

1 Building the Capacities of Developing Countries to Protect the Environment

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Introduction

The ideals of planning suggest that development and public infrastructure can be implemented in an atmosphere of complete harmony and that environmental, social and economic disruption can be minimized. This assumes that there is full knowledge of the social, economic, political and physical systems within which such development is operating and that assumes that development is generally biased toward the public interest rather than motivated by private or individual objectives and incentives. In the ideal atmosphere, development is weighted in favour of the benefits of future as well as current populations and such benefits tend to be available to all levels of society and not create a restriction to a part of society or present a barrier to a particular group.

In all development there is bound to be a segment of the population that suffers from negative impacts of development and some segment of the population that will benefit from the economic growth that results from the development. Practice, however, may dictate quite a different result as the differing social structures of a country may form the basis of the atmosphere in which development is produced and both how and by whom the resources of society are utilized. One must recognize that there are, in fact,

differing levels of knowledge and expertise in the world and differing systems that will allocate resources for the development of a community. Such systems may value the environment differently and place varying importance on the elements that enable development to be sustainable rather than a depreciation of the community. In fact, the land and its use is the principal resource in the development process and it is definitely finite and scarce. The political process must allocate resources mindful of the capability of the community to sustain such activity and on the basis of the most appropriate public good for the future. As resources become more and more scarce and certain physical capacities approach depletion, the political process becomes more involved to determine how resources are distributed and who receives the opportunity on behalf of the public (Kaspirisin, 2011).

So far, in a global context, an ideal condition is presented in which theory and practice of planning seem to function as expected. The key is then how public resources are used and distributed within each community to sustain itself for the future. The process of decision making for development is often the governing factor rather than the capability of the physical systems or the availability of the resources to accommodate development. Focusing on the environmental and physical systems to assess sustainability will

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ignore the social and political climate within which the community and its adaptability (developmental change) exist. The political system of resource allocation and development approval is the determining force in community choices and the awareness and ability of this system to demand development responsiveness may be the key to sustainability in the future.

Which level of decision making has the most at stake in the development process – local, regional, or federal? Which level has the best capabilities to provide knowledge of the resources of development and which level is the best to identify and coalesce public needs into the proper vision and course for the community? The gradual integration of these concerns and the cooperation of effort between these levels of governance offer the greatest hope for the future (Hysler-Rubin, 2011).

The tenets of sustainable development suggest that any land use project, whether public or private, be implemented within the context of the limited capacity of the environment to accommodate such change and with full knowledge of the social and economic costs that may result from the development. This requires that the development be acknowledged to be a net benefit to the public and a contribution to the needs of the community without compromising community resources. It requires the coordination and cooperation of every level of the community – social, political, economic – to verify and integrate the differing systems that help to ensure sustainability. Rogan *et al.* (2012) provided sufficient argument to support the need to understand the carrying capacity of land before development begins.

Experience in the developing world (especially Africa) indicates that traditional development paradigms as dictated by Western ideas have not provided holistic solutions to Africa's economic, social and ecological/environmental development. This chapter suggests that a shift in the paradigm is needed for development which incorporates environmental information, indigenous perspectives, environmental impact assessments, consumer interests and local people's participation in all phases of development. Several examples from Nigeria are used to provide a theoretical and operational basis for a paradigm shift for sustainable development. The devastation of land due to haphazard development in Nigeria cannot be underestimated. The rapid

rate of development has also caused a lot of environmental problems in Nigeria and many other parts of Africa.

Efforts to develop and grow are not made in a perfect world where there is full knowledge of the social, economic, political and physical systems within which such development is operating. The reality is that the choices of how a community's limited resources are used and their distribution for development purposes are the prerogative of the governmental system that is unique to a particular country. One sector of that government may be isolated from a portion of the social or natural systems and select development that is not sustainable for the community or its future (Bass and Dalal-Clayton, 2002).

The political system of resource allocation and development approval is the determining force in community choices and the foresight, awareness and planning of this institution to manage development and respond to the natural, social and economic systems will be the key to sustainability in the future.

Urban planning is concerned with the comprehensive functional aspect of the city or town and its function is made of specializations within planning practice. In many Western countries, especially the USA, it is generally agreed that the most common functional planning areas are land use, real estate development, infrastructure, environment, transportation, housing, historic preservation and technology (Bullivant, 2012).

There are factors in the planning process such as the environment, society and resources that impact the pace, effectiveness and comprehensiveness of planning. Nonetheless, the following are the generally accepted steps in the planning process (modified from Cullingworth and Caves, 2009):

- Step 1: Identification of issues and options.
- Step 2: Establishing the goals, objectives, and priorities.
- Step 3: Collection and interpretation of data relevant to the planning of the area of concern.
- Step 4: Preparation of plans for the development of the area, town, city, or region.
- Step 5: Drafting of programmes for the implementation of the plans. This is often more difficult to do because of all the interest groups.

- Step 6: Evaluations of the potential impacts of the plan and implementing programmes. This step is crucial as it gives the communities the opportunity to make the right decisions about the course of actions they would like to take.
- Step 7: Review and adoption of the plans. Plans have to be adopted in order to ensure the endorsement of all interested parties or vested interests in the communities.
- Step 8: Review and adoption of implementing programmes.
- Step 9: Administer implementing programmes and monitor their impact.

It must be recognized that the planning process makes room for modification and adjustment to occur in the future. In order to circumvent the problem of lack of clarity of solutions in planning by using the conventional linear model, an interactive process of planning is generally used. The process entails detailed concrete stages in each successive level. This approach requires an investment in the data collection phase of planning, which is one of the stages listed above. It is critical for planning and development to be based on solid data collection.

One of the areas of specialization in urban planning that places great emphasis on environmental issues is environmental planning and for many years the basic tenet of environmental planning paralleled that of environmentalism. The guidance of development attempts in post-independent Africa has been ideas coming from developed countries. These planning methodologies or paradigms were instituted during the colonial era and have persisted into the post-colonial era. Expatriates and African developers and planners have continued to use Western ideas in the development and planning of African towns and cities. There is the realization that African traditions and culture must be reflected in the planning of African urban centres.

Africa's Landscape

In order to understand Africa's landscape and the present environmental condition that the continent is in today, one has to understand the continent's struggle for development.

Africa's landscape has been affected by many factors that are the results of development. Competing land use activities that have not been properly examined, monitored and controlled have contributed to the alarming negative changes in Africa's landscape. In the urban and peri-urban areas, spontaneous development or uncontrolled settlements are common features. Modern towns are loosely connected by deliberate planning. A particular reason for this problem, as one examines the different countries of Africa, is that the different cultures of colonial power left different legacies in terms of African urbanism. It is common knowledge that colonial rule and so-called progress, exacerbated the differences between urban and rural Africa. The rural-urban migration began as a result of the perception, in the rural areas of Africa, that there were abundant opportunities in the urban areas. With the large population influx into urban areas, unregulated development began to appear in Africa's urban areas. Today, it is impossible for planning authorities to regulate development in order to make the environment aesthetically pleasing and to reduce damage to ecological systems and human health.

Growth and development in African societies have taken many forms. Both concepts (growth and development) can be explained in the light of what is going on in African countries. Economic growth as an indication of an increase in the volume of goods and services produced in a national economy can be attributed to the desire to create employment and sustainable development. It basically describes a process that indicates statistical increase in the volume of goods and services. On the other hand, development can be explained as qualitative and/or quantitative improvements in a society through the use of available resources. The resources could be in the form of human and natural/economic capital (Eade, 2005).

Transformations of African societies in the form of infrastructure (roads and telecommunications), housing and other land uses pose the following problems: (i) increasing pressure on natural resources from high population growth; (ii) soil erosion due to poor land management practices and overstocking; (iii) deforestation leading to scarcity of fuelwood, soil erosion, flooding and siltation; (iv) water pollution from agrochemicals and industrial and sewage effluent;

(v) depletion of fish resources caused by water pollution and overfishing; (vi) loss of biological diversity; (vii) human habitat degradation; (viii) air pollution; and (ix) climate change (Connolly and Lukas, 2002).

Since the colonial period, transformation due to industrialization and the creation of urban centres for government offices have attracted large populations. Attempts by federal and local governments in Africa to provide services to meet the demands of the public have led to environmental problems and the fringes of cities have suffered from unplanned settlements. This problem has continued today because the trend of this type of land use has persisted.

Models for development and planning in the post-colonial era in Africa continue to emphasize ideas of the colonial era. Increasing trends in the involvement of multinationals in the extraction of exhaustible and renewable resources have continued to threaten the African landscape. The ideas of transforming Africa into a modern technological, industrial and commercial region could be successful if only the industrialization efforts paid attention to some pertinent indigenous culture, people and efforts rather than relying solely on Western concepts of planning. Planners are beginning to embrace the indigenous norms in their development. This is evident in the commercial land use and the mixed land activities in many parts of Africa.

Examples of Environmental Crisis

The ecosystems of the Niger Delta have been greatly damaged and the biodiversity is in a steady decline as well as the decline in cultural diversity. The torrential rainfall of the region, which is usually followed by flooding, has exacerbated the spread of about 5 million litres (1.3 million gallons) of spilled crude oil in a year (Environment, 2015) over several hundred square miles. The clean-up work by a few local people who are not given protective gear for this life-threatening work is very poorly conducted.

Another devastation worth mentioning is the Ogoni land in Nigeria. Here, 500,000 people have not received enough compensation for the devastation of their environment at the hands of the Shell Oil company's efforts in drilling for oil. Vast areas of oil-drilling sites have been devastated

as a result of the rupturing of pipelines. The air pollution and landscape transformation that occur from such incidents change the communities forever. An example is the Ejama-Elleme village in Nigeria.

There is no doubt that development predicated upon the extraction or the exploitation of natural resources has severe human and environmental consequences. The Nigerian examples clearly portray reasons why policies must be established and environmental laws enforced in order to have rational development and environmental protection.

One resource that is rapidly disappearing from Africa's environment as a result of the rapid rate of development is the wetlands. Although this is a global problem, Africa cannot afford to lose this vital resource because Africa is in its early development stage. Most of Africa is rural and its people depend on simple ways of obtaining available freshwater and food supplies. Wetlands provide the freshwater and major food supplies upon which Africans depend.

Wetlands provide essential nutritional substances to humans and they absorb the waste that is generated by humans. Thus their two main purposes are: (i) to supply natural resources in terms of food; and (ii) to act as sinks for waste generated by humans. In order for this vital ecological system to continue to carry out its functions, two things must be recognized: (i) their regenerative capacity must be kept intact; and (ii) their assimilative capacity must be protected, i.e. not exceeded.

Africa's wetlands have multiple uses or roles and of course this is coupled with challenges for their protection so that they can serve humanity in perpetuity.

The Okavango Delta faces a number of environmental threats that are leading to the gradual destruction of this major wetland in northern Botswana. The threats are both natural and artificial. Climatic changes pose a great deal of problems and are human induced. Direct human threats consist of logging, farming, ranching, burning of vegetation, harvesting of forest resources/products and hunting of wildlife. Darkoh and Mbaiwa (2014, p. 3) described the Okavango Delta situation thus:

Humans and animal population increase and competition for natural resources and associated land use conflicts have been primary

anthropogenic factors of land disturbance and land cover change in the Delta. The most significant land use conflicts have been those between wildlife, livestock, arable land, tourism, natural resource conservation, scattered settlement expansions, as well as between subsistence use (gathering of veld products, fishing and hunting wildlife) and the need for conservation and sustainable resource utilization. For example, the high population of elephants (currently estimated at about 200,000 in northern Botswana) has become a major problem in the Delta as well as the Chobe enclave. Elephants destroy crops and tree vegetation while lions and other animals predate on livestock.

The expansion of the cattle industry in and around the Delta has involved the erection of veterinary fences which block wildlife migratory routes in consequence of which the animals get trapped and killed, a factor contributing to the declining wildlife populations in the Delta. Veterinary fences are a blessing and a curse in the Okavango Delta. Blessing in the sense that the Southern Buffalo fence has protected the Okavango Delta from human encroachment, hence conversation is achieved. Conversely, some of the fences have been a curse to the wetland.

Siegel (2010) emphasizes the work that is being done to maintain and sustain the healthy condition of the Okavango Delta. The Permanent Okavango River Basin Water Commission (OKACOM) has been put in place to manage the Okavango but with the growing population in the region and development and dependence on the resources of the Delta, the future of the Delta is questionable.

Modern Africa's development is predicated upon Western ideas. The high rate of urbanization was set into motion when service jobs were created by colonial administrative procedures. The ruling elite continued the process of conglomeration in the urban centres. As the rate of population continues to grow (Table 1.1), the new populations look for jobs in urban areas where the government and business institutions are usually located. Thus the inability to deliver services and housing leads to a decline in the quality of the environment and the establishment of unsanitary conditions and spontaneous housing due to the waste generated by people. Urbanization in some African countries has been increasing in

terms of population at alarming rates. Except for countries that have experienced some sort of civil strife that has decreased populations, most of the continent shows great population increases.

A large number of African countries seem to be guided by a haphazard colonial legacy of planning style without an authentic African style. For several decades during and after colonial rule, Africa's economies and environments were being transformed and the social and ideological beliefs of the people were being modified to respond to Western ideas and needs. Africa found itself passing through the revolutions of politics, agriculture, technology, industry and society all at once. For several decades prior to the colonial era the majority of Africans lived in relative isolation but the colonial era brought Africa and Africans into the Western economies and urbanization styles that have proven to be inadequate in coping with the unprecedented growth of modern Africa.

The exponential population growth has been a major problem for land use and the quality of the environment. The population increase in Africa translates into a need for more land for agricultural production. It means that the savannahs and forests are exposed to human conversion as people try to farm the land. Africa is a continent where the majority of the people (up to 65%) are farmers and land is of great importance to agriculture. But as the number of people who cultivate the land increases, the environmental degradation increases. Slash-and-burn agriculture and rotational agriculture require large acreages of land and over the years the number of cultivators has been on the rise. The increase in poverty in most African countries has led to the increase in the number of people who have turned to the land as a source of sustenance. In many parts of Africa, there is an aggressive attempt to increase agricultural output through the use of machinery, chemically based fertilizers, herbicides, fungicides and improved seeds. Mechanized agriculture and the use of chemically based substances have negative ecological impacts on the natural systems.

For the rural environment in Africa, the intensification of agricultural practices whereby chemically based substances are used to improve the yield rate can be problematic to the ecological systems and human health. With increasing

Table 1.1. Population size and growth in some African countries (UNDESA, 2015).

Country	Mid-year population (thousands)				Annual population increment (thousands)*		Annual Growth rate*	
	1980	2015	2025	2050	1980–2015	2015–2025	1980–2015	2015–2025
Eastern Africa								
Burundi	4,127	11,179	15,177	28,668	201	267	2.8	2
Comoros	309	788	981	1,502	14	13	2.7	1.5
Djibouti	359	888	1,003	1,186	15	8	2.6	0.8
Eritrea	2,384	5,228	6,585	10,421	81	91	2.2	1.5
Ethiopia	35,240	99,391	125,044	188,455	1,833	1,710	3.0	1.5
Kenya	16,268	46,050	58,610	95,505	851	837	3.0	1.6
Madagascar	8,747	24,235	31,728	55,294	443	499	2.9	1.8
Mauritius	966	1,273	1,304	1,249	9	2	0.8	0.2
Rwanda	5,141	11,610	14,377	21,187	185	185	2.3	1.4
Seychelles	66	96	100	100	1	0	1.1	0.3
Somalia	6,090	10,787	14,344	27,030	134	237	1.6	1.9
South Sudan	4,701	12,340	15,951	25,855	218	241	2.8	1.7
Uganda	12,548	39,032	53,497	101,873	757	964	3.2	2.1
United Republic of Tanzania	18,685	53,470	72,033	137,136	994	1,237	3.0	2
Central Africa								
Cameroon	8,932	23,344	29,530	48,362	412	412	2.7	1.6
Central African Republic	2,274	4,900	5,942	8,782	75	69	2.2	1.3
Chad	4,513	14,037	19,075	35,131	272	336	3.2	2
Congo	1,802	4,620	5,983	10,732	81	91	2.7	1.7
Democratic Republic of Congo	26,357	77,267	104,536	195,277	1,455	1,818	3.1	2
Equatorial Guinea	221	845	1,102	1,816	18	17	3.8	1.8
Gabon	729	1,725	2,116	3,164	28	26	2.5	1.4
São Tomé and Príncipe	95	190	233	353	3	3	2.0	1.3

Northern Africa								
Algeria	19,338	39,667	45,865	56,461	581	413	2.1	1
Egypt	43,370	91,508	108,939	151,111	1,375	1,162	2.1	1.2
Libya	3,191	6,278	7,086	8,375	88	54	1.9	0.8
Morocco	20,072	34,378	38,255	43,696	409	258	1.5	0.7
Niger	5,963	19,899	29,645	72,238	398	650	3.4	2.7
Sudan	14,418	40,235	50,740	80,284	738	700	2.9	1.5
Tunisia	6,368	11,254	12,320	13,476	140	71	1.6	0.6
Southern Africa								
Angola	8,212	25,022	34,016	65,473	480	600	3.2	2
Botswana	996	2,262	2,646	3,389	36	26	2.3	1
Lesotho	1,307	2,135	2,373	2,987	24	16	1.4	0.7
Malawi	6,163	17,215	23,134	43,155	316	395	2.9	2
Mozambique	11,936	27,978	36,462	65,544	458	566	2.4	1.8
Namibia	1,013	2,459	3,002	4,322	41	36	2.5	1.3
South Africa	29,077	54,490	58,436	65,540	726	263	1.8	0.5
Swaziland	603	1,287	1,438	1,792	20	10	2.2	0.7
Zambia	5,929	16,212	21,892	42,975	294	379	2.9	2
Zimbabwe	7,289	15,603	19,370	29,615	238	251	2.2	1.4
Western Africa								
Benin	3,718	10,880	13,937	22,549	205	204	3.1	1.7

population, slash-and-burn agriculture is not as productive as it used to be, say 100 years ago. The extensification of agriculture through the establishment of plantations in modern Africa faces competition from other land use activities. The issue of management of natural resources becomes paramount in sustaining African societies. New ways of planning land use activities are needed to safeguard the carrying capacity of the natural resources.

About six decades ago, Africa's food production could adequately meet the needs of its population. In the 21st century, many African countries import more than 50% of their food, and starvation and health-related diseases are at a crisis level. Countries such as Somalia and Mali are prime examples where food crises have happened recently. Adequate food supplies are fundamental human needs. A history of colonialism, rising population growth and poverty, and political instability, are just a few of the factors that have led to unsustainable agricultural development practices in Africa.

It is readily apparent that the underlying elements creating the food problem in Africa are not only great but also complex. Agricultural, cultural, economic and environmental issues cannot be analysed separately.

Sustainable Development Paradigms Explained by Social and Natural Scientists

Economists, social scientists and natural scientists have developed different paradigms of sustainability from the perspective of their respective disciplines. Each paradigm offers insights and interpretations of sustainability that are similar to the other views, yet unique features of each compete with one another and complicate the picture of how to interpret and define sustainable development and establish policies to achieve this end.

Natural scientists provide a narrow interpretation of sustainable development based on carrying capacity, biodiversity and ecosystems. Sustainable development becomes an environmentally based strategy in this paradigm, limiting central issues of economics and social parameters. This is not to say natural scientists do not recognize how economic forces promote

environmentally harmful actions, for they do. However, sustainable development as advanced by natural scientists promotes environmentally based solutions alone, without recognizing the need for structural adjustments or cultural influences which often dictate the success of sustainable development policies and programmes. The natural scientist believes that environmental thresholds, yielding points and environmental assessments will yield the technical analysis on which to base policy. That is, they narrow the focus within an environmental context and do not view economics or social factors as pertinent to sustainable development. The natural scientist is concerned only with natural resource management and other environmentally based cause-and-effect scenarios.

Social scientists promote the human element of the indigenous peoples as the core of sustainable development. Sustainability must examine the values, customs and morals of a society that have withstood the test of time. These socio-political variables influence development greatly and must be part of durable solutions to problems of development. Here the key becomes development of social and political institutions that will be responsible for providing policy. The economist views sustainability from the vantage point of growth and development. The economist is concerned with matters of supply and demand. Structural adjustment programmes attempting to reduce pressures on domestic economies and other economics-based strategies are central to this view.

Successful strategies are those that will create positive linkages between development and environment and those that break negative linkages; for example, reducing subsidies that deplete natural resources and cause high environmental degradation through extractive processes or pursuing reduction of poverty through income growth policies. Each of the models or views described above, while offering insights to sustainability, compounds the problem by offering varying accounts of the landscaping of developing countries to which policy and programmes are to be formulated and applied. In fact, by recognizing each of the three models, one begins to better understand the forces at work: cultural, economic, environmental. Solutions will not come as easily as history bears out; but rather, solutions must be found through an approach

recognizing the strengths of each model – an integrated approach. Sustainable development when viewed in this light becomes a win–win policy. Policy makers must analyse the trade-offs inherent between environmental quality and economic quality. In order for planning to be successful, it must deal with social, economic and resource policy matters.

Western Environmental Development Paradigms

Rapid development in Africa poses enormous threats to humans and ecological systems. The tremendous threats due to haphazard development continue to expand with regard to natural resource depletion, pollution and social problems. Thus environmental management is critical in Africa and other parts of the world.

As mentioned earlier, the nature of development in Africa is one that is heavily influenced by foreign ideas and participation. For most of Africa, there has been an infusion of development and conservation ideas from Western countries. Five paradigms of management of human relationships with nature that have been advanced over the years are examined here.

The first of these paradigms is **Frontier Economics**, which assumes that nature is infinitely endowed with resources in the forms of raw materials that could be used by humans to benefit themselves (James, 2004). This paradigm existed in industrialized countries well into the 1960s. There was no consideration for waste generated during the process of development. The environment served as a sink and as such the issues of exceeding assimilative capacity of the natural systems was not taken into account. The resultant by-products of production and consumption pose significant problems. The economic growth did not recognize the environmental degradation that came with it. As indicated in another section of this chapter, nature provides two basic services to humans: (i) to provide resources; and (ii) to absorb the waste that is generated as a result of human activities. Growth and economic development in Africa has been interfering with the ability of the natural systems to perform their second function, which is the assimilation of waste. Many African countries have followed the consumer attitudes of developed countries and as such have

similar, if not worse, environmental problems. James (2004, p. 4) observed: ‘Most developing nations have emulated this basic approach to economic and environmental management in one way or another. They have been in no small way encouraged by not just the examples and teachings, but also the direct policies prescribed for them by the leaders (in policy-making) of industrialized nations and international development and financial institutions.’ Frontier Economics emphasize the use of the natural resources without an extensive and important component of examining the harmful consequences of the implementation of the policies.

Another paradigm that has enjoyed a global interpretation is **Deep Ecology**. It is the direct opposite of Frontier Economics. This paradigm promotes the idea of ensuring that humans have a particular niche in the natural order of the world. It demands that the ideas of the technical issue of systems ecology and the biocentric view of the relationship between humans and nature be included in policy making for development. For example, the Convention on the International Trade of Endangered Species (CITES) signed by over 100 nations incorporates some ideas of Deep Ecology. Deep Ecology can be seen in the preservation of the sacred groves of Africa and how traditional beliefs have enhanced the preservation of natural resources on the continent.

The third paradigm of development that has been growing in Africa with the assistance from other nations such as the USA through its environmental protection agency is the **Environmental Protection** paradigm. The major tenet of this paradigm is to control the negative impacts of development. Impact statements are conducted for large projects to examine the consequences of development. The aim is that, before the projects are established, impact analyses are conducted and impact statements are written. Trade-offs are made between the ecological change to be allowed and the acceptable economic growth. The idea is to attempt to accept a certain amount of risk associated with development. Societies must be willing to allow the loss of some biodiversity in order for economic growth to occur.

A fourth paradigm of development is **Resource Management**. This paradigm emphasizes the theme of global efficiency. The use of

resources must be at a level where humans recognize natural constraints, setting limits in order to sustain natural systems and other systems that make human life possible. The paradigm demands that the polluter of the 'commons' (i.e. the environment that belongs to the public as opposed to the private sector) must pay for its repair. Different levels of government (federal, state and local) will be responsible for ensuring the sustainability of the country, region and/or community (WCED, 1987).

The fifth paradigm of development is **Eco-development**. The development of humans as well as nature is promulgated in this paradigm. The unpredictability of the synergistic impact of industrial by-products and the competing development makes it necessary to redefine security. Educated populations are bound to support the protection and conservation of their environment, because they are able to recognize the linkages between public health and environmental degradation.

Relevance of Paradigms to Africa's Future

It is important to make clear at this juncture that at any particular time in modern Africa, two or more of the ideas advanced in the paradigms discussed in this chapter are being utilized side by side. However, it must also be made clear that the population dynamics of the continent (with respect to migration patterns and exponential increase in some countries) are not adequately addressed by the ideas put forward by all the paradigms discussed in this chapter.

If solutions to Africa's environmental problems are to be addressed solely by Western environmental theories, then such strategies would not be comprehensive enough and such solutions are usually impracticable because of Africa's unique culture and environment. The diverse cultures of Africa present different sets of circumstances that are different from Western cultures. The soil and other environmental parameters present different scenarios that developers, environmental planners and policy makers must take into consideration.

The countries of Africa are confronted with an endemic economic difficulty that sometimes makes the funding of programmes and projects

related to environmental protection and conservation impossible. The dependence on foreign aid and assistance makes the sustainability of projects and programmes difficult.

In this chapter, it is strongly recommended that there should be a shift in paradigm from the traditional Western theories, described in another section of this chapter, to a paradigm that embraces Africa's cultural context and focuses in greater detail on building Africa's capacity in two areas: (i) environmental education; and (ii) institution building and reform.

The issues of the environment have not been of serious consideration in the formal education systems of many African countries for a number of reasons. In the face of desperate and deteriorating economic conditions, many African governments have not given education the priority it deserves and what is more serious is that the infancy of environmental education exacerbates the problem of neglect by governments across the continent. One should not be quick to lump all African countries into the category of countries that are not willing to invest in the formal education of their citizens in environmental matters. For many African countries, the lack of resources has made investment in environmental education problematic. Many African countries depend on loans from the International Monetary Fund (IMF) and foreign donors in order to plan for development and this impedes strategies that could address education issues. Civil strife, wars and other conflicts make investment in education impossible. When writing about programmes of action in capacity building, James (2008) elaborated on the significance of education in the protection of the environment and contended that curricula in environmental education should emphasize sustainable development so as to safeguard the integrity of the natural resources.

It is worthwhile to institute a consultative atmosphere in which host country citizens can participate as equal partners in establishing the priorities for development and for developing policies for capacity building. Each developing country has its own development problems. Education in different fields such as economics, agriculture, medicine, engineering and so on would be necessary to form the critical mass of professionals necessary for development. The whole idea of capacity building is to create a cadre of indigenous professionals necessary for

the task of setting policies and sustaining capacity building.

It is imperative to build and reform local institutions in order to cope with changes brought about as a result of modernization, development and growth. The indigenous institutions through its local traditions will incorporate the desires of the local people into the different stages of development strategies. This shift in paradigm will enhance sustainability of projects and communities and as a result reduce environmental degradation.

Capacity building should incorporate formal and informal educational settings to expand the understanding of the environment, the importance of conserving biological diversity and the protection of delicate or fragile environments and should build on the significance of social, economic and ecological linkages that support the people of Africa.

The role of institutions in capacity building is crucial to the sustainability of communities. It is because the basic characteristics needed to facilitate capacity building are community security and stability that it is imperative to strengthen institutions and reform them so that they can continue to provide strategies for improving Africa's environment and to develop sustainably. It is also because capacity building requires the ability to compete in modern society and recognize the unique cultures of Africa that institutions are necessary to set the tone and put forward policies to guide the transformation of Africa's environment. The transformation of the environment must benefit present generations but should not jeopardize future generations from enjoying the same opportunities that present generations are enjoying. James (2008) contended that foreign institutions such as the World Bank now appreciate the importance of domestic/host institutions in ensuring stable environments on the continent of Africa. For example, the African Capacity Building Initiative (ACBI) clearly supports regional institutions in Africa. It encourages the strengthening of African institutions with regard to their indigenous perspectives and education in order to safeguard the environment and improve human conditions.

James (2004) argued that urbanization policies:

- should be tailored to regional conditions and needs;

- must recognize the importance of, and create economic conditions conducive to, expanding private enterprise in towns;
- should give much more attention to strengthening market linkages between urban and rural areas; and
- should encourage investments in public services, facilities, infrastructure and productive activities in a pattern of 'decentralized concentration'.

Conclusion

In this chapter, an attempt has been made to show how development is changing Africa's landscape and the problems associated with the extraction of raw materials have been highlighted. Most importantly, it has been shown in this chapter that there is a heavy dependency on development paradigms from developed nations without careful input of indigenous perspectives. A well planned strategy for harnessing the resources in Africa must contain a strong African vision based on the desires and knowledge of Africans.

There is no doubt that, given the global development trends and the continuous presence of multinationals in Africa's development, there will always be environmental degradation associated with growth. The negative environmental impacts can be reduced if policies that are carefully followed and adhered to are put in place. The enforcement of laws and regulations is crucial in environmental protection. Probably the most crucial emphasis of policy is one that is built around education, empowerment, capacity building and the involvement of local people in all phases of development strategies. This means that local people would become economically and educationally empowered so that they can improve their communities. Partnerships are essential elements of successful protection of the environment and development of a community's resources. The partnerships between non-governmental organizations (NGOs), private voluntary organizations (PVOs), governmental organizations and local people can create 'win-win' situations that would be economically and environmentally sound.

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