



CULTURAL PRACTICES OF LOCAL COMMUNITIES AS A BIODIVERSITY MANAGERIAL STRATEGY FOR GHANA'S ENVIRONMENT: A RETROSPECTION OF INTERNATIONAL CONVENTIONS

Environmental Science

Dickson Adom	Department of General Art Studies, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, P.O. Box NT 1, Kumasi- Ghana
Prince Edem Dzakpasu	Department of Curriculum Studies and Educational Technology, University of Port Harcourt, Nigeria, University Post, Port Harcourt, Nigeria
Saeed Adam	Department of Planning, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana, University Post Office, Kumasi, Ghana

ABSTRACT

Biodiversity depletion with its adverse environmental impacts continues to be a global canker facing numerous countries of the world. To salvage the situation, various countries of the world have signed and ratified numerous international conventions and treaties that have suggested pragmatic measures that are capable of conserving global biodiversity. In these international agreements, the need for an adoption of the cultural practices of local communities as a biodiversity managerial strategy has often been stressed. Document analysis and Interpretative phenomenological analysis under the qualitative research approach guided the thorough review of some of these international conventions that Ghana is a signatory, to justify the significant roles that cultural practices can play in the management of biodiversity in the environment. The study contends that to mitigate and effectively manage the decline of biodiversity in the environment, the cultural practices of local communities must be espoused as an environmental managerial strategy. The research tasks environmentalists, policy makers and biodiversity conservationists to fully embrace and incorporate cultural practices of local communities in the planning, decision-making and management of the environment and its biodiversity resources.

KEYWORDS:

Cultural Practices, International Conventions, Biodiversity, Environment, Management, Conservation Strategy

1. INTRODUCTION

Biodiversity has been the constant sustainable force behind the existence of generations of humankind. Its immense contribution to life sustenance cannot be overemphasized. According to [16] the bio-resources in nature ensure good soil formation, better mental health, enhances nutrient cycling and the provision of clean water. [23] add that biodiversity offers ecosystem services such as maintaining the quality in the air humans breathe, regulates the climate, which in turn monitors the rainfall patterns of numerous geographical areas of the world. However, it is a known fact that the global biodiversity resources of countries are under serious threat of extinction as a result of human activities [28]. Jane Smart, the director of the biodiversity conservation group with the International Union for the Conservation of Nature (IUCN) warned in 2015 that the world is facing an extinction crisis. [37] estimates that currently, there is a rapid loss of the species in nature between thousand and ten thousand times higher than the natural extinction rate. This implies that the earth loses between two hundred and two thousand of its rich biodiversity resources annually.

The face of the biodiversity depletion is no different in Ghana. The Environmental Protection Agency estimates Ghana's direct annual cost of environmental degradation, especially biodiversity decline at 10% of her Gross Domestic Product (GDP) which is almost 166 million dollars (Peace Fm, Ghana, 23rd December, 2015).

Various agreements, conventions, multilateral efforts and treaties on biodiversity conservation globally have been agreed and signed by numerous member countries to combat against the wanton depletion of biodiversity. Momentous meetings, workshops, forums and seminars have been organized with the sole aim of devising new, proactive strategies to help conserve the bio-resources in nature that underpins all life on the planet. [11] views these international agreements as having significant pressure driving the development of biodiversity conservation. Some of these include Convention Relative to the Preservation of Fauna and Flora in their Natural State (1933), Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (1940), The International Convention for the Protection of Birds (1950), the International Plant Protection

Convention (1952), Convention on Nature and Natural Resources (1968), Ramsar Wetlands Convention (1971), The World Heritage Convention (1972), The UN Conference on the Human Environment (1972), The Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973), The Convention to Combat Desertification (1974), Conventions on Wetlands of International Importance, such as Waterfowl Habitat (1975), Convention on the Conservation of European Wildlife and Natural Habitats (1982), Convention on Migratory Species of Wild Animals (1983), Indigenous and Tribal Peoples Convention (1989), Convention on the Protection of the Alps (1991), The Assisi Conference of the International World Wildlife Fund (1986), Earth Summit (UN Conference on Environment and Development, 1992), Convention on Biological Diversity (1992), United Nations Framework Convention on Climate Change (1992), Alliance for Religion and Conservation (1995), the Convention to Combat Desertification (1995), the Kyoto Protocol (1997), Forum on Religion and Ecology (1998), International Treaty on Plant Genetic Resources for Foods and Agriculture (2004), the Yale Forum on Religion and Ecology (2006), the Convention on the Protection and Sustainable Development of the Carpathians (2006), UN Declaration of the Rights of Indigenous People (2006), The Strategic Plan for Biodiversity 2011–2020 and the AICHI Biodiversity Targets.

The proceedings from most of these international conventions have reiterated the need for the massive incorporation of local and/or indigenous knowledge of conservation, which are mostly enshrined in the cultural practices of local communities and their people. Why are the many global conventions, treaties and agreements all stressing on the need for the integration of the traditional cultural practices in biodiversity conservation initiatives, programs and strategies? This is certainly because of the practicability and result-oriented nature of these age-long strategies that were masterly implemented by the great human forebears in the past generations. [1] argues that prior to the introduction of modern scientific management strategies, local communities are known to have instituted effective by-laws based on their cultural practices to conserve and sustain the biodiversity resources in their communities.

Owing to the fact that these local people are direct custodians of the biodiversity resources in the environment, [10] opines that it makes practical sense to involve their views and practices in the conservation policies and strategies that are drawn. Community participation in conservation efforts promotes a sense of belongingness on the part of community members and can provide insightful knowledge about conservation and management practices [23]. Therefore, modern conservationists and developers should incorporate fully the viable aspects of the traditional cultural practices to enhance biodiversity conservation initiatives. They must pay attention to the local values and indigenous knowledge in the cultural practices. The goal of this paper is to examine the various international conventions and agreements on biodiversity in order to ascertain and understand their views on the inclusion of the cultural practices of local communities in environmental policies and strategies drawn by member nations. The objectives of the paper were to:

- i. Identify and describe some international conventions signed and ratified by member countries, including Ghana that have advocated for the active participation of local people and their cultural practices in biodiversity managerial strategy.
- ii. Analyse the views of the international conventions on the active participation of local people and their cultural practices.
- iii. Discuss how the active participation of local people and their cultural practices could be effectively harnessed into an efficient biodiversity managerial strategy for Ghana's environment.

This understanding would hopefully lead to an improved and efficient managerial biodiversity policies or strategies that can better combat the decline of biodiversity in Ghana. This is due to the comprehension of the significant roles of the cultural practices of local communities and the need to factorize its ideals and values into developed national biodiversity strategies and policies especially in the planning, decision-making and management.

1.1. International Conventions and the Incorporation of Local Knowledge in Biodiversity Conservation

The inclusion of local people and the factorization of their traditional cultural practices in conservation planning of biodiversity were long hinted at the early international conventions governing the conservation and sustainable use of nations' biodiversity. Amongst these is the Ramsar Wetlands Convention in 1971. [22] noted about the Convention that it paid close attention to the cultural issues in wetlands management in the region. This was due to the fact that the cultural values of wetlands were seen by the developers of the convention as a tool to strengthen the involvement of local stakeholders, particularly in wetland planning and management.

Twenty years after the Ramsar Wetland Convention, another convention was promulgated to protect the endangered species in the Alpine or mountainous regions of Europe. This is the Convention on the Protection of the Alpines, 1991. Owing to the rich cultural traditions and practices of the local communities in those regions, the convention mentioned the need to maintain the traditional mountain farming practices which were environmentally compatible and aids in biodiversity conservation and sustainability.

A year after, the Convention on Biological Diversity, 1992 came into force. It was agreed and signed by member states that were present at the Earth Summit organized by the United Nations on environment and development held in Rio de Janeiro in Brazil. The final document released stressed the need to include the rural communities in national conservation initiatives. This was the main idea expressed in the Rio Declaration on Environment and Development's principles 10 and 22. The principle 10 emphasized that environmental issues are best handled with the participation of all concerned citizens at the relevant level. Thus, the local people are part of these citizens of the nation whose views must be considered and possibly factored

into biodiversity conservation discussions. This was made more explicit in the principle 22 which highlighted that indigenous people and their host communities have a vital role in environmental management and development because of their knowledge and traditional practices. Therefore, as [10] agrees, managerial practices as well as decision making processes must fittingly promote their identity, culture and interests while ensuring their full and effective participation in the biodiversity policies and strategies formulated. This resolve was made evident in the final Convention on Biological Diversity, 1992. Article 8 (j) of the convention urged parties to 'respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity.' As a yardstick for the development of specific national biodiversity strategies of member states, they were to ensure the full participation of local people and inclusion of their traditional cultural practices that can conserve biodiversity.

The World Conference on Science organized by UNESCO in conjunction with the International Council for Science in 1999 also urged governments to strive and promote the understanding of the indigenous knowledge systems. It also urged scholars in conventional science to respect, sustain and even enhance the indigenous knowledge systems, while incorporating traditional knowledge into interdisciplinary projects.

Likewise, the Convention on the Protection and Sustainable Development of the Carpathians, 2006 in Europe also said that the member parties must take measures to facilitate the participation of regional and local authorities as well as other stakeholders, in the development and implementation of policies for conservation, restoration and sustainable use of biological and landscape diversity of the Carpathians.

Finally, the United Nations Principles and Guidelines for the Protection of the Heritage of Indigenous Peoples, Convention on Biological Diversity and Science for the Twenty First Century made a new commitment concerning how the traditional knowledge systems of indigenous peoples are viewed. As [4] noted, many scholars who are influenced by Western scientific knowledge downplay the wisdom in the knowledge of the local communities. Thus, in the new commitment, the United Nations admitted the need for the acknowledgement of various countries of the world that the heritage of indigenous people is an absolute knowledge system with its own concepts of epistemology and its own scientific and logical validity.

2. METHODOLOGY

The research which is basically a review paper was carried out using the document analysis approach under the qualitative research study. [18] states that document analysis is a form of qualitative research in which documents are rigorously analyzed and interpretations are gleaned from them by a researcher to give meaning and explain events and happenings. The researcher reads a lot of electronic and printed documents related to the phenomena under study so as to understand and give informed judgment [9]. After thorough and systematic reading, the documents are analyzed and interpreted. Existing documents such as journal articles, publications and policy statements are critically evaluated with the view of unearthing meanings.

[30] opine that the analytical process starts with the finding of the document, selecting, appraising or making meaning and synthesizing the data in the document. The researcher using this research method has to seek for authenticity, credibility, representation and meaning of the documents to be analyzed [8]. [24] describes the analytical procedure in document analysis as entailing procedural steps such as finding, selecting, appraising and synthesizing the data contained in the documents. This thorough activity produces quality data in the form of excerpts, quotations, paraphrases and others that are further organized into major themes

and categories to make it easy for meanings to be deduced from the reviewed documents.

The researchers adopted this approach because various international documents relating to biodiversity conservation and sustainability, such as international biodiversity conservation conventions, treaties were critically reviewed to analyse the great impacts of the innovations and traditional knowledge from the cultural practices of the local and indigenous societies. Scholarly publications on the significance of the traditional cultural practices in biodiversity conservation discourses, programs and initiatives were reviewed. [21] revealed the main focus of document analysis as helping in revising policies, devising efficient strategies in remedying challenging situations confronting humans. The researchers engaged in this rigorous review of the extensive literature on international conventions to show how Ghana as a country can learn good lessons concerning the successful factorization of the good aspects of the traditional cultural practices of the numerous local communities in Ghana and inculcate their views and their proactive cultural practices into the national biodiversity strategy. This, the researchers believe, can arrest the menace of the biodiversity degradation in Ghana. This research method under the qualitative approach was seen as appropriate for this study because it aided the researchers in gaining rich description and data [9] on how the views of international conventions on the adoption of cultural practices as a biodiversity managerial strategy.

Table 1: Biodiversity Conservation Documents Analyzed

International Conventions and Documents on Biodiversity-Related Issues Stressing On The Incorporation of Traditional Cultural Practices of Local Communities
Assi Declaration of Religion and Nature (1986)
Indigenous and Tribal Peoples Convention (1989)
The 1992 United Nations Conference on Environment and Development, Agenda 21
The United Nations Decade for Sustainable Development (UNDESD, 2005-2014)
The Desertification Convention (1995)
The Strategic Plan for Biodiversity 2011–2020 and the AICHI Biodiversity Targets
UN Declaration of the Rights of Indigenous People (2006)

Table 1 shows the international conventions that were thoroughly reviewed and interpreted by the researchers.

Finally, interpretative phenomenological analysis was used for analyzing the reviewed documents. [29] opine that this analytical process is a dual interpretation process. The first is the interpretation obtained from the documents revealed as told by the authors, in this case, the policy documents on biodiversity, referred to as the emic perspective. The second interpretation is from the researchers who makes meaning through the careful, systematic and rigorous examination of the documents, referred to as the etic perspective. In describing the analytical method of this type of analysis, [26] said that the researchers first engages in multiple reading and makes notes on essential points from the documents that are read. This is done severally to aid the researcher immerse himself totally to better put himself in the shoes of the authors. The notes are then transformed into emergent themes. Similar patterns and clusters in the themes are traced and generated. A consistent, persuasive narrative essay rich with extracts from the documents is written with extensive discussions that relates the identified themes with existing literature. This is exactly what the researchers did. The numerous international documents related to biodiversity as well as the national biodiversity strategy and action plans of different countries were thoroughly perused severally by the researchers. This assisted the researchers to understand the inner thoughts of the biodiversity conservation strategy planners to obtain the emic perspective. Extensive notes on the incorporation of the cultural practices of the local communities as well as initial interpretative comments were

made from the documents by the researchers. Emergent themes were created from the comprehensive notes that were produced. Finally, a narrative essay which gives a detailed account, thick descriptions, interpretation and rich enlightenment on how the reviewed international biodiversity conventions highlight the significant roles of cultural practices of the local communities was written. This was carried out with a linkage of views from existing literature on the general theme of the study. Recommendations on how Ghana can effectively factorize and promote the cultural practices were made by the researchers.

3. RESULTS AND DISCUSSIONS

This section presents a thorough review analysis of the international conventions that advocate for the incorporation of the cultural practices of local communities. It clearly indicates the areas in biodiversity conservation that require the inclusion of the cultural practices of local communities. These key areas that were noted in the rigorous analysis of the international conventions and agreements include planning, management, monitoring and implementation of biodiversity strategies and policies. It presents the findings and discussions of the objectives of the research.

3.1 Identification, Description and Analysis of The International Conventions That Advocates for the Full Participation of Local People and Their Cultural Practices in Biodiversity managerial Strategy

The international conventions that have advocated for the full participation of local people and their cultural practices that have been reviewed are the Assi Declaration of Religion and Nature (1986), Indigenous and Tribal Peoples Convention (1989), UN Declaration of the Rights of Indigenous People (2006), The United Nations Decade for Sustainable Development (UNDESD, 2005-2014), The 1992 United Nations Conference on Environment and Development, Agenda 21, The Desertification Convention (1995), and The Strategic Plan for Biodiversity 2011–2020 and the AICHI biodiversity targets.

3.1.1 The Assi Declaration of Religion and Nature (1986)

The Assi declaration was promulgated by the need to find alternative means of addressing the global environmental challenges [20]. This was as a result of the monolithic search for the solutions to the global biodiversity challenge using conventional science. Attention as thus, turned to searching for solutions in behavioural science. This resulted in a renewed interest in the cultural and religious factors that influence the attitudes of individuals towards the use of the biodiversity in the environment. The Assi declaration which was a declaration of religion and nature made at Assi in Italy highlighted the immense roles of religion and culture. Prince Philip, who was the then president of the WWF International invited the five leaders of the major religions globally, thus, Christianity, Buddhism, Hinduism, Judaism and Islam to deliberate on how their faiths could be used in protecting the natural environment and its resources.

Some of the issues that were raised during the declaration were that human beings were not separate from nature and that the two were linked and shared a symbiotic relationship. Thus, destroying nature would mean the entire destruction of the human race.

Also, it was declared that all objects in the universe had spiritual power and as such they needed to be revered as sacred and divine. Therefore, they must not be abused or destroyed.

These two strong and essential principles of the relationship that existed between humans and nature as well as the sacrosanct of all the things in nature have been part of the ideals of indigenous communities. This is apparent in their cultural practices, traditions and religious belief systems. [1] noted among the Asantes of Ghana that they hold a sacrilege for some objects in nature because they have oral traditions that these objects, some of which are plants and animals may have rendered extreme assistance or help to their great ancestors that ensured the survival of the ethnic society. Thus, they

revere these objects, and it is tabooed to be eaten or killed by members of that particular clan. Owing to this principle of sacrilege for things in nature as part of the cultural practices and values of local people, was seen as a powerful managerial strategy for conserving the world's biodiversity and was declared as such in the 1986 Assi Declaration of religion and nature.

3.1.2 Indigenous and Tribal Peoples Convention, 1989

This convention was passed in Geneva on 26th June 1989 after the 76th session general assembly of the Governing body of the International Labour Office held on 7th June, 1989. The need to pass this convention was necessitated by various concerns. One major concern was the new trends in international law that had been passed after the 1957 Indigenous and Tribal Populations Convention (No. 107) has been in force for over the past three decades. Another concern was the new developments in the conditions of indigenous and tribal peoples such as the new ray of hope that indigenous people were capable of managing their own institutional structures while equipping their way of life, economy, identities, and religions. Finally, the new convention was also necessitated by the high waning of the customs, values, aspirations and cultures of indigenous people and the trampling upon of their human rights.

The first part of the convention, which bordered on the general policy stated that:

'The social, cultural, religious and spiritual values and practices of these people shall be recognized and protected...' --ILO Indigenous and Tribal Peoples Convention (No. 169), Article 5

This article in the convention highlights that governments and agencies must recognize the cultural practices of indigenous and local people.

They can efficiently do this by incorporating viable cultural practices in the planning of development projects and programmes in various fields of national development. This is especially important in the management of biodiversity where the cultural practices of local communities have proved very efficient.

In most policies and strategies that are drawn, it has become a common ritual that many policy makers and project managers often relegated and sideline indigenous people in environmental and biodiversity conservation planning and management [20]. [25] concur that the cultural practices of local communities are mostly left out in official biodiversity management and conservation strategies. Thus, the articles 6, 7, and 15 addressed this great and important concern.

'Consult the [indigenous] people concerned, through appropriate procedures and in particular through representative institutions whenever consideration is being given to legislative or administrative measures which may affect them directly...' --ILO Indigenous and Tribal Peoples Convention (No. 169), Article 6a

'Establish means by which these peoples can freely participate, to at least the same extent as other sectors of the population, at all levels of decision-making in elective institutions and administrative and other bodies responsible for policies and programmes which concern them.' --ILO Indigenous and Tribal Peoples Convention (No. 169), Article 6b

'... in addition, they shall participate in the formulation, implementation and evaluation of plans and programmes for national and regional development which may affect them directly' --ILO Indigenous and Tribal Peoples Convention (No. 169), Article 7

'The rights of the [indigenous] people to participate in the use, management and conservation of the natural resources on their lands shall be safeguarded.' --ILO Indigenous and Tribal Peoples Convention (No. 169), Article 15

The planning and management of the biodiversity resources in the local communities must certainly involve the local people in the forest fringe communities. This is important because every decision made, programs developed to be implemented in their communities directly affect the people. Thus, it is prudent that many of the articles in the convention stresses on the full and active participation of the indigenous and/or local people in communities in programs and policies regarding the environment. Their involvement must be very keen in areas such as the formulation of the policies and programs for the management and conservation of the biodiversity resources in their jurisdiction. When involved in the formulation and decision-making processes, the indigenous/local people can bring on board their time-tested and experiential knowledge in biodiversity conservation [17]. These are mostly culture-oriented. They include cultural practices such as the establishment of taboo systems, totemic systems, festival observations, religious beliefs and so forth. [19] concur that successful environmental development programs are those that seek the views of local people and communities.

Another key area that leaves most sound and promising policy documents just on paper with no or less impact in implementation [12] is attributed to the sidelining of indigenous or local people in the implementation processes of the policy developed. Of course, if the local communities, especially the traditional leaders are involved in the implementation processes, it would aid greatly in materializing the agreed plans for the smooth management of the biodiversity resources in their communities. This explains why the article 7 of the convention stressed on the participation of local people and their communities in the implementation and evaluation processes of programmes.

3.1.3 UN Declaration of the Rights of Indigenous People (DRIP) 2006

This is an international declaration adopted by the United Nations on 13th September, 2007 signed by 144 countries aimed at ensuring that the rights of indigenous people such as their survival, dignity and well-being are maintained (UNDRIP, 2006). The declaration of the rights of the indigenous people also assures them of free practice of their cultural practices, customs, religion, languages as well as their political and social institutions.

The article 4 in the declaration affirms the autonomy of local communities to manage their local affairs. This gives the traditional authorities the power to manage the affairs of their local communities while dispensing sanctioning measures to defiant citizens of environmental degradation. If governments that signed onto this declaration decentralize the management of biodiversity to the local level, empowering the traditional authorities to dispense sanctioning measures in their communities, it would help in minimizing the high occurrence of biodiversity degradation. The people respect the sovereign authority of the chief and his cabinet of elders and as such would heed to their call for ensuring the conservation and sustainability of biodiversity. Therefore, empowering them as environmental inspectors in local communities would ensure effective implementation of the biodiversity programmes and policies.

Moreover, the sanctioning system which is part of the cultural practices of local communities has been proven to be effective, even, somehow better than the civil court juridical systems [7, 2]. It is probably in line with this benefit that is why the article 34 of the UNDRIP advocates the right of local communities to use their traditional juridical systems as mediums for sanctioning only if the sanctioning measures do not usurp the standards of international human rights.

'Indigenous people have the right to promote, develop and maintain their institutional structures and their distinctive customs, spirituality, traditions, procedures, practices and, in cases where they exist, juridical systems or customs, in accordance with international human rights standards' (Article 34, [34]).

In the planning and decision-making processes of biodiversity management strategy, local people are often ignored or are literally consulted. Therefore, articles 18, 24, 29 and 32 of the UNDRIP 2006 addressed these concerns. Article 18 of the declaration said:

'Indigenous people have the right to participate in decision-making in matters that will affect their rights, through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions [34].'

'State shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain their free and informed consent prior to the approval of any project affecting their lands... [34].'

Normally in some biodiversity policy planning and decision-making stages, representatives of the local communities are invited but are conspicuously left out at the climaxing stages. The worse situation happens when project officers and developers of environmental strategies totally abandon the views of the local people, though they literally invite them to stakeholder meetings and forums. Another challenge is when policy developers, rather than appoint representatives for the local communities, select, void of the consensus approval of members of the local communities, is often biased toward the elite class in the communities. When this happens, the traditional cultural practices which are frowned upon by the elite representatives as empty superstitions are not factored in the managerial strategy for the conservation of biodiversity. Thus, article 18 of the UNDRIP emphasized that the selection of the representatives of local communities during stakeholder deliberations must be done or elected by the entire members of the community. This would curtail fair local community representatives and possible incorporation of the traditional cultural practices of the people in biodiversity management strategy.

Also, the declaration gives the indigenous people the right to maintain the spiritual relationships and affiliations that they have with their lands and biodiversity resources even if the elite in the Ghanaian society who are not down-to-earth scholars fail to unearth their philosophical values and thus brand them as superstitious. [27] advises scholars who would want to find the conservation ethos in the traditional cultural practice of local communities to engage in humble search into its domains. Article 25 of the [34] says that 'Indigenous people have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard.'

Project officers who head development projects in local communities sometimes flout the agreements they conclude with the local communities [14]. The local people in such an instance remain in a fixed situation and can't do anything about it. It is this pathetic state of local communities that the article 37 (1) addresses:

'Indigenous people have the right to the recognition, observance and enforcement of treaties, agreements and other constructive arrangements concluded with states to have the state honour and respect such treaties, agreements and constructive arrangements.'

Based on this declaration, indigenous people now have legalized rights to hold the government and/or its representatives to their agreements with the local communities. Thus, when the agreements regarding the planning and management of the biodiversity resources in their environment are breached, the local people have the legal right to arrange them before court for justice to be served on their behalf. This would also ensure that the viable aspects of their cultural conservation practices for the management of the biodiversity resources in their environment are utilized.

The local or indigenous people have been assigned the right of deciding on the sort of managerial strategy for the conservation and protection of their environment and biodiversity resources as indicated in the article 32 (1), 29 (1) and 24.

'Indigenous people have their right to determine and develop priorities and strategies for the development or use of their lands or territories and other resources.' (Article 32 (1), [34])

'Indigenous peoples have the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources.' (Article 29 (1), [34])

'Indigenous people have the right... to the conservation of their vital medicinal plants, animals and minerals.' (Article 24, [34])

Particular plant and animal species that have cultural or spiritual values and are not to be used abusively and/or conserved must be respected as such since the local people have that right as per the Article 21, [34]. For instance, due to totemic affiliations, festival observance or taboo observance, community members in some local communities have restricted the harvesting of particular plant and/or animal species [3]. Knowingly or unknowingly to the local people, these traditional cultural practices used as managerial strategy for biodiversity conservation in the local communities have mitigated resource exploitation and degradation in those regions [15,4].

The declaration further reiterates local people with the right to maintain, protect, develop and even revitalize those traditional cultural practices.

'Indigenous people have the right to practice and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures...' (Article 11 (1), [34])

'Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures... They have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions' (Article 31 (1), 34).

The reiteration of the UNDRIP for the application of the time-tested cultural practices that ensure the sustainable use and conservation of their environmental resources and branding it as part of the sciences and technologies of local communities vouch their potency in the management of the biodiversity in the environment. This makes it imperative and even indispensable for policy makers and developers of biodiversity to adopt them as part of the managerial strategy for regulating the biodiversity resources in the Ghanaian environment where culture plays quintessential roles in environmental protection.

3.1.4 The United Nations Decade for Sustainable Development (UNDESD, 2005-2014)

The United Nations Decade for Sustainable Development also emphasized the need for establishing partnerships between project officers and local people in fringe communities especially when environmental initiatives and programmes are developed. This was hinted as a priority in their document on ways of achieving sustainable development. On page 9, the document highlighted:

'No institution, even on a global scale, can manage to achieve the goals of sustainable development on its own. Only united together... can we be sure to build a viable world for us and for generations to come' [33]

Again, in line with the modern global curricular trends in Education for Sustainable Development (ESD) that places high value on the

relationship between indigenous knowledge and cultural perspectives with nature, society and world. Thus, the UN DESD places a high premium on the incorporation of the values in the cultural practices of local communities in sustainable development issues regarding the environment and the management of the biodiversity resources in nature.

3.1.5 The 1992 United Nations Conference on Environment and Development (UNCED) Agenda 21

Agenda 21 plan is a plan agreed during the 1992 United Nations Conference on Environment and Development to be implemented by governments under the United Nations to mitigate the negative human impacts on the environment [32]. This human impact was especially associated with human settlement. Its main objective was to improve the social, economic and environmental quality of human settlements as well as the living and working environments of all people, both the urban and rural poor [32]. This improvement is hinged strongly on partnerships and participation of the public, private and community groups, especially in the decision-making processes of developmental projects. This issued from the proceedings of the UNCED, 1992 in Brazil. According to [20], the conference highlighted the ecological approach to environmental issues while finding a new field of scientific study that acknowledges and promotes the relationships between nature, humanity, cultural practices and societies.

The document mentioned that member countries should consider the relationship between traditional cultural practices of indigenous people and the environment [32]. In the Chapter 16 of the UNCED, the indigenous knowledge apparent in the cultural practices of local people was labeled as 'scientific' because since they were developed, they have been tried and tested for many generations and as such has a record of validity and efficiency. The United Nations Principles and Guidelines for the Protection of the Heritage of Indigenous Peoples, the Convention on Biological Diversity and Science for the Twenty First Century indicated that the biodiversity conservation epistemologies constitute a whole knowledge system with its unique scientific and logical validity. Due to the conviction of the parties that attended the conference that the cultural approach to sustainable development is pragmatic, a section of the ensuing document titled 'empowering communities' offered an advice and a humble plea to governments and non-governmental agencies to:

'Respect the cultural integrity and the rights of indigenous people and their communities...' (Agenda 21) [32]

'Promote and establish grass-root mechanisms to ensure the sharing of experiences and knowledge of communities' (Agenda 21) [32]

'Give communities' greater share of participation in the sustainable management and protection of local natural resources...' (Agenda 21) [32]

'Encourage the principle of delegating policy-making to the lowest level of public authority consistent with effective action and a locally driven approach' (Agenda 21) [32]

For countries to be able to put into fruition, the time-tested cultural practices of their local communities in their biodiversity managerial strategy, they must ensure the active participation of the views of local people, soliciting for those views at the grass-root level.

The UNCED encouraged the adoption of an integrated management system that utilizes traditional or indigenous methods for the management of natural resources. However, the traditional methods must be critically studied and considered if their validity and effectiveness is proven (7.74 d) [32]. This agrees with the view of [5] who revealed that some traditional knowledge or cultural practices have limitations and may not be beneficial in our quest to achieve sustainable use of environmental resources in this modern age. However, to know aspects of the cultural practices and other

traditional methods that are effective for the management of biodiversity to be used as a potent strategy, research studies and programmes must be encouraged and promoted:

'Support research on and integration of traditional methods of production that have been shown to be environmentally sustainable' (Agenda 21)

This implies that research activities in traditional cultural practices and their significant roles in environmental conservation and sustainability must be encouraged by educational institutions, especially institutions of higher learning in the countries of member countries.

[13] contends that in spite of the less donor sponsorship for programmes aimed at halting the accelerating environmental menace, the use of cultural practices and full participation of local communities coupled with creative financing can reduce drastically, the rampant environmental degradation.

Implementation has always been an obstacle to the success of environmental and/or biodiversity policies and strategies that are developed. However, decentralizing the authority of implementing agencies has always attained a high degree of success. Therefore, empowering the traditional authorities in the local communities to ensure the successful implementation of environmental policies will certainly yield bountiful results. Thus, the Agenda 21 document emphasized on the reliance of the powers of the traditional councils in local communities for the implementation of environmental policies:

'7.45 Strengthening the institutional capacity of local authorities and administrators....' (Agenda 21) [32]

'7.44 Local authorities are called upon to play a pioneering role in promoting the increased use of environmentally sound materials...' (Agenda 21) [32]

To this end, it can be said with no exaggeration that the UNCED Agenda 21 supports and advocates for the full participation of local authorities and people as well as their cultural practices in the management and implementation of environmental policies and strategies.

3.1.6 The Desertification Convention 1995

The desertification convention came into being during the United Nations Conference on Environment and Development (UNCED) organized in Brazil in 1992. This convention was signed by delegates from 103 countries in April, 1995 to commit their countries to the halting of the global environmental problem of desertification. The number of member countries rose to 110 in October, 1995. The international community realized that the root cause of the global desertification menace was as a result of failing to involve local communities in environmental policy planning and development. Thus, the distinctive feature of this convention was pivoted on the 'bottom-up' approach, where authority regarding the management of environmental resources is directed to the local people and non-governmental agencies that were to offer technical support to the local communities [35]. It was unveiled during the negotiations between the member countries that the unsustainable use of the environmental resources on the part of the local people was due to their aggrieved condition. The numerous global, national and local policies drawn by the states did not favor them in any way. Therefore, in their dissatisfied and incensed state, the local people who had the culture of conservation and sustainability as tutored by their culture resorted to the exploitation of the biodiversity resources for their live sustenance.

Two of the four principal themes of the convention stressed on the participation of local people in the designing and implementation of environmental policy development:

1. 'Local participation in the planning and implementing of desertification programmes.'

2. 'The enhancement of cooperation among governments, non-governmental organizations and the local land users...' [35]

This active and continued participation of the local communities was to be realized in the content preparation and implementation processes of the policy or strategy for the management of biodiversity [13].

The convention further highlighted that the national action programmes that would be drawn by member countries who signed to the convention must include local development programmes and this must be the fulcrum of the strategy. The national action programmes were to:

provide for effective participation at the local, national and regional levels of non-government organisations and local populations, both women and men, particularly resource users, including farmers and pastoralists and their representative organisations in policy planning, decision-making, and implementation and review of national action programmes [35].

[13] reiterates that the African Annex of the convention to combat desertification, 1995 stressed on the empowerment and strengthening of the capacities of traditional authorities to assist greatly in programmes and activities drawn to help in the conservation as well as the sustainable use of biodiversity resources in the local communities. Also, the African Annex of the desertification convention calls on parties in Africa, especially to value, protect and promote the local knowledge and cultural practices of local communities. This may probably be as a result of the great import of sustainability and conservation paradigms in the local and cultural practices of the local communities in Africa. Indeed, the conservation ethos in the traditional cultural practices of local communities is indeed the 'oldest scientific tradition' on earth [36]. The desertification convention promotes local community participation and the managerial approach to environmental resource management via the traditional knowledge and cultural practices of local people.

3.1.7 The Strategic Plan for Biodiversity 2011–2020 and the Aichi biodiversity targets

The strategic plan for biodiversity for the year 2011 to 2020 is a revised and updated strategic plan for biodiversity agreed by member nations during the 65th session of the United Nations General Assembly held on 18-29 October 2010 in Nagoya, Aichi prefecture, Japan [38]. It was to be an international guiding framework for member nations and they were obliged by the new strategic plan to revise and update their national biodiversity strategies and action plans within a two-year period. It was to be a global structure for the years 2011-2020 slated as the world's decade on biodiversity protection.

The vision of the strategic plan is to live in harmony with nature and that by 2050, it is aimed that 'biodiversity is valued, conserved, restored and widely used, maintain ecosystem services, sustaining a healthy planet and delivering benefits essential for all life' [38]. The mission of the strategic plan was to take urgent and effective action 'to mitigate the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human wellbeing, and poverty reduction' [38].

The strategic goal E of the international strategic plan for biodiversity encouraged the participatory planning and management of environmental policies and strategies. The target 14 of the plan specifically mentions the participation of every member of the local and indigenous communities including the often marginalized in the

society thus women, the poor and the vulnerable.

'E. Enhance implementation through participatory planning, knowledge, management and capacity building' [38]

'By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, Indigenous and local communities, and the poor and vulnerable' (Target 14) [38].

In championing for the active participation of local communities, their traditional knowledge and cultural practices cannot be sidelined. The target 18 of the strategic plan hinted on the utilization of cultural practices in the policies and strategies for the management of biodiversity and the environment:

'By 2020, the traditional knowledge, innovations and practices of Indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the convention with the full and effective participation of Indigenous and local communities, at all relevant levels' (Article 18) [38].

The international instrument's strategic plan also showcases the distinctive roles that local people and their cultural practices play in the development of managerial strategies and policies for biodiversity and the environment. Thus, member countries like Ghana should treat it a matter of urgency to consider these two factors in any managerial strategy for biodiversity and environment.

3.2 Discussion on How The Participation of Local People and their Cultural Practices can be Effectively Harnessed into a Biodiversity Managerial Strategy for Ghana's Environment

The international conventions reviewed shows that the full participation of local people and their cultural practices must be realized in these areas of a potential managerial biodiversity strategy for Ghana's environment:

3.2.1 Participation of Local People in the Planning and Decision-making Processes

The participation of local people in the planning and decision-making processes of the strategy for the management of biodiversity and the environment are well emphasized in the international conventions reviewed. To illustrate, article 32 (1) [34] mentioned the free participation of local people in the planning and decision-making stages of policy and strategy development for the management of biodiversity. The two conventions explained that the local people have the right to participate in the strategic planning, decision-making and management of biodiversity because the natural resources are their traditional ownership.

In addition, [33] on page 9 highlighted that to achieve sustainable development, especially regarding environmental resources, societies must work together with the inclusion of local people. Agenda 21 [32] advises a grass-root approach to the planning and decision-making processes of the managerial strategy for biodiversity since it promotes the exchange of experiences, knowledge and ideas among the local people. [35] specifically mentions the inclusion of the often marginalized personalities in societies such as farmers, pastoralists and women. The experiential knowledge perpetrated by the rich cultural heritage of local communities, largely ensures the sustainability and conservation of the environment and its resources. Thus, in such keen deliberation amongst the larger populace for a viable strategy to manage the biodiversity in the environment, the resulting strategy will be potent enough to combat the biodiversity menace.

3.2.2 Implementation/Sanctioning Strategies

Usually, most countries have implementation agencies that are responsible for ensuring the fruition of biodiversity and other environmental related strategies and policies. For instance, in Ghana, the Environmental Protection Agency as well as the Forestry and Wildlife commission are ultimately responsible for ensuring the successful implementation of the biodiversity and other forestry and wildlife policies and strategies in Ghana. Though they don't work in isolation, other security agencies and juridical agencies assist them, relying on local authorities for assistance in the implementation process is lacking. Thus, to complement the efforts of the formal institutions in ensuring the implementation of forestry and wildlife policies and strategies, especially in the local communities, the assistance of the traditional authorities cannot be excused. It is for this good reason that is why some international conventions have called for the utilization of the powers of the traditional authorities to aid in the implementation of developmental programmes and policies.

To illustrate, article 7 [34] mentioned that the local people and their leaders must participate in the implementation and evaluation processes of policies and strategies related to the environment and the use of biodiversity since it affect them directly. Also, the Agenda 21 [32] even called for the strengthening of the institutional capacities of traditional authorities in the local communities for ensuring the full promulgation of environmental policies and strategies. In addition, the document suggested a leading role for these traditional authorities in the local communities in environmental programmes and the practicability of policies and strategies related to biodiversity in their jurisdiction. Likewise, [35] and [38] believes in the powers of the traditional authorities to offer strong sanctions to culprits of biodiversity. Those sanctions that are both material and spiritual are resilient enough as a viable deterrent for abusing the environment and its biodiversity resources. Thus, the traditional authorities are potent sources for enforcing implementation and sanctioning measures in environmental policies and strategies.

3.2.3 Areas for Research

The traditional methods that ensure environmental protection are not very popular in environmental discussions [2]. People are more glued to the modern scientific models of conservation and sustainability. This has resulted in some scholars even frowning upon the potential values from the traditional knowledge in the cultural practices. Therefore, there is the need for scholars who work in the field of environmental protection to carry out researches geared toward the use of traditional cultural practices to mitigate environmental degradation. Non-governmental organizations, funding and donor agencies must provide scholarship and grants for such researchers so that there would be a pluralistic approach [6] to the remedying of environmental problems. This research need was highlighted in [31]. It called on agencies to 'Support research on and integration of traditional methods of production that have been shown to be environmentally sustainable.'

Ghanaian institutions must aim at sponsoring researches in cultural anthropology that can aid in biodiversity conservation and assist in environmental protection. This would provide an alternative kind of knowledge [25] to augment the conventional scientific models for protecting Ghana's environment.

3.2.4 Strengthening of the powers of Local/Traditional authorities

The paper has already mentioned the instrumental role that local authorities can play in the planning, decision-making, implementation, sanctioning and evaluation of biodiversity management policies and strategies. It is, however, sad to reckon that in most states such as Ghana, the powers of the traditional authorities have been relegated to the background. As a result, they do not have the legal backing of the law to effectively play their functions and help in combating the biodiversity decline in their jurisdiction. Therefore, article 4 [34] mentions that indigenous and

tribal people have the right to self-government, thus, their leaders have the capabilities to effectively govern their people. Article 34 [34] adds that the local communities have the right to maintain and develop their juridical systems. This implies that the states and governments must believe in the ability of the traditional authorities to deliver especially on environmental issues. They can help the traditional authorities to develop their juridical systems and revamp them to meet modern system of governance so that they can function effectively. However, since there are bad nuts in every institution, the governments must ensure that there is a neutral body in play to monitor the activities of the traditional chiefs closely to rid any form of abuse of powers.

3.2.5 Ensuring the Honoring of Agreements between Local Communities and the State and/or Project Officers

Project officers and the states usually take the local people for granted in agreements concerning programs and projects in their local communities. The United Nations Declaration on the Rights of Indigenous Peoples, article 37 (1) mentioned that the indigenous people have the right to hold the state and/or project officers accountable to agreements and terms that they have with them. Recognition of this declaration would bolster the confidence of local people to take up court cases against project officers and governments who mostly breach their agreements with the people in the undertaking of projects in their jurisdiction.

3.2.6 Incorporation and Utilization of Cultural Practices

The Assi Declaration of Religion and Nature, 1986 mentioned the sacred view of nature that has been a cultural practice that ensures the sustainability and conservation of biodiversity. Many local communities in Ghana hold or share the reverential fear of things in nature. Some of the local people in Ghana believe in animism and spirits. The beliefs indicate that the plants, animals, water bodies, rocks and other things in nature, have a spirit being residing in them. As such, nature must not be abused or unjustly exploited because it is believed the angered spirit may hurt or even kill the culprit. This belief is high among some local regions of Ghana and as such can be promoted, strengthened and adopted as a viable biodiversity conservation strategy within such local communities to help in the conservation of biodiversity. Moreover, in Christianity populated areas in Ghana, where things in nature are respected as part of the masterpieces of the creator, the sacrilege for natural things as espoused in the Assi Declaration can be promoted and encouraged to ensure the sustainable use of biodiversity in those areas in Ghana.

Article 25 [34] discloses that the local people have the right to maintain the spiritual relationship that they have with their lands and resources. It further urges the general populace, especially project officers to respect their stand. In no way should scholars pass derogatory comments about the spirituality attached to certain things in nature. Rather, they should respect such sacrosanct views expressed by the local people because that will earn the support of local community members and result in the ultimate success of projects executed in their jurisdiction.

The traditional cultural practices that help in curtailing resource exploitation must be maintained and utilized in biodiversity strategic management. Article 31 (1) [34] advocate for the development, and maintenance of the cultural heritage, traditional knowledge and the cultural expressions of local people.

Due to the astronomical value of traditional cultural practices in biodiversity conservation and sustainability, [38] makes a projection that binds all member countries in article 18. The convention made a projection that by the year 2020, the traditional cultural practices and their traditional knowledge that plays significant roles in biodiversity conservation and sustainability should have been respected, given a legal backing in countries and implemented as a viable biodiversity conservation strategy. Three years to the target deadline set, many countries, including Ghana continue to trail in ensuring the legalization and implementation of cultural practices as a

biodiversity managerial strategy. Policy makers and developers of strategies for the management of biodiversity must make it a point now to incorporate the good cultural practices that ensure sustainability of the biodiversity resources in nature.

4. CONCLUSION

The tenet of the research was to investigate into the participation of local people and the incorporation of local people in environmental policies and strategies as passed by various international conventions. This retrospection of the international conventions was to highlight the significance roles that the participation of local people and their cultural practices could play in the management of biodiversity. The Assi Declaration of Religion and Nature (1986), Indigenous and Tribal Peoples Convention (1989), UN Declaration of the Rights of Indigenous People (2006), The United Nations Decade for Sustainable Development (UNDESD, 2005-2014), The 1992 United Nations Conference on Environment and Development, Agenda 21, The Desertification Convention (1995), and The Strategic Plan for Biodiversity 2011–2020 and the AICHI biodiversity targets were the international conventions that were reviewed in this paper. The areas in the formulation of biodiversity managerial strategy that need great attention as revealed in the review of the international conventions were:

1. Participation of Local People in the Planning and Decision-making Processes
2. Implementation/Sanctioning Strategies
3. Areas for Research
4. Strengthening of the powers of Local/Traditional authorities
5. Ensuring the honoring of agreements between local communities and the State and/or Project Officers
6. Incorporation and utilization of cultural practices

The study contends that efficient managerial strategy for biodiversity must ensure the active participation of local people and their cultural practices. These recommendations are put forward for the consideration and implementation by governments, environmentalists and more importantly, developers of biodiversity conservation strategies and policies in Ghana:

1. In the formulation of biodiversity managerial strategy, local people in the various local communities must be actively involved in all the facets of the strategy development, from the planning, decision-making through to the implementation and evaluation stages since they have valuable experiences to bring on board.
2. The powers and capabilities of local or traditional authorities must be strengthened and legalized for them to assist in ensuring the full promulgation and implementation of environmental programmes, projects and strategies.
3. Written agreements on projects must ensue between local communities and project managers and they must not be breached by any of the parties. The various juridical systems in the country must be consulted to bring the perpetrator of the agreements to order.
4. The traditional sanctioning measures formulated by the local authorities that prevented culprits of environmental degradation must be strengthened, developed and promoted in especially rural communities by governments and legalized if it is in harmony with the international standards for human rights.
5. Policy makers must weigh the great potentials of the traditional cultural practices in biodiversity management and find ways of integrating them with the modern scientific conservation and sustainability methods to form a synergistic approach to halt the depletion of environmental resources in Ghana.
6. Institutions of higher learning must promote and support research in the area of cultural studies that seek to find alternative strategies

aside from the purely scientific models to combat the high rise of biodiversity depletion in Ghana. Donor and funding agencies must financially support researchers who pursue such studies and offer them grants.

5. REFERENCES

- [1] Adom, D. Asante Indigenous Knowledge Systems: Repositories of Conservation Ethics for Ghana's Biodiversity. Proceedings of the academic conference of Interdisciplinary Approach Vol. 7 No. 2. 4th August, 2016- Uthman Danfodio University, Sokoto, Ptf I Hall, Sokoto, Sokoto State, Nigeria, 2016a.
- [2] Adom, D. Inclusion of Local People and Their Cultural Practices in Biodiversity Conservation: Lessons from Successful Nations. American Journal of Environmental Protection, vol. 4, no. 3 (2016): 67-78. doi: 10.12691/env-4-3-2, 2016b.
- [3] Adom, D. Promoting Cultural Traditions, Social Inclusion and Local Community Participation in Environmental Development Schemes. Proceedings of the academic conference of Urban Research Plaza's 15th Urban Research Forum 'Creating Vibrant Social Spaces- New Avenues to Urban Renewal', 7th-8th March, 2017, Chulalongkorn University, Thailand, 2017.
- [4] Adom, D., Kquofi, S. and Asante, E.A., The High Impacts Of Asante Indigenous Knowledge In Biodiversity Conservation Issues In Ghana: The Case Of The Abono And Essumeja Townships In Ashanti Region, British Journal of Environmental Sciences Vol. 4, No. 3, pp. 63-78, August 2016.
- [5] Ajani, E.N., Mgbenka, R.N. and Okeke, M.N. Use of Indigenous Knowledge as a Strategy for Climate Change Adaptation Among Farmers in Sub-Saharan Africa: Implication for Policy. Asian Journal of Agricultural Extension, Economics and Sociology 2 (1): 23-40, 2013; Article No. AJAES.2013.003 <http://www.sciencedomain.org>
- [6] Attuquayefio, D.K. and Fobil, J.N. An overview of Biodiversity Conservation in Ghana: Challenges and prospects. West African Journal of Applied Ecology, 7, pp. 1-18, 2005.
- [7] Awuah-Nyamekye, S. Managing the Environmental Crisis in Ghana: The Role of African Traditional Religion and Culture- A Case Study of Berekum Traditional Area (Doctoral Thesis, University of Leeds, United Kingdom), 2013. <http://etheses.whiterose.ac.uk/5780/1> (accessed 2015 October 17)
- [8] Biklen, S. K., and Bodgan, R. Qualitative Research for Education: An Introduction to Theories and Methods, Boston, M.A., Pearson A & B, 2007.
- [9] Bowen, G. A. Document Analysis as a Qualitative Research Method, Qualitative Research Journal, 2009, Vol. 9, No. 2.
- [10] Brown, D. Principles and practice of forest co-management: evidence from west-central Africa. European Union Tropical Forestry, Paper 2. Overseas Development Institute and the European Commission, London and Brussels, 1999.
- [11] Castro, H. International Conventions. The Energy and Biodiversity Initiative, Conservation International, U.S., 2003, www.conservation.org
- [12] Cobbinah, P.B., Black, R., & Thwaites, R. Biodiversity Conservation and Livelihood in Rural Ghana: Impacts and Coping Strategies. Environmental Development, 2015. Accessed online on 18th February, 2017 at <http://dx.doi.org/10.1016/j.envdev.2015.04.006>
- [13] Danish, K.W. International Environmental Law and the 'Bottom-up' Approach: A Review of the Desertification Convention. Indiana Journal of Global Legal Studies, 1995, Vol. 3, No. 1
- [14] Derkyi, M.A.A. Effective Policy Formulation and Implementation for Sustainable Management and Utilization of Mangroves in Ghana. Consultancy Report for ITTO Pre-Project PPD 108/04 Rev. 1. (F): Sustainable Community Management, Utilization and Conservation of Mangrove Ecosystems in Ghana, 2007.
- [15] Diawuo, F. and Issifu, A.K. Exploring the African Traditional Belief Systems in Natural Resource Conservation and Management in Ghana. The Journal of Pan African Studies, 2015, Vol. 8, no. 9
- [16] Garbach, K., Milder, J. C., Montenegro, M., Karp, D. S. and De clerck, F. A. J. Biodiversity and Ecosystem Services in Agroecosystems, Elsevier, Inc., 2014.
- [17] Gbolonyo, J.S.K. Indigenous Knowledge and Cultural Values in Ewe Musical Practice: Their Traditional Roles and Place in Modern Society. PhD Thesis. U.S.A.: University of Pittsburgh, 2009.
- [18] Hefferman, C. Qualitative Research Approach, 2013. www.explorable.com (Accessed 2 August 2016)
- [19] Infield, M. and Mugisha A. Culture, Values and Conservation: A Review of Perspectives, Policies and Practices, Fauna and Flora International, Cambridge, UK, 2013.
- [20] Kehinde O. African Religion and Environmental Dynamics. Journal of Studies in Social Sciences. ISSN 2201-4624, 2013, Vol. 4, No. 2, 199-212.
- [21] Kumekepor, K. B. Research Methods and Techniques of Social Research. Ghana: SonLife Printing Press and Services, 2002.
- [22] Liaison Group of Biodiversity-Related Conventions, 2006, Convention on Biological Diversity
- [23] Mensah, O.S. and Amoah, S.T. Co-managing Ecosystem services of Forest Reserves in Ghana: The case of the Bobiri Forest Reserve in Kubease in the Ashanti Region of Ghana, 2013. <http://www.udspace.uds.edu.gh> (accessed 2015 October 15)
- [24] Mogalakwe, M., The Use of Documentary Research Methods in Social Research, African Sociological Review, 10, (1), 2006, pp. 221-230.
- [25] Msuya, T.S. and Kideghesho, J.R. The Role of Traditional Management Practices in Enhancing Sustainable Use and Conservation of Medicinal plants in West Usambara Mountains, Tanzania. Tropical Conservation Science Vol. 2 (1): 88-105, 2009. ISSN 1940-0829 tropicalconservationscience.org
- [26] Pietkiewicz, L., and Smith, J. A. A Practical Guide to Using Interpretative Phenomenological Analysis in Qualitative Research Psychology, Psychological Journal, 2014, 20, 1, 7-14.
- [27] Presbey, G.M. H. Odera Oruka on Moral Reasoning. The Journal of Value Inquiry, 2000, 34: 517-528
- [28] Shah, A. Loss of Biodiversity and Extinctions. Global Issues, 19 Jan. 2014. Web. 11 Apr. 2017. <<http://www.globalissues.org/article/171/loss-of-biodiversity-and-extinctions>>.
- [29] Smith, J. A., and Osborn, M., Interpretative phenomenological analysis, In Smith, J. A., editor, Qualitative psychology: A practical guide to methods, London, Sage, 2008, [2nd edition].
- [30] Stage, F. K., and Manning, K. Research in the College Context: Approaches and Methods, New York, Brunner-Routledge, 83-97, 2003.
- [31] UNCED, Agenda 21, Recognizing and Strengthening the Role of Indigenous People and

- their Communities. United Nations Conference on Environment and Development, June 3-14, 1992. Rio de Janeiro, Brazil
- [32] United Nations Conference on Environment and Development (UNCED) Agenda 21, Rio de Janeiro, Brazil, 3-14 June, 1992 Accessed online on 20th February, 2017 at <https://sustainabledevelopment.un.org/milestones/unced>
- [33] United Nations Decade of Education for Sustainable Development (2005-2014), The DESD at a glance, p. 9
- [34] United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), United Nations 07-58681-March 2008-4000 Accessed online on 25th February, 2017 at <http://indigenousfoundations.arts.ubc.ca/home/global-indigenous-issues/>
- [35] United Nations Intergovernmental Negotiating Committee for a Convention to Combat Desertification in countries experiencing serious drought and/or desertification, particularly in Africa, U.N. Doc. A/AC.241/27 (1995), 33 I.L.M. 1328
- [36] Wilder, B.T., O'meara, C., Monti, L. and Nabhan, G.P. The Importance of Indigenous Knowledge in Curbing the Loss of Language and Biodiversity. Bioscience, 2016, 66:449-509. doi:10.1093/biosci/biw026 Vol. 66 No. 6
- [37] World Wide Fund for Nature, 2016. Retrieved from wwf.panda.org on 4/2/2017
- [38] Convention on Biological Diversity, United Nations, 2010.