

The Paradox of Africa's Poverty: the Role of Indigenous Knowledge in Zimbabwe's Environmental Management Issues

By

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ABSTRACT

The problem of environmental degradation has turned into a question of our time. It is true that every group of people is at any time, involved in a struggle for survival with its environment, both human and physical. Humanity is now experiencing how fragile the environment is which supports its very existence. The notion of sustainability implies responsible behaviour towards future generations. Since there is nothing sacrosanct about the existing stock of resources, there is need for ethical environment in many parts of the world and this has been subject of great international concern, hence the Psalmist declared: "The heavens declare the glory of God, and the firmament shows his handwork" (Psalms, 19:1). One of Zimbabwe's political ambitions is the process of nation building, a theory which denotes a process by which all people of a particular nation supports the principles upon which their country is governed, support the economic processes of the country, and at least share a basic minimum set of social values, through the indigenous knowledge systems for the country to be able to prosper. Existing interdependence and responsibility eco-strategies should inspire Africa's ongoing environmental conservation learning processes.

INTRODUCTION

Because of its unique history, the history of slave trade and colonial rule, Africa suffered serious cultural dislocations. Before colonialism, Africans perceived their culture as a decorative of man's concrete material realities. The Africans had a rich heritage of managing and living with the environment. Before the introduction of the farming communities, Southern Africa was dominated by hunter-gathers. Their nomadic life-style controlled and preserved their environment. To them this was sustainable livelihood which enabled exploitation of resources, the direction of investments, the orientation of technological development, and institutional changes which should be made in consistence with the future, as well as their present desires, hopes, and aspirations. Since environmental management includes social and cultural factors, environmental action plans and national conservation programs should be drawn up by the society affected and not by outside agencies. Man, in his struggles for survival, enters into definite relations with both his natural and human environment in order to facilitate the production process. The environment then becomes not just a resource to be exploited for human settlement, food, and energy production, but as something that has an intrinsic value and rights. These are the economic relations, which are then regulated, coordinated, and enforced by a political system. Then:

...the community develops a cultural environment in the economic and political processes, both as a product of these processes and simultaneously with them as a means of cementing the economic and political structures (Ngugi, 1981).

This dialectical materialism is attributable to Ngugi's Marxist persuasion. Colonialism, sought to obliterate all of our cultures but cultural resistance, through which people are able to maintain their peculiar identity and dignity, made the struggle for protection of natural environments have some long-term benefits for humans. It is an old adage that nature is property; resources should be managed for sustainable use, hence, the need to have modern technologies to manage their food sources, in particular, and environment, in general. The interrelatedness of religion, culture, and environment is explored from a number of angles. Religion is an aspect of culture and so is the environment (from the French word *environner*), the natural world, and human society. Our cultures compose stories to account for the origin and nature of the world; these oral traditions have, according to Mathews (1994), an important function in orientating human beings within the world. The paper further explains Africa as a community with a cosmology that represents the world as hospitable to human interests with more

positive interactions with the environment, which creates a better chance of happiness. The causes of environmental problems in Africa lies in the models of development and patterns of consumption promoted and enjoyed by the rich industrialized countries. It is because of this fact that “*poverty, unemployment, landlessness, homelessness, environmental degradation and a host of other problems continue to plague developing countries*” (Hapanyengwi-Chemhuru, 1998). Local cultures offer resistance to modernity and development when top-down development practices are not compatible with the values of the affected people. People have the power to slow down, change, or block hostile practices that they view as a threat. Thierry Verhelst and Wendy Tyndale (2002) stated that, “*what matters in a culture is its capacity to generate self-respect, the ability to resist exploitation and domination, and the ability to offer meaning to what people produce and consume, to land, liberty, life and death, pain and joy.*”

There is need to have dialogue in promotion and knowledge generation techniques in finding solutions to the global development challenges that bedevil not only Africa but the whole world. Unsustainable models of development in Africa will continue to fuel environmental degradation. Sustainable development, through indigenous knowledge, has formed part of the discourse of politicians and policy-makers. But how this indigenous knowledge promotes dialogue and generates knowledge processes in contemporary Africa are left out; it is this void that the paper seeks to fill. There is need to blend this traditional African wisdom in environmental management with modern techniques because “*for a people to have control over its present existence and its destiny, it has to know its past and especially establish some continuity with the best values of its history*” (Hadebe, 1998). It is colonialism that broke the umbilical cord which linked the African people with their natural and cultural environments. In emphasizing the indispensable role of culture in all our struggles to survive and for any societal development, Munashe Furusa (1998) argues that, “*each culture has operative value systems and behaviour patterns it has generated for the achievement of its [own] agenda.*” Preservation of our cultural heritage and adoption of environmentally sound techniques that incorporate local culture and its indigenous knowledge systems are wanted.

WHAT INDIGENOUS KNOWLEDGE SYSTEMS ARE

Knowledge is considered the cornerstone of every form of development. Development as a “*global endeavor to attain a decent and humane society*” needs to be integrated by the promotion of indigenous knowledge. The functions of a people’s philosophy everywhere is to critically examine the intellectual foundations of our life, using the best available modes of knowledge and reflection for the well-being of Africans. A well-known science journalist by the name John Madeley (2004) wrote in an editorial in the International Agricultural Development journal that, “*indigenous knowledge is the largest single knowledge resource not yet mobilized in the development enterprise...*” Knowledge, in its diverse forms, plays an important and appropriate role in community-based and participatory approaches that aid development. By definition, indigenous knowledge systems (IKS) are “*the complex set of knowledge and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area*” (Web page, 29 July 2004). There are psychological, intellectual, and economic reasons, which basically stem from the mode of evolution of the historical process in the African continent, as well as the structures of intellectual dominance and dependence associated with colonial and postcolonial hierarchies and power dynamics.

THE PARADOX OF AFRICA’S POVERTY

There are many development problems that are largely confined to Africa. Some of these problems include lagging primary school enrolments, high child mortality, and endemic diseases (like malaria, HIV, and AIDS). There is severe disruption of peaceful African lives by conflicts and civil wars. The most important resource is the orally transmitted document whose wisdom is represented by old aged Africans and the oral words are the “*repository of African indigenous lore of life...[whose] strategy of nurturing memory in the practical site of orality is a very effective system of knowledge generation, advancement and transmission, or education*” (Nzewi, 2007). The place of Africa in global economy has been eroded with declining export shares in traditional primary products, little diversification into new lines of business, and loss of skilled manpower to other regions. A number of African countries that view indigenous knowledge as valuable for new biological and ecological insights, natural resource management, conservation education, protected areas, and environment assessment have made tremendous inroads in economic reforms, improving macro-economic management, liberalizing markets

and trade, and widening the space for private sector activity. According to the Mataatua Declaration from the First International Congress on the Cultural and Intellectual Property Rights of Indigenous Peoples in 1993 (Annex 7), governments and national and international agencies must “...ensure current scientific environmental research is strengthened by increasing the involvement of Indigenous communities and of customary environmental knowledge.”

The paradox of Africa’s poverty lies in the fact that the indigenous peoples and local communities often have highly sophisticated knowledge, which can be successfully implemented to manage ecosystems’ sustainability. It is the West that has been tapping this indigenous and local ecological knowledge to their advantage. The indigenous peoples were rendered victims of physical and cultural genocide by the perpetrators who were clearly motivated by hate and hostility towards them. Even today our African leadership is politically powerless, thereby, exposing us to be vulnerable to the forces of the industrialized society. So the destruction continues today as economic forces, including logging, mining, and development projects, accelerate in response to increasing population pressure and consumption.

THE CONCEPT OF ENVIRONMENTAL MANAGEMENT

Environment is a word that comes from Latin *inviron*, which means “within a circle”. This refers to our physical environment. It is these specific conditions (trees, soil, rocks, air, water climate, etc.) that we actually depend upon for our existence and activities; however, they are under threat from all human beings, especially the rapidly-increasing populations of poor developing African countries. Africans have strong memories of their local practices; this motivates them as they rely upon their inherent environmental management skills.

The fundamental causes of environmental problems in Africa lie in models of development and patterns of consumption promoted and enjoyed by the rich industrialized countries. It is because of this fact that “poverty, unemployment, landlessness, homelessness, environmental degradation and a host of other problems continue to plague developing countries” (Hapanyengwi-Chemhuru, 1998).

There is need to find amicable solution to the global development problem that bedevils Africa. Without this, the enormity of social injustice, effects of great extremes of wealth and poverty, coupled with

unsustainable models of development in Africa will continue to fuel environmental degradation. The present researcher believes that social injustice and inequities are critical factors in both environmental degradation and the distribution of poverty. The destruction of the natural environment results in loss of the biodiversity that is essential for the perpetuity of human and animal life. Social, economic, cultural, and political factors determine the nature of people's relationship with their urban or rural environment. The presenter is not yearning for a known bliss in terms of people's use and control of their natural resources. Gloria Emeagwali (2003) aptly observed that the recognition and appreciation of IKS is a source of healing of therapeutic import in the context of unhealthy imbalances, distortion, trivialization, and neglect as inflicted by the eurocentric education and governance. She adds on that tapping into the intellectual resources associated with IKS is not only cost effective but also relevant and indispensable for environmentally and ecologically sensitive activity.

ROLE OF CULTURE IN SUSTAINABLE DEVELOPMENT

This paper describes the novel opportunity offered by environmental preservation and management skills in traditional African societies, which include the usage of totemic praises, proverbs, riddles, and folktales with a transparent accounting system of resource depletion. These oral traditions used to, and still, provide a critical means to manage and preserve the surroundings for sustainability with a measure of the resulting environmental impact. African indigenous knowledge systems permeate all facets of life leading people to appreciate and take note of the fact that culture is far from being a superficial adjunct to life. Culture becomes "*a matrix, the software of social life, its 'symbolic engine'. It can be a source of positive dynamism*" (Vehelst and Tyndale, 2002). There is an urgent need for sustainability in how we manage the environment. This urgent need is yearned for in the midst of a growing destruction of non-renewable resources and the ceaseless degradation of the African landscape. Since culture in most development programmes is not being incorporated, cultural revitalization is wanted to enhance development by generating a sense of self-confidence and mutual trust. This leads to more participative democracy, to more responsible citizenship, to increased economic effectiveness, to creative technological change, and to more sustainable poverty reduction (Vehelst and Tyndale, 2002). If African indigenous knowledge systems, as a lived culture, are lively engaged, they become both a heritage and a project. They give the African continent meaning, as well as direction. If these African indigenous knowledge systems are strictly adhered to, then African culture, in the words of the Mexican poet,

Carlos Fuentes (Verhelst and Tyndale, 2002), “*is like a seashell wherein we can hear whom we have been and listen to what we can become*”. Any developmental project must be embedded in local culture or it fails to take off. After a serious realization at national and international levels of decision-making, it proved prudent that a healthy society needs a healthy environment. People adapt and transform local practices so that they suit their changing cultural, social, and economic needs of their immediate surroundings. The acceptable changes are integrated gradually into the beliefs, norms, and value system of the indigenous people. The World Commission on Environment and Development (WCED), in the 1987 Brundtland Report, *Our Common Future* defined sustainable development as:

...development that meets the needs of the present without compromising the ability of future generations to meet their own needs... Sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations (WCED, 1987 :8).

Sustainable development is about change, which should provide a channel for development to take place in harmony with environmental protection and resource management, thereby, promoting a relationship between people, as well as the relationship between and their environment. Susan Waffa-Ogoo, Secretary of State for Tourism and Culture of The Gambia, agrees that:

It is not all of our societal norms and values, customs and beliefs that can be said to enhance development, but there are those that have helped to keep our people together for centuries and are such an important value system that, in spite of increasing modernization and development, they need to be preserved for posterity. I believe this is where the equation lies, showing that development is inextricably linked to the people, for whom it should bring some fulfillment in life and thus improve upon their living standards in a sustainable way.

Africa is rich in indigenous knowledge and, therefore, invests in environmental conservation. Areas that are critical to human life are global climatic changes that can cause flooding of islands and deltas, extreme droughts in arid lands, starvation on an unprecedented scale reduction in biodiversity, and the depletion of the ozone layer due to emission of gasses which also contribute to the so-called “greenhouse effect” of global warming.

PROMOTION OF GLOBAL COOPERATIVE GOVERNANCE

Towards the end of twentieth century, everything is fast becoming global due to rapid socio-economic, cultural, and technological developments. We are, therefore, heading towards global civilization. Unfortunately, this global world is predominantly guided by the principle of competitiveness, which is not systematic and organized to effectively meet the hopes, needs, and aspirations of the majority of so-called third world countries. There is need for this globalization to generate an integrated approach that does not divide the world. In order to promote sustainable development in Africa, developed countries should enhance their integration through market exchanges and scientific and technological transfers. Development that is mediated by means of global quality should be rooted in local customs, indigenous knowledge, abilities and traditional communication habits, which used to be the case before colonialism. Global quality requires an evaluation of local resources and capabilities linked to hybridization of technology where traditional ability combined with advanced technology so that the creativity of all partners in environmental management is made use of. This excites cooperative platforms that would favor the common pursuits in promoting sustainable human and social co-development on a global scale. Global quality needs to be re-introduced into policies for sustainable global human co-development.

POPULATION ISSUE AND CULTURE IN ZIMBABWE

There is a complex relationship between environmental degradation, poverty, and population growth. The patriarchal traditions in Zimbabwe used to accord a high status to men who father many children and preference given to male children. Women were, and in some places still are, treated as passive objects that are there to be acted upon by the males. Chimhundu (1987) clearly examines the socio-cultural perception of women in a male-chauvinist sexual discourse, which use “*expressions in which the men are the subjects who DO and the women are the objects who are DONE.*” The society’s valued women for their childbearing capacity and the number of children a man had were a yardstick to measure a man’s worthy. Population growth is closely related to global environmental degradation. Population increase is among a list of complex and interacting social, economic, political, and ecological factors, which pressurize on the environment and natural resources. A reduction in the numbers of

developing countries' populations will have a limited effect on conserving the world's natural resources. The Brundtland Report (1987) states that,

...the population issue is not solely about numbers. And poverty and resource degradation can exist on thinly populated lands, such as the dry lands and the tropical forests. People are the ultimate resource. Improvements in education, health, and nutrition allow them to better use the resources they command, to stretch them further. In addition, threats to the sustainable use of resources come as much from the inequalities in people's access to resources and from the way they use them as from the sheer numbers of people. Thus concern over the "population problem" also calls forth concern for human progress and human equality.

The status of women in Zimbabwe is gradually improving so much that they can make use of birth controls without their husbands' consent. African culture that used to forbid women's usage of contraceptives now has given in because of the awareness in women's reproductive rights, women's status and their level of education, changing patriarchal attitudes and structures. Women's folk knowledge has existed in undocumented forms that ran parallel with knowledge contained in texts.

INDIGENOUS KNOWLEDGE SYSTEMS AND THE AFRICAN ENVIRONMENT

Africa has vast unexploited potential-in resource-based sectors, as well as in processing and manufacturing. The dynamic power of indigenous knowledge is manifested through a continuous process of experimentation, innovation, and adaptation, thereby, enabling this knowledge to blend with science and technology. This is not a new phenomenon to Africans because Ngwabi Bhebe (in his article in Chiwome et al, 2000) adroitly puts it that:

Before the European conquest of Africa, Africans had built up a pool of knowledge and technology which they used to sustain agriculture, human and animal health, industrial production involving food processing, metallurgy, leather tanning, timber seasoning, fermentation of beverages, making of dyes, mining and architectural engineering. But political subjugation by Europe so traumatized Africans that many of them lost confidence in and looked down upon their own culture, forcing some of them to view and embrace Christianity and Islam as a progressive move but without totally losing their old cosmology or basic beliefs.

African communities have continued to improve their health and agricultural systems in the face of the hostilities of colonial and neo-colonial institutions. Their indigenous knowledge has been, and still is, an immensely valuable resource that provides humankind with insights on how communities have interacted with their changing environment. Africa's figureheads of tradition are community leaders, such as chiefs and elders, who enforce management of orature through taboo systems, enunciation of customary laws through proverbs and other controls, and sanction systems. Contrary to the pre-colonial era, the colonial approach segregated local people in managing resources by creating national reserves and parks. Pieces of legislation that were put in place "*prohibited locals from accessing their natural resources and placed all de jure control in the hands of the colonial administrators*" (Asibey et al, 2000). Through usage of proverbs, there are still abundant resource management skills within local communities, despite heavy doses of foreign influences that led to erosion of African traditional culture. Proverbs exude power and value of applying indigenous knowledge skills imbued with modern techniques that enhances sustainable management of natural resources. They facilitate local initiatives. Indigenous knowledge systems embedded in proverbs are significantly vital for sustainable development, since their neglect leads to environmental degradation. Showing this neglect of indigenous knowledge, the Minister of Lands and Forests in Ghana is quoted in a keynote address on deforestation saying:

I am concerned about the apparent irretrievable submergence of our own indigenous structures for the conservation of our natural resources. Time was when indigenous authorities and organisations made local rules to protect important water bodies, useful plants, watersheds and river courses. This is how our sacred groves, which today constitute the rare islands of biodiversity in the background of deforested countryside, were reserved. Indeed, agro-forestry, which is now an accepted scientific practice, is an offshoot of indigenous trees management. It developed simply through the prohibition of exploitation of useful trees in the range and within farm systems. Lack of traditional control over the environment and the consequent relaxation of indigenous conservation regulations and laws have contributed, in no small measure, to today's environmental degradation (Asibey et al, ibid: 53).

The Minister's remarks show the widespread acceptance of proverbs as carriers of indigenous knowledge, thereby, playing a crucial role in sustainable development of local communities.

AFRICAN TRADITIONAL MEDICINE AS INDIGENOUS KNOWLEDGE

The term *traditional medicine (Indigenous medicine or folk medicine)* describes medical knowledge systems that have been developed over centuries within various societies before the advent of modern medicine. Traditional medicines belong to a broad category that includes practices, such as herbal medicine, traditional Chinese medicine, South African Muti, Yoruba Ifá, as well as other medical knowledge and practices in Africa and all over the globe. World Health Organisation defines traditional medicine as:

the health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses or maintain well-being.

In Africa, up to 80% of the population (a figure verified by the World Health Organization), uses traditional medicine for primary health care. There are no qualms or doubts that traditional medicine (from the above percentage) has a lot to offer, but in many cases it has been unjustly ignored or replaced by modern, Western-type medicine. Ezra Chitando (Chiwome et al., 2000) puts it that:

Although Western scientific knowledge is dominant in terms of the power relations, it would be folly to assume that indigenous knowledge has no role in the modern world.

In his *Africa's Cultural Revolution*, p'Bitek has condemned what he terms ape-manship of European culture by Africans. Most of the dressing, music, education and films of the African people are manifestations of a decadent Western culture. Paradoxically, it is the intellectuals who claim to be enlightened, who are expert ape-men and African cultural heritage is entrusted. Our traditional healers should be recognized as professional medical practitioners, because they are just that. Three factors that legitimise the African healer are as follows: the subjective reality of the healer; the objective reality based on his/her successful cures; and the belief systems of the community (locally and globally influenced), which impacts the first two (Laguerre, 1987). African traditional healers even command the

avenues into the soul of their patients and the capacity to heal various ailments. Laguerre (1987) claims that rejected knowledge (like some types of indigenous or folk knowledge) have three types of adherents. These include those born and socialized in it who would be permanent believers, temporary believers who turn to it in crisis times, and those who only believe in specific aspects, not in all of it. There are also three types of transmission of indigenous knowledge or medicine: the society and community, the family, and the individual (through dreams). The modern and imported things from the West should be renounced and people stick to an African culture that is rich and beautiful, and complement it with the modern technological advancement that is there. Since the *Earth Summit*, there were dozens of conferences, seminars, and workshops that have been held by the Indigenous peoples to discuss the evolving indigenous Peoples' Rights debate. In the Charter of the Indigenous-Tribal Peoples of the Tropical Forests (Article 44), their expectations and concerns are explicitly stated:

Since we highly value our traditional knowledge and believe that our biotechnologies can make an important contribution to humanity, including "developed" countries, we demand guaranteed rights to our intellectual property, and control over the development and manipulation of this knowledge.

The billion dollar question as to who owns traditional resources is very important. Indigenous medicine is part of African oral traditions that is usually unwritten and transmitted orally until someone *collects* it. Within African culture, elements of indigenous medicine knowledge are diffusely known by many adults, gathered and applied by those privileged few in specific roles of a healer, mid-wife, witch, or dealer in herbs. The concept of property refers to rights and which are owned, tangible things (such as land), natural resources, and goods or intangible, like services and knowledge. The major difference is that in Western societies property rights can be exchanged but in traditional societies many of the resources are inalienable. The biggest problem is that Indigenous Peoples' territories are expropriated for ownership by corporations or by the state. They cannot easily control access to their resources and find their livelihoods threatened. Some institutions, including corporations and universities, "*own*" Indigenous Knowledge. For example, the case of the African soapberry plant used for centuries by Ethiopian communities in East Africa has become the subject of a patent belonging to a United States university. Huge profits are now being channeled towards the holders of patents. These profits should go to the right owners because the knowledge of the indigenous peoples benefit all humanity therefore the beneficiaries of indigenous knowledge must be the direct indigenous descendants of such knowledge.

INDIGENOUS SOIL FERTILITY MANAGEMENT PRACTICES

Most African farmers have learnt how to manipulate and derive advantage from local resources and natural processes using indigenous practices scientifically, known as principles of agro-ecology, without knowing the existence of this term. Livestock form an important component of the agro-forestry system where animals freely graze and are fed with forage gathered from the vegetation. In Zimbabwe, like many other African countries, farmers put grass and leaves in animal kraals that are left to decompose, thereby keeping a continual litter layer and organic manure through which nutrients are recycled. This method of recycling is sufficient to maintain soil fertility without the usage of the toxic chemical fertilizers. The indigenous African farmers have developed various techniques to improve or maintain soil fertility. In addition to these, the sites of termite mounds are particularly good for growing maize, sorghum, and other heavy feeder crops. These anthills are dug together with ant refuse and are spread in fields as high-value crop fertilizers.

SHIFTING CULTIVATION IN ZIMBABWE

Sometimes known as *swidden* agriculture, shifting cultivation has been and still is practiced in most African societies so as to manage soil fertility. The process involves the alternation between crops and long-term forest fallow. Typical of the Chitemene shifting cultivation in Zambia, Zimbabwe's forest is cut and burnt to clear the land and provide ash as fertilizer or lime for the soil. Farmers get high crop yields for the first few years and then become less with the declining of the soil fertility or even the invasion of weeds and pests. The fields are left fallow for a number of years so that they regain fertility.

AFRICAN GENETIC RESOURCE MANAGEMENT

Traditional African agriculture is characterized by its great diversity of genetic resources. Many farmers are highly skilled in managing this diversity so as to ensure sustainable farming systems. African farmers, since time immemorial, have learnt to grow their local varieties of crops without having to face hustles of buying seeds from shops. Indigenous food production systems involve complex processes of producing food from diversified agro-ecological environment to meet the subsistent needs of the local

people. Such systems are dynamic and complex, thereby reflecting generations of careful observations of the agro-ecological and socio-cultural environments (Rajasekaran, 1992). It is not only the local crop varieties that are genetically managed, but also the numerous local breeds of livestock indicate the high skills of traditional livestock-keepers to manage genetic resources. Local farm breeders naturally select for specific traits that would adapt to and can survive and produce under certain conditions. Diseased animals that are weak and have poor mothering qualities are sold while those with proven disease and drought resistance are retained.

AFRICAN CLIMATIC MANAGEMENT PRACTICES

Our local climate plays a dominant role in the lives and fortunes of African farmers. The development of several mechanisms of influencing microclimate improves the conditions under which crops and animals can grow. African farmers have indigenous knowledge systems that significantly informed people about the changes in climatic patterns. The singing of the *haya* bird warned farmers of the coming of the first rains. Farmers influence microclimate by retaining and planting trees, which reduce temperature, wind velocity, evaporation and the direct exposure to sunlight, and intercept hail and rain.

INDIGENOUS PEOPLE'S SUSTAINABILITY POLICY

It is more than necessary to empower African communities and recognize that,

the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate (pg 86).

Recognition of African values, traditional knowledge and resource management practices of Indigenous Peoples in order to create and promote sustainable development is critical. African people enjoy territorial security and are given their freedom to make decisions, guided by the principles enshrined in their rights, which they tend to exercise to development in ways, which provide long-term environmental benefits. Dialogue between conservationists and developers, on one hand, and the

indigenous peoples on the other, should be based on respect for human rights; putting into consideration the right to development is critical for sustainability. This is summed up in the following clause:

Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands, territories and other resources, including right to require that States obtain their free and informed consent prior to the approval of any project affecting their lands, territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources. Pursuant to agreement with the indigenous people concerned, just and fair compensation shall be provided for any such activities and measures taken to mitigate adverse environmental, economic, social, cultural or spiritual impact (UN Draft Declaration on the Rights of Indigenous Peoples, Clause 30).

Agenda 21 (Chapter 26:1) emphasizes that any strategy for sustainability involving Indigenous Peoples assume approaches to sustainable development that require;

- a just process of negotiation leading to agreement on land titles and access to resources,
- respect for local, indigenous decision-making systems,
- collaboration with community-based decisions making institutions, and
- protection of indigenous sciences and knowledge systems.

Governments, NGOs, scientists, environmentalists, planners, and corporations give the false impression of the views of Indigenous Peoples and that they are effectively taken into consideration by deliberately using words like *participation* and *consultation* when in fact is, there are not. Indigenous peoples should be viewed in negotiation as equal parties when formulation of strategies, policies, and projects are considered community-controlled should be initiated by indigenous communities in accordance with their own priorities and criteria even control in terms of planning and their implementation.

CONCLUSION

Albert Einstein (cited in Vehelst and Tyndale, *ibid* :11) once observed that if you have only a hammer, all problems would look like nails. This paper tried to portray the important role that Indigenous Knowledge can play in making development projects more effective and efficient. It highlighted developments that are considered as innovative steps, necessary to enable eco-strategic and eco-consistent changes with technological issues framed in coherent environmental management, socio-

cultural, and legal arrangements. Human cultures are fast disappearing at an unprecedented rate. Even languages, being the storehouses of people's intellectual heritages and the framework for their unique understandings of life will disappear within a century if they are not conserved. If indigenous knowledge systems are not integrated into the global economy, as suggested by the paper, there will be loss of indigenous social control, displacement, marginalisation, dependency, deprivation and want, impoverishment disease, and malnutrition. People in Africa are still sometimes considered backward because their culture is seen as hindering the achievement of national and international economic goals. Gone is the time when Indigenous Peoples used to find themselves minorities on their own lands. The paper has captured how indigenous knowledge contributes to cost-effective and sustainable strategies. It has been proven beyond any reasonable doubt that indigenous knowledge systems are a resource that provides a firm foundation for sustainable and environmentally sound approaches to agriculture, in particular, and natural resource management in general. This conclusion would be incomplete without quoting the Russian novelist Dostoyevski, who wrote that beauty could save the world. Nelson Mandela (cited in Vehelst and Tyndale, *ibid* :22) encouraged Africans by adding that, "*We are meant to shine...We were born to make manifest the glory of God that is within us. It is not just in some of us. It is in Everyone*". The paper has also shown, among other things, that complementary policies are needed to ensure sufficient levels of investment in conservation. African governments may be beset by Utopian paradoxes and ambiguities involved in managing the environment, but the efforts of indigenous knowledge systems remain as a powerful vision for decision makers who are concerned about sustainability issues. Institutionalization of private property rights, as was shown in the paper, may not be a sufficient tool to initiate sustainable resource management. The paper has noted that tapping into the intellectual resources associated with IKS is not only cost effective but also relevant and indispensable for Africa's environmentally and ecologically sensitive activities. It is at the level of economic sustainability, self-reliance and, cost effectiveness, however, that African Indigenous Knowledge Systems (AIK) continues to prove its viability and strength in Africa.

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