“Cosmovision and African conservation philosophy: indigenous knowledge system perspective”

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Cosmovision and African conservation philosophy: indigenous knowledge system perspective

Abstract

Cosmovision is the worldview of a society that is deeply imbedded in the way in which that society is organized and evolves over time. It is a society's attempt to explain and better understand all that surrounds it, including its place within the cosmos, or universe and how it conserves it environment. In Africa, like elsewhere, indigenous knowledge systems (IKSs) were used to administer peace, harmony, and order amongst the people and their physical environment. However, with the advent of colonialism in Africa, IKSs were not only marginalized, but demonized leaving their potentials for establishing and maintaining a moral, virtuous society, unexploited. It is in this light that this article argues for a correction to the vestiges of colonialism. The article adopts examples of IKS success stories in pre-colonial era showing the beauty of the undiluted African indigenous knowledge systems and their potential for establishing a moral, virtuous society. To this end, the article argues that Africa, today, is in the grips of high crime rates, serious moral decadence, and other calamities because of the marginalization, false, and pejorative label attached to the African IKSs. This article criticizes, pulls down, and challenges the inherited colonial legacies, which have morally and socially injured many African societies.

Keywords: cosmovision, indigenous, knowledge, conservation, philosophy, taboos.
JEL Classification: D83, O13, O15.

Introduction

Cosmovision is the worldview of a society that is deeply imbedded in the way in which that society is organized and evolves over time. It is a society's attempt to explain and better understand all that surrounds it, including its place within the cosmos, or universe (Carrasco, 2013). To this ordeal, this article is an attempt to show that indigenous knowledge system is vital to environmental conservation in Africa. The article will highlight that the true authors of Greek philosophy, which spread the whole world, were not the Greeks philosophies. But it was the knowledge system of people of Africa, commonly called the Egyptians. A table in the succeeding paragraphs is put to show the forty-two ethical declarations, which Africans used to preserve biodiversity.

The ethical declarations remained for generations and centuries in the form of traditional knowledge system, until the conquest of Egypt by Alexander the Great, and the movement of Aristotle and his school to compile Egyptian teaching and claim it as Greek philosophy. In 1893, Reclause commented about Egypt in his book "The Earth and Its Inhabitants" saying, A great civilized power during the period in which Europe was being overrun by savage tribes. Arithmetic, architecture, geometry, astrology, all the arts and nearly all of today's industries and sciences were known in Egypt, while the Greeks lived in caves. In the autumn of 332 BC., Alexander the Great conquered Egypt an event that marked the beginning of the Greek period in Egyptian history. Alexander the Great took all Egyptian books and created the Royal Library of Alexandria or Ancient Library of Alexandria which was one of the largest and most significant libraries of the ancient world. It was dedicated to the Muses, the nine goddesses of the arts.

For this reason, the so-called Greek/Western philosophy is stolen Egyptian/African indigenous philosophy and there is no dividend in trying to adopt the Greek/Western philosophy for biodiversity conservation. There is a growing consensus today that traditional institutions provide considerable protection of ecosystems and biodiversity without governmental juridical restrictions (Barrow & Pathak, 2005). Brought together, religious beliefs, traditional beliefs, cultural mores and practices play a crucial role for the successful conservation of the environment and specific organisms, especially in the developing countries (Berkes, Folke & Colding, 2000). Some schools of thought have noted that among the rural communities of the world, the preservation of the environment has an inextricable link to the culture of the people (Anoliefo, Isikhuemhen & Ochije, 2003).

Forty-two ethical declarations. Budge (2008) in his book, *"The Egyptian book of the dead"* posited that 2,000 years before the Ten Commandments of Moses were received at Mt

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Sinai, the 42 principles/ethics of Ma'at (the divine principle) were one of Africa's, and the world's oldest sources of moral and spiritual instruction as their intelligence system. Ma'at, the Ancient Egyptian divine Principle of Truth, Justice, and Righteousness, was the foundation of natural and social order and unity. Ma'at was also personified as a goddess regulating the stars, seasons, and the actions of both mortals and the deities, who set the order of the universe from chaos at the moment of creation Ancient Africans developed a humane system of thought and conduct which has been recorded in volumes of African wisdom literature.

Table 1. The 42 ethical declarations

1.Thou shalt not kill, nor bid anyone kill	2.Thou shalt not commit adultery or rape.	3.Thou shalt not avenge thyself nor burn with rage.
4.Thou shalt not cause terror	5.Thou shalt not assault anyone nor cause anyone pain.	6.Thou shalt not cause misery.
7.Thou shalt not do any harm to man or to animals	8.Thou shalt not cause the shedding of tears.	9.Thou shalt not wrong the people nor bear them any evil intent
10.Thou shalt not steal nor take that which does not belong to you	11.Thou shalt not take more than thy fair share of food	12.Thou shalt not damage the crops, the fields, or the trees.
13.Thou shalt not deprive anyone of what is rightfully theirs.	14.Thou shalt not bear false witness, nor support false allegations.	15.Thou shalt not lie, nor speak falsely to the hurt of another.
16.Thou shalt not use fiery words nor stir up any strife.	17.Thou shalt not speak or act deceitfully to the hurt of another.	18.Thou shalt not speak scornfully against others
19.Thou shalt not eavesdrop	20.Thou shalt not ignore the truth or words of righteousness	21.Thou shalt not judge anyone hastily or harshly
22.Thou shalt not disrespect sacred places	23.Thou shalt cause no wrong to be done to any workers or prisoners	24.Thou shalt not be angry without good reason.
25.Thou shalt not hinder the flow of running water	26.Thou shalt not waste the running water	27.Thou shalt not pollute the water or the land
28.Thou shalt not take God's name in vain.	29.Thou shalt not despise nor anger God	30.Thou shalt not steal from God.
31.Thou shalt not give excessive offerings nor less than what is due.	32.Thou shalt not covet thy neighbor's goods	33.Thou shalt not steal from nor disrespect the dead
34.Thou shalt remember and observe the appointed holy days	35.Thou shalt not hold back the offerings due God	36.Thou shalt not interfere with sacred rites
37.Thou shalt not slaughter with evil intent any sacred animals	38.Thou shalt not act with guile or insolence	39.Thou shalt not be unduly proud nor act with arrogance
40.Thou shalt not magnify your condition beyond what is appropriate.	41.Thou shalt do no less than your daily obligations require	42.Thou shalt obey the law and commit no treason

Source: Budge (2008).

1. Objectives

The objective of this article is to state the importance of native intelligence on natural resource conservation as a substitute to Western or European ideas of resource conservation. Indigenous people have been and are custodians of some of the most biologically diverse territories in the world, both aquatic and terrestrial. Again, the article will provide the background of native intelligence in Southern Africa and how this has resulted in resource conservation prior to colonial ways of resource conservation.

The specific objectives of the article are:

- To distinguish information on natural resources conservation from Western phenomena and local IKS.
- To identify values about natural resource phenomena implied or explicitly stated in IKS.
- To determine human behavior vis-a-vis the environment based on the knowledge of natural resources.
- To determine the relevance and applicability of the findings to environmental education and natural resource management.
- Zimbabwe will be used as a case study for IKS as success story in ancient time.

1.1. Rationale for the study. The article contributes to indigenous peoples' governments in terms of resource conservation planning through the National Conservation Strategies. Again article gives prominence to the role of formal and non-formal education (NFE) in environmental education. Current efforts include environmental education components in the syllabi for agriculture, geography, science and education for living. This article makes a contribution to the achievement of the National Conservation Strategy through the provision of cultural based materials for environmental education.

2. Background of the article

2.1. Definition of IKS. Traditional Ecological Knowledge (TEK): An accumulated body of knowledge that is rooted in the spiritual health, culture, and experiences of those who are close to the lands. It is based on an 5 intimate knowledge of the land, its physiographic and natural features, climate, and wildlife, and the relationships between

all aspects of the environment. Although in many uses it refers to knowledge of indigenous peoples, others with intimate knowledge and experience of the land also have developed traditional ecological knowledge (McNeely, 2009). Traditional knowledge includes, but is not limited to knowledge of:

- local behavior, distribution or cycles of fish, wildlife and plant life;
- broader climatic changes or cycles;
- local ecosystem or geomorphologic responses to natural or human disturbances;
- local population densities or changes in fish and wildlife;
- qualitative information about the utility of a variety of medicinal, edible, or material resource plants;
- requirements or activities needed to maintain or enhance local ecosystems (McNeely, 2009).

2.2. Nexus between African indigenous knowledge systems and the cosmological redshift (world). Fundamentally, the African traditional customs and practices emphasize the close connections between the empirical world and the cosmos. Parallels can be drawn between the consequences of good and bad, given that the cosmological world (ancestors and God/ the creator, respectively) govern the empirical world, and, in consequence, judges humanity according to the virtue of their deeds, as shown by the 42 ethical declarations in Table 1. Millar (2004) maintains that the cosmovision of indigenous people is based on three foundations: the human world, the spiritual/metaphysical world, and the natural world. He further suggests that spiritualists use extrasensory perception and intermediate between mortal beings and the dead. These knowledge systems are used, for example, in the processions of rain making ceremonies, witch-naming ceremonies, and ceremonies for appeasing the dead. In light of the coordination or facilitation roles in spiritual activities that IKSs perform, the latter should be conceived as a spiritual commitment of the 'land dwellers' to the ancestors of the land through allegiance to the traditions, values, and customs known through the knowledge systems. Even newcomers or Westerners should be introduced to both the society's indigenous knowledge systems and the ancestors of the land that are believed to protect the inhabitants of that land.

2.3. IKS dimensions. Muchena (1990) observes that rural people's knowledge covers the whole range of human experiences. A partial selection of the scope of IKS is presented below using a framework of academic disciplines.

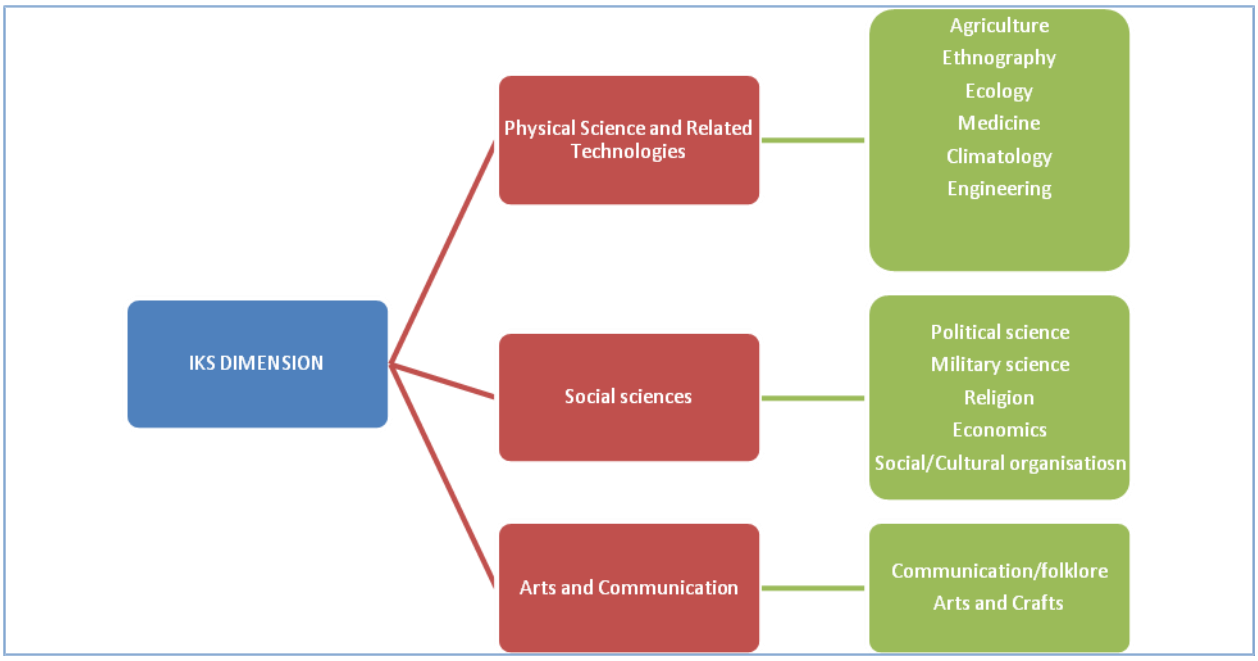

Fig. 1. IKS dimensions

Several points are worth noting about the dimensions of IKS. First, the above listing represents a tiny fraction of the scope of IKS and is given as an illustration. Second, though listed here under disciplines to facilitate the understanding for those used to Western academic framework, IKS is not so compartmentalized, but very integrated in its cognitive skills and affective domains and integrated across disciplines.

Thirdly, Muchena (1990) notes that in all the fields, each rural group has developed knowledge

encompassing theory, concepts, interrelations, factual data and attributive information of a high degree of accuracy suitable to them. Such knowledge is so good that such societies have been able to exploit them both for social organizations and productive endeavors to maintain the group. However, due to historical and political processes such as colonization and international interactions, these knowledge systems have been put at risk (Ngugi wa Thiongo, 1998).

3. The cosmovision and African conservation philosophy

3.1. Philosophy of IKS. Cosmovision is the worldview of a society that is deeply imbedded in the way in which that society is organized and evolves over time. It is a society's attempt to explain and better understand all that surrounds it, including its place within the cosmos, or universe. Titilola, Phillips, Adeniyi, Adeyeye, Slikkeveer, Titilola & Sandoval (1989) show how 19th century social sciences contributed to negative values and attitudes towards IKS through ethnic stereotypes and prejudices. In Africa, colonization and the alienating effects of Western education systems and christianization of the local indigenes contributed much to this process. The main intellectual tool used in the leveling of other knowledge hills is the Western scientific method rooted in reason and logic as the only way of knowing. Sardar (1988) describes the exclusive nature of Western science as follows:

. . . it is a tool of reduction with an essentially exclusionist methodology, and its use is limited strictly within an ontological and epistemological framework. Reason is exclusive in the sense that there is no place in science for issues of morality and values for it is pure, clinical and neutral; only those aspects of a phenomenon which are amenable to pure reason are really worthy of investigation. It is exclusive, as only those who have been specially trained in the use of scientific reasoning have the right access to knowledge and are the true judges of what constitutes scientific knowledge ... it is exclusive in that reason constitutes the only legitimate way of knowing and is the only arbitrator of truth.

3.2. Environmental education: indigenous and Western perspective. Makina (1981) identifies four approaches to conservation education in traditional society, viz: oral, apprenticeship, social pressure and ceremonies. Parents, relatives and community elders were responsible for educating the young. It is very likely that the use of relevant proverbs would be included in such oral presentation. The apprenticeship approach occurred within the context of training for particular ages and responsibilities such as hunting or collecting forest products or herding cattle. Training for the young and adults was under the guidance of a qualified and experienced person. Conservation was also learned through regulation and normative behavior. Ceremonies such as work parties and initiation ceremonies provided further opportunities for learning. Makina (1981, p. 35) rightly concludes that, compared with the present day efforts in adult conservation education, there was more done in traditional society. He contends that today's adult is less informed, less knowledgeable about wildlife conservation than the same adult a hundred years ago. This traditional heritage provides a base for contemporary conservation education programs.

3.3. Modern methods of environmental conservation in Zimbabwe. Zimbabwe has responded to environmental problems by ratifying various International and Regional Conventions on environmental management in order to conserve the environment. The Convention of International Trade in Endangered Species (CITES) was implemented through establishment of Communal Areas Management Program for Indigenous Resources (CAMPFIRE) (Bond, Hulme & Murphree, 2001). The program involved local communities looking after their resources such as animals and forests and, in turn, benefits from the proceeds from these resources. The proceeds such as money from the sale of animals can be used for projects such as construction of schools. In 1995, Zimbabwe adopted the Convention on Biological Diversity and, in 1996, ratified the Convention to combat desertification. Its main focus was on irrigated crops, trees and livestock production in dry areas. The Montreal Protocol on Pollution and Climate, as well as Agenda 21 have been adopted in order to conserve the environment (United Nations Environment Program, 2013).

The implementation of some of these International agreements was done through various educational programs. These included Better Environmental Science Teaching (BEST) in which the science curriculum in schools included environmental issues (Chikunda, 2007). The Secondary Teacher Training Environmental Education Program (STTEEP) was introduced in the three Secondary Teachers' Colleges, namely, Mutare, Belvedere and Hillside. The main aim of the program was to introduce environmental education in all subjects (Van Petegem, P., Blieck & Van Ongevalle, 2007). The report of the Presidential Commission of Inquiry into Education Training (1999) saw the need for training people about environmental issues and to

integrate environmental education into examinable subjects. Tertiary institutions such as Zimbabwe Open University, Great Zimbabwe University, Midlands State University and University of Zimbabwe all offer some courses on environmental management (Van Petegem, Blieck & Van Ongevalle, 2007). There are institutions in Zimbabwe meant to conserve biodiversity. These include National Parks such as Chirisa, Matusadonha, Chimanimani, Gonarezhou and Hwange National Parks. They are in place mainly to preserve and protect animals and vegetation. Botanical gardens such Harare and forest reserves such as Rusitu and Chirinda forest have been used to conserve indigenous forests. However, increased population pressure and need for agricultural land and settlement have caused untold deforestation, migration and extinction of some flora and fauna. There is a need, therefore, to develop a database on indigenous knowledge related to environmental management. The modern and the traditional methods can be used together as an environmental management tool in order to conserve biodiversity in a sustainable manner.

4. Challenges in implementing an integrated environment management (IEM)

The concept of IEM in Zimbabwe is managed through the Environmental Management Act (EMA) of 2002. The post-colonial era in Zimbabwe dropped the traditional ways of environmental conservation the inherited colonial and supremacist laws in environmental legislation (Chinamora, 1995). These laws were discriminatory, foreign and inappropriate, especially in terms of the rights over the use of resources by the local indigenes in comparison to white owned commercial farms. In addition to the above, the laws did not promote proprietary and participatory environmental planning strategies (Chinamora, 1995). Traditional chiefs felt that their role as chiefs and custodians of the natural resources within their jurisdiction had been violated. They advocated for the full control and monitoring of their natural resources within their jurisdiction with technical advice and support from relevant institutions. Because of failure of these foreign and Eurocentric philosophies of environmental conservation, reverting back to IKS becomes the soul and life of biodiversity conservation. The succeeding IKS methodologies for biodiversity conservation stood the test of time and should be reinstated.

4.1. Spirituality and religious belief systems in resource conservation. According to Servaes (2008), spirituality is the relationship human beings create with the spirit world in order to manage forces that seem overpowering. Indigenous spirituality is intimately linked to the environment in which the people live. For indigenous peoples, the land is the core of all spirituality and this relationship to the spirit of the earth is central to all the issues that are important to indigenous peoples today. Spirituality is a term that requires special care in its definition. It is important to recognize the difference between spirituality and religion. Spirituality can be seen as an internal connection to the universe, which includes a sense of meaning or purpose in life, a cosmology or way of explaining one's personal universe and personal moral code. Religion, on the other hand, could be defined as a specific practice and ritual that are the external expression of some people's spirituality. What is important here is that spirituality is the relationship to the universe. Indigenous spirituality could, thus, be defined as indigenous peoples' unique relationship with the universe around them. Put another way, spirituality defines the relationships of indigenous peoples with their environment as custodians of the land; it helps to construct social relationships, gives meaning, purpose and hope to life. It is not separated, but is an integral, infused part of the whole in the indigenous worldview. Religion, from the Latin religare, meaning "to bind fast", has been defined as an institution with a recognized body of communicants who gather together regularly for worship and accept a set of doctrines offering some means of relating the individual to what is taken to be the ultimate nature of reality.

4.2. Understanding taboo wisdom among native Zimbabweans and how this wisdom affects the environment. Taboos are 'avoidance rules' that forbid members of the human community from performing certain actions, such as eating some kinds of food, walking on or visiting some sites that are regarded as sacred, cruelty to nonhuman animals, and using nature's resources in an unsustainable manner. Among Shona people, environmental taboos have a pivotal moral role toward the ontological wellbeing of both the individual person and the environment at large. Prohibitions and restrictions through taboos on unsustainable use of certain plant species, forests, mountains, rivers, pools and nonhuman animals, among other ecological species in the ecosystem, are not a new epistemology among the Shona people, but reflect a long tradition. At the same time, they are currently very lively and continue to shape Shona environmental ethics (Gelfand, 1973). The 42 ethical declarations are all examples of taboos for the African indigenes. For the native Zimbabwean, taboos are understood as specific

rules that forbid people from performing certain actions, otherwise, the performance of such forbidden actions is a negation of the moral code that governs human conduct. The violators of the ethical declarations or moral codes invite misgivings, for the community and themselves, such as bad luck, disease, drought, and death. To curb the excessive desire to venture out, there is a ready consequence for each prohibition.

4.3. Totemism in Zimbabwe and contribution to environmental conservation. Totemism is (a) a belief in kinship with or a mystical relationship between a group or an individual and a totem (b) a system of social organization based on totemic affiliations. Totemism in Zimbabwe can be traced back to early Biblical Judaism. Jacobs (1906) wrote in "Jewish Encyclopedia" that there are a considerable number of persons and places in the Old Testament with names derived from animals or plants. Jacobs has given a list of over 160 such names, including Oreb (the raven) and Zeeb (the wolf), princes of the Midianites; Caleb (the dog), Tola (the worm), Shual (the fox), Zimri (the chamois), Jonah (the dove), Huldah (the weasel), Jael (the ibex), Nahash (the serpent), Kezia (the cassia), Shaphan (the rock-badger), Ajalon (the great stag), and Zeboim (the hyena). Members of a totem clan did not eat the totem animal. As such totems gradually spread throughout the nation, a list of forbidden animals would arise this might be analogous to the list of forbidden animals given in Leviticus 21 and Deuteronomy 15. Jacobs, however, has shown that in the list of animal names given by him forty-three are clean as against forty-two unclean.

4.4. Inclination of Zimbabwean taboos to environmental conservation. Zimbabwean people have always looked at the environment as a very important and inseparable part of the human community. For them, the environment is important to the well-being of the individual. Thus, the communitarian nature of society can be understood in the context of the moral relationship that is struck between the individual and the environment through the observance of taboos. Such teachings complement and cement a good moral relationship between the individual person and the environment. Though Mbiti's (1969) contention that "I am because we are" is anthropocentric, as it characterizes the relationship between the individual and his society, it can also be applicable to the relationship between the human community and the environment. In this context, the society is what it is because of the existence of the environment that provides it with some of its needs and wants.

4.5. Taboos protecting the natural vegetation and wildlife. Apart from protecting water sources and ensuring hygienic standards, some indigenous taboos are meant to protect the natural vegetation and the wildlife. These taboos affirm the intrinsic value that the natural vegetation and its wildlife have, rather than viewing them as instrumentally valuable. According to Duri & Mapara (2007), "institutional prohibitions, such as taboos, were designed to develop positive societal attitudes towards the environment. This also involved restricting the cutting and using of certain types of vegetation". Although, in the native cosmology, the natural vegetation and wildlife are used, instrumentally, to fulfill men's ends, they also have a significant value because of their spiritual significance. Certain natural vegetation and wildlife are revered, because they are believed to be hosts of some spiritual forces. It is, therefore, taboo to visit or defile certain sites that are regarded as sacred. These sacred sites include certain forests and mountains that members of the native communities are discouraged from visiting, cutting down trees, and hunting wildlife in them. For example, it is believed that the one who visits or defiles a sacred site risks getting temporarily lost or disappearing forever, and, in some cases, becoming insane. Although the actuality of the sacredness of certain sites, natural vegetation, and wildlife is debatable, it is apparent that such myths help in ensuring a harmonious relationship between human societies and the whole of nature. More importantly, there is some ethical import in the taboos that discourages misuse of the nature's resources. Such taboos implicitly inform human beings to treat and see natural vegetation and wildlife as ends in themselves, rather than assuming the once dominant Western, traditional, homocentric view of ethics, where only the welfare of human beings has intrinsic moral worth (Velasquez & Rostankowski, 1985). In this regard, taboos protecting natural vegetation and wildlife foster an environmental ethic that is not anthropocentric, but one that takes on board the interconnectedness of human and nature. Ojomo (2011) concurs …African metaphysical outlook can be described as eco-bio-communitarian, implying recognition and acceptance of interdependence and peaceful coexistence between earth, plants, animals, and humans.

4.6. Indigenous knowledge and classification of trees.

Table 2. Taboos associated with the local forests

Taboo	Sanctions if one broke environmental taboos
No one is allowed to cut a tree with any human made tool, but only with the help of a blunt stone.	If anyone breaks this taboo, he/she must produce a sheep for a cleansing and purification ritual to be undertaken on him and the forest.
No setting forests on fire.	A person who accidentally or deliberately set the forest on fire had to produce a sheep for cleansing and purification rituals.
No reckless collection of firewood in the forest.	Only at appointed times within a year was collection of firewood allowed; and even then, it was closely supervised by elders. It is only dry wood that can be collected, for one cannot cut a green tree.
It was strictly prohibited to hang beehives on trees inside the forest.	Cleansing rituals done if it happened, otherwise, God would punish the society.
Sexual activities were not allowed in the sacred forest.	Cleansing rituals done if it happened, otherwise, God would punish the society.
It was strictly prohibited to kill any animal, and particularly (monkey).	In case it happened, cleansing and purification rituals for the culprit and the forest were urgently conducted
A baby who has not undergone the traditional ritual of the first shaving is not allowed to enter into this forest.	In case it happened, cleansing and purification rituals done urgently to avoid God's wrath.
Wood from sacred forest was never used for construction of houses.	In case it happened, cleansing and purification rituals done urgently to avoid God's wrath.

Among the native Zimbabweans, just like in other societies, people may be tempted to kill defenseless and innocent creatures, such as frogs, for fun. Such unchecked destruction of the seemingly unimportant elements of the natural environment can have a negative impact on the ecosystem. Thus, when humans change the environment in which they live, they often harm themselves. Thus, the wanton destruction of endangered species has adverse effects on not only such species per se, but also on human beings at large. Hence, the native Zimbabweans environmental taboos teach people to be mindful of endangered nonhuman animal species and the natural environment. In addition, these taboos teach people to desist from being cruel to defenseless and harmless creatures within the environment.

5. Solutions and recommendations

The study recommends that the African government policy makers should indigenous knowledge systems and its application in the conservation and preservation of natural resources, since the information tends to be peculiar to this particular ethnic group. In a nutshell, indigenous knowledge systems should help to save the interests of the locals and, ultimately, their land. It is advocated that African government policy makers should not just adopt policies that worked positively in developed countries and implement them to conserve and preserve natural resources. The indigenous people have their own taboos which work well for them and they need to be promoted for the benefit of future generations. Again, the study recommends that there is a great need to find out the role of African indigenous symbols in various ethnic groups in their particular environment. These symbols need to be brought into public knowledge. This can be achieved through introduction of programs that focus on the teaching of indigenous knowledge systems at institutions of high learning. There is a clear need for recognition and protection of IKS for cultural reasons.

6. Future research directions

Future research should focus on the relationship between traditional knowledge and science, ethno-biology and in the broader field of ethno-science. Ethnobiology is the study of the reciprocal interactions between the people and biological organism and of traditional knowledge about these interactions, while ethnoscience is the study of interactions and of traditional knowledge of the physical and biological world. Traditional knowledge informs and profoundly influences ethnobiology and ethnoscience. Traditional knowledge is often adapted by science and re-applied in contemporary contexts and through contemporary management. Thus, traditional knowledge is useful to science and to contemporary society and should not be sidelined in favor of Eurocentric philosophies

Conclusion

Indigenous knowledge system exists in Africa and other developing societies, but its future is uncertain. Such knowledge should be recorded and evaluated by people who possess appropriate backgrounds in biology, ecology, resource management, the social sciences, and have the appropriate skills for translating cultural information for the comprehension by other cultures. Indigenous and local communities have a stockpile of knowledge about their flora and fauna - their habits, their habitats, and their seasonal behavior. It is, therefore, only logical and in consonance with

natural justice that they are given a greater says as a matter of right in all matters regarding the study, extraction and commercialization of indigenous knowledge. This study has revealed that though indigenous knowledge systems have been despised and pejoratively labeled by the Western hegemony and imperialism, they have the potential to ease the environmental problems resonant of most developing countries in Africa and beyond. This argument has been advanced in light of the evidence that 'indigenous' or 'traditional' environment conservation strategies, unlike the modern scientific conservation strategies were successful [in pre-colonial Africa] in promoting sustainable exploitation of resources from the environment. Yet, the arrogance of science over other knowledge forms remains visible, as it continues the sole adjudicator in measuring and testing the validity of its own knowledge claims and those of other knowledge forms. More importantly, the study has recommended that the environment conservation problems in the country and beyond can only be tackled if swift and immediate measures are put in place. The measures suggested in this study include the active involvement of local communities and serious consideration of other knowledge forms, especially those that were once marginalized by Western science. Overall, this study is a bold step towards "generative dialogue" of different knowledge forms, and environment conservation reforms in Zimbabwe and other African countries' environment conservation projects.

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