convey intended meanings unless the kind of poverty referred to is clearly defined, well defined measures are employed as well conceived intervention measures are designed.

A Geographer echoing British students’ view in 1988 that “to think of Africa is to think of poverty” (O’Connor, 1991-1) clearly simplifies his definition of poverty for a continent sitting on wealth which is yet to be properly utilised by African Countries and the African people. He points from the onset that his book, *Poverty in Africa: A Geographical Approach*, is concerned with “material poverty”, that is, low level of income and low levels of consumption of goods and services, which is reflected in diet (reflected by internutrition and malnutrition) and ill-health linked to low levels of education. The study notes that the poorest groups are found in rural areas, that female-headed households are poorer than male-headed ones, that women are generally poorer than men and both teenage school-leavers and the elderly are the poorest in SSA countries (O’Connor, 1991:23-30).

Nature and Extent of Poverty in Sub-Saharan Africa

On the basis of income alone, 45-50 per cent of the population in SSA live below the poverty line. In 1993, an estimated 40 per cent lived on less than US\$1 per person a day, with at least half of them in East Africa and Nigeria. The general trend for the selected 14 SSA countries in the five years 1985-1990 was an increase in the percentage of population with less than US\$1 a day, with substantial increases in Rwanda and Ethiopia (then war-torn countries) as well as Cote d’Ivoire. The rest of the precipitous countries enough to warrant lack of government action.

Causes of Poverty

In a recent study, *Taking Action for Poverty Reduction in Sub-Saharan Africa*, the World Bank (1996) identifies eight main causes of poverty as (i) inadequate access to employment opportunities; (ii) inadequate physical assets (e.g. land and capital) and minimal access by the poor to credit, or even on a small scale; (iii) inadequate access to the means of supplying rural development in poor regions, (iv) inadequate access to markets where the poor can sell goods and services; (v) low endowment of human capital; (vi) destruction of natural resources, leading to environmental degradation and reduced productivity; (vii) inadequate assistance for those living at the margin and those victimised by transitory poverty and (viii) lack of participation, including failure to draw the poor into the design of development programmes.

Indices of Poverty

Human Development Report 1996 (UNDP, 1996: 109-112) applies the Capability Poverty Measure (CPM) to estimate the extent and depth of poverty in 101 developing countries. Explaining that human development is defined by the expansion of capabilities which, unlike income, are ends and are reflected in human outcomes (e.g. the quality of people's lives), the HDR 1996 refers to deprivation as a lack of basic capabilities, when people are unable to reach a certain level of essential human achievement or functioning (UNDP, 1996 109), i.e., the people are poor. The CPM is a simple index composed of three indicators that reflect the percentage of the population with capabilities shortfalls in three basic dimensions of human development, namely (UNDP, 1996 109).

Dimensions of Human Development

Corresponding Indicators

- Living a healthy, well-nourished life: Percentage of children under age 5 who are underweight.
- Having a capability of safe healthy reproduction: Percentage of births unattended by trained health personnel.
- Being literate and knowledgeable: Percentage of women 15 years and above who are illiterate.

In the CPM, the problem of aggregation across the three variables is solved by choosing variables expressed in terms of the percentage of the relevant population that is poor.

The threshold for defining poverty is based on the standard definitions for underweight, for trained personnel and for literacy which are already in use. Other plausible variables in the CPM include the percentage of low-birth weight babies or the percentage of one-year-olds immunised. Adding together percentages for the CPM three variables, the average Capacity Poverty Measure in a country is derived.

The SSA countries record very high CPMs, ranging from an average value of 20s-30s in Mauritius, Zimbabwe, Swaziland, Kenya, Botswana, and South Africa; to the 40s in Malawi, the Democratic Republic of Congo (formerly Zaire), Togo, Uganda and Central African Republic; the 50s in Senegal, Rwanda, Nigeria, Benin, Guinea, Guinea-Bissau, Mali and Burkina Faso; the 60s in Mauritania, Chad and Sierra Leone and the formerly war-torn countries of Somalia, Angola, Burundi and Mozambique; and 70s and above in Ethiopia (then including Eritrea) and Niger (UNDP, 1996: 111-112). These figures are closely correlated with the Human Development Index (HDI) values for SSA countries. A closer look at the three CPM variables and the real GDP per capita reveal a similar pattern.

Environment

Definitions and Issues

The environment is what envelopes human beings - flora and fauna that interplay in both production and consumption processes. In some instances, distinction is made between the *natural environment* (consisting of physical and biological phenomena) and the *human environment*, made of activities such as agriculture, industrialisation, fishing, deforestation and afforestation/reforestation, mining and urbanisation. This distinction makes little sense because both components of environment are interlinked through intricate processes.

Generally, *environmental issues relate to resources* - natural (physical and biological) and human - *some of which are renewable*, while *others are non-renewable*. A cursory consideration of resources of the atmosphere, lithosphere, hydrosphere, and biosphere will show that the *African environment has undergone degradation due to over-exploitation of resources, poor conservation measures, human greed in the context of international trade and profit-making in the sale of resources exploited and poor government policies and resource-sensitive planning strategies.*

The recent concern has been on *population, environment, and development interrelationships (PED)*, in which three basic scenarios emerge:

- Population influences the environmental which in turn affects development;

- ❑ Environment affect population, thereby influencing the development process; and
- ❑ Development affect environment which in turn influences demographic behaviour.

But more scenarios may be conceived depending on issues that are identified in a particular region, country or part of a country.

Regional environmental trends essentially cover *land* (degradation), *forest* (loss, degradation), *biodiversity* (loss, habitat fragmentation), *fresh water* (scarcity), *pollution*, *marine and coastal zones* (degradation), atmosphere (pollution) and *urban and industrial* (contamination, waste). The last four are increasing fast in Africa (UNEP, 1997:7).

Environmental Hot Spots

The World Bank (1996), using work by the Food and Agriculture Organisation (FAO), divides Sub-Saharan Africa into six sub-regionally based ecological zones: (I) Sudano-Sahelian Belt, (ii) Humid West Africa, (iii) the Congo Basin, (iv) East Africa, (v) Southern Africa, and (vi) The islands of the Indian Ocean. The main highlights of the natural capital (natural resources) of each are provided.

The Sudano-Sahelian Belt

This zone is the most fragile and is the least favourable for development in the whole of SSA region. Its liabilities include poor soils and low unreliable rainfall, resulting in extremely short cropping period and incessant drought. Except for the large basins of the Niger River and Lake Chad as well as the Nile River Basin in Sudan, the Sudano-Sahelian Belt countries have exceptionally low potential, especially the land-locked countries such as Burkina Faso, Chad, Mali and Niger. There is also the problem of soil degradation which has aggravated the risk of drought due to loss of organic matter and nutrients (e.g. phosphorus), deterioration of soil structure and surface crusting (World Bank, 1996:24). Population pressure, therefore, mounts in the major wetlands such as the inner Niger Delta in Mali, Lake Chad and along the Nile River. The ecological zone constitutes a suitable laboratory for studying the process and effects of agricultural intensification and their implications for populations and natural resource as well as environmental management.

Humid West Africa

This ecological zone has favourable natural capital due to favourable climatic conditions (high and regular rainfall and hot, humid temperatures) and soils of reasonable quality, though lacking phosphorus. But the region has experienced large-scale immigration from the Sahelian countries, thereby exerting pressure on the resources and environment. Also, in-migration into the coastal areas has caused environmental stress, which has been reinforced by rapid urbanisation and the resultant environmental pollution in the fast growing cities. The population factor has also caused deforestation, as has extensification as deforestation paves the way for agricultural activity, which, however, is less vibrant than in the rest of SSA.

East Africa

The natural capital of this sub-region is renowned for its unique scenery and the diversity of its parks and reserves, which have favoured the tourist industry (e.g. in Kenya). It has also good soils in the highlands, which coupled with quasi-temperature conditions, have sustained commercial agricultural production. The situation applies to the East African Plateau, the Great Lakes Region, Ethiopian Highlands and agriculturally endowed areas of Tanzania and Zimbabwe. But the attractiveness of this ecological zone has stimulated rapid population growth which has resulted in population pressure on the land, leading to agricultural extensification into deforested areas and even marginal lands. Land degradation has taken place not only in these densely settled areas but also in the Lake Victoria Basin.

Southern Africa

The natural capital of Southern Africa is rich in terms of biodiversity and production potential in a region which has large chunks of arid and semi-arid lands experiencing a moderate-to-high risk of drought. The South African past policies have had a negative impact on the environment by encouraging agricultural development through subsidies on farm inputs and irrigation development without stimulating enough soil and water conservation (World Bank, 1996: 31). The country is experiencing pollution problems because of its energy and industrial development based on mineral coal (e.g. in the Johannesburg area). The region is well cultivated as it has reasonably good soil, though highly variable climatic conditions cause recurrent droughts. Unfortunately, soil degradation is occurring in grazing land between Luanda and Huambo in Angola, in the Lesotho highlands and in North-Eastern Botswana (p.33).

The Indian Ocean Islands

The islands of the Indian Ocean share more or less similar environmental features which determine their future in terms of their biodiversity capital which is of global significance, particularly in Madagascar; the management of marine resources in the development of tourism; the mountainous topography which requires special attention in terms of soil conservation and watershed management; tourism which has considerable potential and is essential to the economic development of the islands (World Bank, 1996: 33). Although Madagascar is dominant in its size and exceptional diversity of its landscapes as well as the uniqueness of its flora and fauna, it, like the Comoros, remains less developed than Mauritius and Seychelles.

More than half of the total area of these islands is cultivable because of relatively good soils and favourable climatic conditions. The main problems are a high risk of erosion due to broken terrain and rampant deforestation (especially in Madagascar). The hot spots of the sub-region in Madagascar are the central Highlands and the mountainous eastern zone where land degradation has been taking place.

Some Environmental Management Problems

A number of environmental problems in the developing world. These are **deforestation** - its annual rate and efforts made in reforestation: production of fuel wood and charcoal which is closely linked with deforestation; and internal renewable water resources (for human, animal and industrial consumption), particularly their annual withdrawals. Deforestation is particularly significant in Western and Middle Africa sub-regions - in Nigeria, Cote d'Ivoire and the Democratic Republic of Congo (formerly Zaire) and Cameroon in the latter. However, the annual rate of deforestation is rather low in SSA countries although, rates above 3 per cent are reported in the Mauritius, the Comoros, Cote d'Ivoire and Malawi; in majority of countries, rates below 1 per cent are typical (UNDP, 1966: 180-1).

Production of fuel wood and charcoal is a major environmental problem in Sub-Sahara Africa. The general trend has been an increase of the phenomenon in all SSA countries except Mauritius where it decreased between 1979-81 and 1993. As the only affordable source of energy for the bulk of rural and poor urban population, fuel wood and charcoal production threatens any afforestation and reforestation efforts which are being made with little success in many SSA countries.

Annual fresh water withdrawals as percentage of water resources in 1980-89 are, like deforestation, also insignificant, except in the Atlantic Ocean islands of

Cape Verde and in Madagascar and Mauritius in the Indian Ocean. As the sources of freshwater dry up as a result of deforestation and desiccation of watersheds, the problem of fresh water will be exacerbated by diverse demands.

In Africa the driving forces of sustainable development which exert environmental impacts include the *production systems* (agriculture, livestock production, fishing and hunting), *population growth*, *industrialisation*, *urbanisation*, *fuelwood and energy management*, *poverty and affluence* and a number of miscellaneous activities and phenomena (Okogbo, 1966:145-147). The general constraints on sustainable development are (a) political colonial legacy, political instability, corruption and deficiencies in governance, deficiencies in planning, deficiencies in legal and legislative support of development programme and lack of effective regional integration and collaboration in development; (b) socio-economic deficiencies in education and training, lack of effective campaign of public entitlement and orientation, poverty, unfavourable economic conditions and limitations in financial support and; (c) technological constraints centering on the application of science and appropriate technologies to the conservation, management, processing and rational utilisation of natural resources. Besides, there are specific or sectoral constraints; (i) on agriculture (ii) on industrial development, such as environmental and natural resource constraints, technological and technical constraints and socio-economic constraints and (iii) mine industry development - environmental and natural resource constraints; technical and technological constraints implies that a careful assessment of variables of the various constraints is necessary to prescribe suitable solutions for eliminating them.

Conclusion

This Chapter has demonstrated the complexity and diversity of population, poverty and environment in Sub-Saharan Africa. The region's demographic, socio-economic welfare and environmental profiles differ by sub-regions, individual countries in respective sub-regions and part of any particular country. In order to enable SSA governments formulate and/or reformulate meaningful policies on these issues and work closely with NGOs, the private sector and international donor agencies, they will of necessity facilitate co-operation among researchers, planners and policy makers focusing on both individual fields and multidisciplinary ventures.

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