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THE HIGH IMPACTS OF ASANTE INDIGENOUS KNOWLEDGE IN BIODIVERSITY CONSERVATION ISSUES IN GHANA: THE CASE OF THE ABONO AND ESSUMEJA TOWNSHIPS IN ASHANTI REGION

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ABSTRACT: *The time-tested, resilient and proactive indigenous knowledge of the Asantes were and are still indispensable in the conservation of the biodiversity resources in the Ghanaian community. The researcher critically analysed the high impacts of Asante indigenous knowledge systems in the areas of taboos, cosmological beliefs and totems in conservation issues in the Abono and Essumeja townships. Using the qualitative research approach with descriptive study, document analysis and case study research methods, the study revealed the enormous impacts of the of indigenous knowledge systems in constantly monitoring the attitudes of residents toward the wanton destruction of the biodiversity resources in the environment. Key informants like Asante chiefs, elders, old indigenes, caretakers of some reserves in the area as well as some youths were purposively and stratified random sampled and interviewed to solicit for their views on the impacts of these Asante knowledge systems in conserving the high taxas of flora and fauna species in the traditional area. Direct observations of the impacts were carried out by the researcher and his research assistants while analyzing historical documents of the Abono and Essumeja Townships. The study concluded that these indigenous knowledge systems must not be brushed off as superstitious nonsense. Rather, they must be critically weighed with the assistance of culturists to select the valid and modern-applicable aspects of the indigenous knowledge systems and synergize them with the academic scientific knowledge systems in formulating biodiversity conservation policies and strategies in Ghana.*

KEYWORDS: Asantes, Biodiversity, Conservation policies, Cosmological beliefs, Impacts, Indigenous Knowledge, Totems, Taboos

INTRODUCTION

Biodiversity refers to the various complexities in the diverse species and genes, their habitats and their ecosystems (CBD, 1992). Humans benefit greatly from these vital resources in our environment, thus, the flora and fauna species. For instance, it is the biodiversity resources in nature that cools down the earth's temperature as noted by Leaky and Lewin (1996). The bio-resources serve as a barricade protecting the earth from natural disasters like floods, hurricanes, tornados, bush fires etc. The basic necessities of life are constantly provided by the biodiversity resources in the environment. Also, virtually all kinds of ailments that plague mankind can be cured using medicine gleaned from the flora or fauna species in nature (Attuquayefio & Fobil, 2005).

Globally, it is estimated by experts that the world loses between 1000 and 10000 times higher than their natural extinction rate (WWF, 2016). The situation is no different in Ghana. Tutu, Ntiamoa-Baidu and Assuming-Brempong (1993) estimate about 4% of the GDP loss of Ghana's economy which is US$54 billion to biodiversity depletion. There is thus a growing

concern by national and international conservation bodies for strategies and policies to curb the great blow of biodiversity depletion globally. Several modern conservationists and biodiversity conservation planners resort to the use of only scientific models of conservation which offers only a truncated approach limited to one discipline thus academic scientific knowledge. Owing to this, they fail greatly to combat the biodiversity menace when used in isolation (Sinclair, Tuke & Opiang, 2010).

Traditional knowledge has proven very effective in conserving the biodiversity resources in the environment. The Forest Peoples Programme that was undertaken in December 2015 buttresses this well known but overshadowed fact that the earth's areas of high taxas of biodiversity resources are stepped in the territories of indigenous communities. These compact societies cleverly managed their environment using strategies curled from their time-tested and proactive indigenous knowledge rooted in their cultural and artistic practices like cosmological beliefs, taboos, totem, proverbs, folklores, myths etc. These indigenous knowledge systems have been recognized by international conservation giants building up to the formation of the International Indigenous Forum on Biodiversity (IIFB) and Center for Indigenous Knowledge and organizational Development. The high impacts of indigenous knowledge led to the holding of two instrumental meetings that took place in Montreal on the 2nd and 7th of November by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the Ad Hoc Open Ended Working Group on Article 8 (j) and the Aichi Targets (Target 18) respectively. These iconic meetings accentuated the relevance of indigenous communities, their indigenous knowledge systems and their immense contributions in achieving the strategic plan for biodiversity 2011-2020. This clearly underscores the high impacts of indigenous knowledge in biodiversity conservation issues.

Asante indigenous knowledge has been the huge figure in the conservation of the biodiversity resources in the Ashanti region of Ghana. Boateng (1998) noticed that it was the resiliency of indigenous knowledge that was the sole anchor saving and conserving the biodiversity resources in the past and even today in Ghana. Adom (2016) highlighted that the creative forebears of the Asantes formulated these indigenous knowledge forms to '…maintain a high ethical code of living and thus endorsed some social norms and behaviour' that ensured social progression and barred against the wanton depletion of the biodiversity resources in the environment. This clearly points out that the indigenous knowledge of the Asantes are very important as they contain viable conservation ethics that can conserve the remnant biodiversity resources in Ghana. It is however sad that these valuable assets of ecological and conservation wisdom have been discarded and even mocked at by technical experts and scholars who are fascinated with Western science and sees it as the only solution to the biodiversity crisis in Ghana and globally. This is certainly not factual. Golo and Yaro (2013) argued that most of the conservation policies that have failed are as a result of singlehandedly looking to Western science for solving the biodiversity crisis. Are good and relevant conservation ethics in the indigenous knowledge? Certainly! Mapira and Mazambara (2013) realized that even before encountering Western knowledge through colonization, the Africans used indigenous knowledge systems in managing his natural resources and in skillfully remedying the environmental challenges that they faced. These unique biodiversity conservation strategies embedded in the indigenous knowledge systems are environmentally friendly and have high impacts in biodiversity conservation and sustainability (International Institute for Environment and Development, 1992). That is why many modern scholars like Wuver and Attuquayefio (2006) recommended that indigenous knowledge must be factorized into modern biodiversity

conservation strategies and sustainable conservation programmes via rigorous engagement of the local people and their cultural practices.

In Ghana, most of the high taxa areas of biodiversity have been protected using indigenous knowledge systems such as taboos, myths, folklores, proverbs, festivals, cosmological beliefs etc. There are diverse ethnic societies in Ghana but it is interesting to know that their cultural setup and indigenous knowledge systems are not very different. However, Gyekye (1996) noted that the Asante Indigenous knowledge systems share the most commonalities with the other knowledge systems in the other ethnic societies in Ghana. As such, universality of research findings from rigorous analysis of the Asante indigenous knowledge systems can be applied to the situations existing in other parts of the country. Therefore, the researcher carried out this research to assess the high impacts of the Asante indigenous knowledge systems in the Abono and Essumeja townships where the abundant biodiversity resources have been conserved as a result of these indigenous knowledge systems. It was imperative to undertake such a research to assess the impacts of the Asante indigenous knowledge in the face of Westernization with its elements of technology, Christianity, academic science etc. Also, there was the need to accentuate the high impacts of these Asante indigenous knowledge systems and their quintessential role in biodiversity conservation issues as well as their socio-economic impacts in modern Ghana using the Abono and Essumeja townships in the Ashanti region as study areas.

Brief Overview, Description and Importance of Indigenous Knowledge

Indigenous knowledge has earned many definitions. It is generally accepted as the knowledge that is community or locally developed by the forebears of the community (Pachauri & Reisinger, 2007). This highly crafted knowledge is handed down to generations orally through the word of mouth. Ward (1989) refers to it as People's science, ethno science, folk ecology, village science, citizens' science, local knowledge or traditional knowledge. This traditional knowledge is developed through experiences of the local communities in managing the conditions that challenge them in their everyday life (Matsika, 2012). It is viewed as a scientific knowledge form because scholars and scientists today have seen that they have scientific underpinnings. Some of these indigenous knowledge forms have conservational values which transcend the stream of time and can be utilised in today's biodiversity conservation issues. For instance, Boateng (1998) mentions that there was a taboo which is a classic example of indigenous knowledge systems, against the clearing of vegetation thirty metres to water bodies. Today, scientists have seen the scientific import of this indigenous knowledge that the vegetations at the banks of water bodies serve as a barricade in preventing an overflow of water bodies and a possible flood as a result. Thus, it is no exaggeration to refer to the ethnic or locally designed knowledge as 'science'.

Indigenous knowledge is not an outdated form of knowledge which cannot be utilised in modern developmental agenda. Osei (2006) noted that indigenous knowledge systems like taboos that points out the 'dos' and 'donts' of actions in the society is subject to even metaphysical openness and overridability. Materer, Valdivia and Gilles (2002) agrees that indigenous knowledge gives room for adaptation to meet the needs of the contemporary society. It is true that not all forms of indigenous knowledge play the same tunes of modern society's developmental sound and may need little modifications (Ajani, Mgbenka & Okeke, 2013). This does not dissuade the total indigenous knowledge systems as lagging in time and development. Indigenous knowledge is acknowledged as the basic component of the

knowledge stock of every country and as such is fundamental to the development of every nation (World Bank Group, 1997).

Diawuo and Issifu (2015) realized that the indigenous knowledge systems like taboos etc. are very friendly to the environment in its approach and implementation. This is largely because the indigenous knowledge is found with the people and it has been an integral force of their everyday life activities. This makes it easy for the local people to help in attaining the successes of strategies formulated from them. G'Nece (2012) agrees that these indigenous communities are the main custodians of the lands and as stewards they are stakeholders who must be consulted in any conservation policy or strategy developed to curtail the destruction of the biodiversity resources. This emphasizes why policies that were formulated with no involvement of the local people and their indigenous knowledge systems drastically failed (Sinclair et al, 2010).

Gadzekpo (2013) indicates that the indigenous knowledge forms like proverbs when reasoned with the local people during societal meetings assist in inculcating conservation ethics and values for protecting the biodiversity in the environment. Realising that they are stewards of the resources in their environment, the elders in most local communities earnestly strive to prevent the wanton destruction of the bio-resources by imposing strict sanctions on culprits of such foul acts (Danquah, 1968; Boateng, 1998).

Also, knowing that the ancestors and deities especially the supreme deity will hold them accountable for the way they monitored and managed the biodiversity resources in the environment, societal members strived very hard to judiciously use the biodiversity resources in nature rather than greedily using them. Extreme fear of displeasing these spirit forces whose punishments are severe positively regulated the attitudes of societal members toward the biodiversity resources in their environments (Adom, 2011). Thus, advocating and stressing on these ideals of accountability and stewardship in conservation campaigns for biodiversity can be a perfect antidote for arresting negative attitudes towards the bio-resources in nature. Battiste (2002) even suggests that the indigenous knowledge systems must be intertwined in the curriculum of students in all levels of education. This, the researcher believes is a step that needs to be pursued because it would gradually nurture values of conservation and sustainability in the children and youth who hold the pipes for the future.

It is thus essential that indigenous knowledge systems form part of developmental policies and strategies for all Sub-Saharan states especially due to their high impacts in the every life activities of the people. Governments must support traditional authorities through legislation to help them enforce the indigenous knowledge systems and punish culprits who fail to conduct themselves in their bidding and thus indiscriminately destroy the environment (Awuah-Nyamekye, 2013). Indigenous knowledge systems must be used alongside the proactive Western scientific knowledge to advance today's developmental agenda. They must be seen s complements as Wilder, O'meara, Monti and Nabhan (2016) counseled. This would enhance and heighten the conservation strategies that are formulated to fully combat the biodiversity canker in Ghana, Sub-Saharan Africa and globally as well.

Sub-Saharans need to pick viable lessons from other countries that have successfully implemented the values enshrined in their indigenous knowledge systems in saving their rich biodiversity resources. Successful countries that have implemented the wisdom and insight of their indigenous knowledge systems in their developmental agendas like China, India, Brazil etc. are making giant headways in saving the remnant of their biodiversity resources in their

environment. At the inauguration of the high level segment of the 11th conference of parties to the Convention on Biological Diversity that took place on the 16th of October, 2012, the prime minister of India revealed the secret behind the successes of India biodiversity conservation strategies. He said that it was as a result of their fusing together of the country's indigenous knowledge systems with the Western scientific knowledge as well as participatory approaches that encourages the involvement of local communities. Biodiversity conservation planners in Ghana and the other African sub regions must look into these indigenous knowledge systems to find out ways that they can merge them with the modern scientific knowledge to help save Africa's biodiversity which is accelerating in wanton depletion and extinction.

METHODOLOGY

The study was driven by the qualitative research approach. This research design answers questions about the complex nature of phenomena, often with the purpose of describing and understanding the phenomena from the participant's point of view. This approach seeks to collect an extensive amount of verbal data from a small number of participants through interview, observation and questionnaire, organize those data into small forms that gives them coherence, and use verbal descriptions to portray the situation studied. Interpretative narratives are constructed from the data to capture the complexity of the phenomena under study whilst helping the researcher to judge the effectiveness of policies or practices (Leedy & Ormrod, 2010; Creswell, 2009). Descriptive study, phenomenological study, case study and document analysis were the research methods that guided the seeking of answers for the main research questions for the study which were:

1. What are the impacts of the Asante Indigenous Knowledge in conservation issues in the Abono and Essumeja townships in Ashanti region?

2. How can Asante Indigenous Knowledge be revisited and revamped in the Abono and Essumeja Townships in the Ashanti region to help in the biodiversity conservation in the areas?

3. What are the socio-economic benefits of upholding the Asante Indigenous Knowledge and its implication to Biodiversity conservation in the Abono and Essumeja townships?

The research instruments that assisted in the gathering of relevant data for the study were interviews and observations. In-depth personal interviews were conducted with the Asante chiefs in the areas, traditional priests and priestesses as well as spokespersons in the traditional courts. The elders in the traditional palaces were engaged in focus group discussions where their time-tested experiences regarding how the Asante indigenous knowledge systems have enhanced and assisted in the conservation of the flora and fauna species in the areas were accrued. The researcher craftily and rigorously observed the implementations of the Asante indigenous knowledge systems in the everyday life activities of the people such as during farming activities, fishing activities etc. These direct observations helped the researcher in noting for himself the conservation worth of the Asante indigenous knowledge systems in biodiversity conservation issues. As a non-participant observer, the researcher was able to record the events and the phenomena under study without any distractions (Kumekpor, 2002).

The population was first purposively sampled into four categories and these categories were then stratified random sampled. Thus, a total sample of fifty (50) respondents was engaged in the research at a randomization level of 40%. The sampling design is illustrated below:

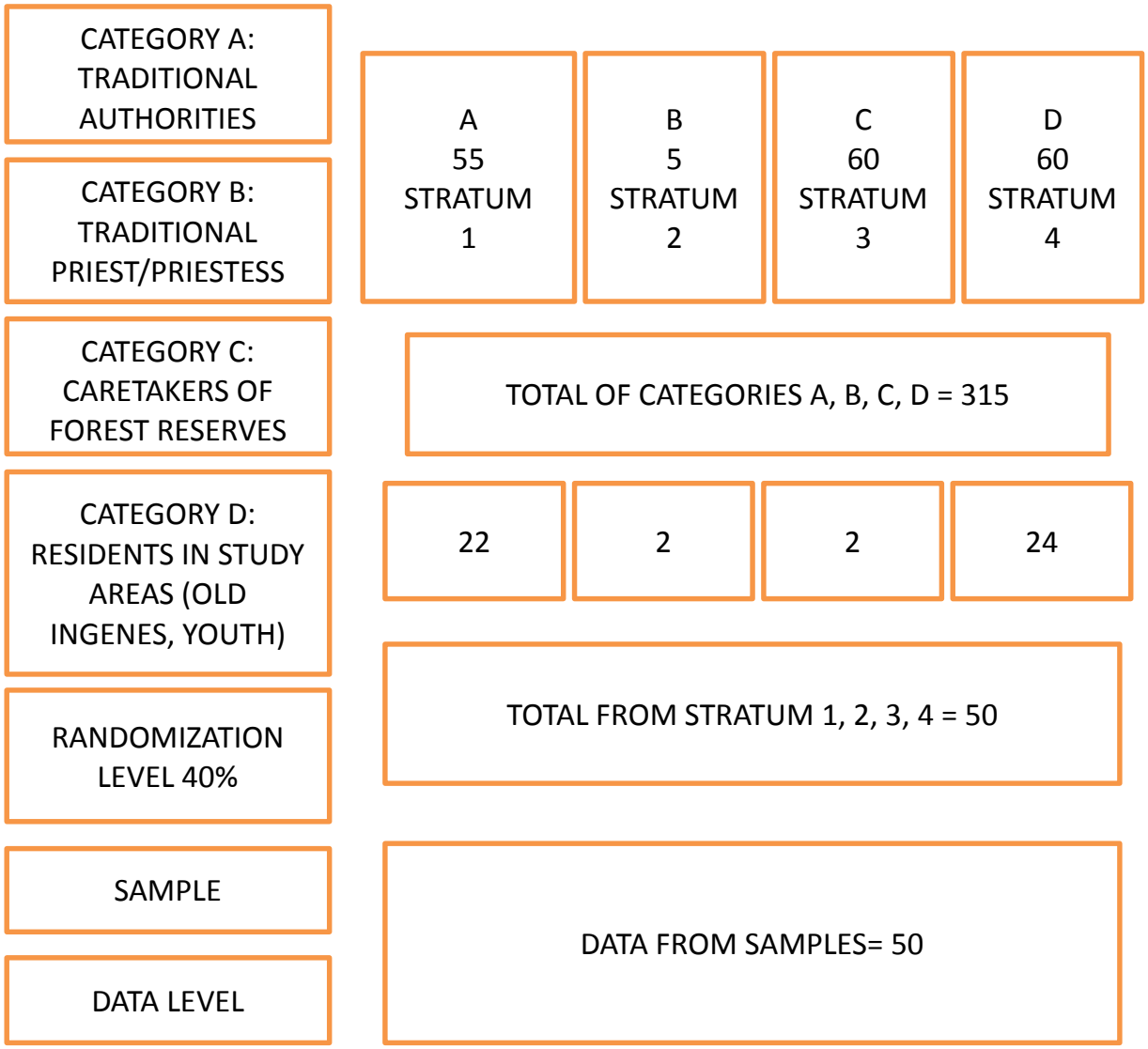

Fig. 1. The Sampling Design for the Study

The interpretivist philosophical paradigm was the main philosophical backbone for the study. Choi (2001) says of interpretivists that they seek to comprehend the meanings behind the practices of people from the insider's perspective. This was exactly the stand of the researcher because he wanted to find out the socio-economic underpinnings of the Asante indigenous

knowledge systems and stress on the need why they must be looked at even in the face of modernization if they still have high impacts in biodiversity conservation issues.

The conceptual framework adapted for the study shows clearly that indigenous knowledge systems in the light of taboos, totems, cosmological beliefs, myths, folklores and proverbs have conservation worth for Ghana's biodiversity. Owing to this, the researcher believes that underpinnings from these Asante indigenous knowledge systems can be used in designing pragmatic traditional biodiversity conservation strategies which when synergized with the scientific models of conservation can help salvage the remnant of Ghana's rich biodiversity resources in the environment. The conceptual framework which was adapted from the IPBES conceptual framework is illustrated below:

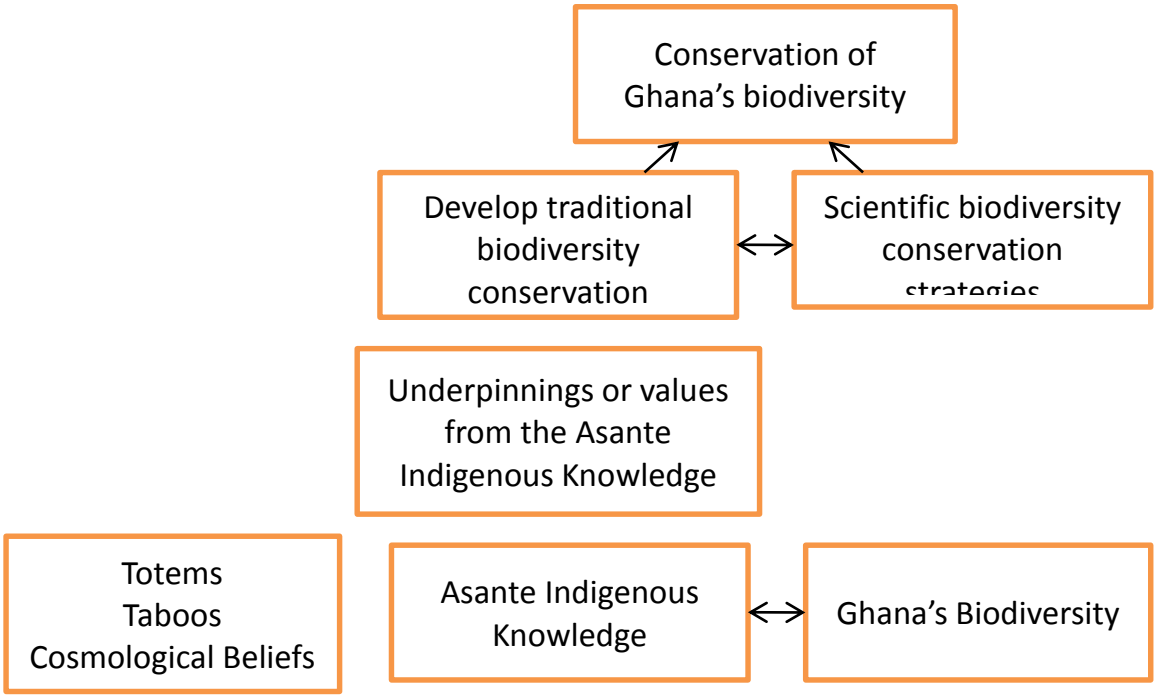

Fig.2. The Conceptual Framework for the study adapted from the Intergovernmental Platform on Biodiversity and Ecosystems Services Conceptual Framework

Finally, the data collected through the two principal instruments thus interviews and observations were rigorously and critically analyzed based on the research questions set for the study. The data analysis spiral (Creswell, 1998) which assists greatly in synthesizing and analyzing qualitative data was implemented for analyzing and interpreting the data accrued from the study. The data was first organized into units. These units of data were read critically on several occasions. They were then classified based on their common contexts and initial interpretations were given while making rigorous comparisons and striking similarities. Propositions were then made and the general portrait or picture of the various themes was created to point out conclusive and tentative answers to the research questions for the study.

RESULTS AND DISCUSSIONS

The findings from the study reiterate the assertions of the research that Asante indigenous knowledge exerts a high impact in conservation issues in Ghana. It is interesting to note that the results from the two townships indicates the benefits of heeding to the valuable conservation values in the Asante indigenous knowledge and the dangers and backslides of discarding them in conservation issues in Ghana. The findings from the Abono Township illustrate the negative effects of abandoning the Asante indigenous knowledge. However, the findings from the Essumeja Township rather portrays the merits and benefits of utilizing the proactive conservation values in the Asante indigenous knowledge in curbing the wanton destruction of the biodiversity resources in the environment. The findings will be presented and discussed based on the research questions that pivot the study.

The High impacts and Socio-Economic Benefits of Asante Indigenous Knowledge and its implication for Biodiversity conservation

The application and observance of the philosophical underpinnings of the Asante indigenous knowledge had a high impact in the socio-economic life of the people as the accrued data suggest. This was the case in the Abono Township where the total livelihood of the residents in the town rested on the biodiversity resources in the environment particularly the Bosumtwe Lake and its accolade water bodies.

Fishing as was revealed to the researcher was a very enterprising business activity that famed the township in some times past when the observation of the Asante indigenous knowledge systems like taboos, totem, cosmological beliefs, myths etc. were in full force. Not wanting to incur the wrath and displeasure of the river deity, societal members meticulously observed all taboos that were seen as defiling the lake such as not bathing, throwing refuse, defecating in the lake, washing and even pinching residential areas close to it. However, due to the less impact of the Asante indigenous knowledge systems, it has greatly affected the yield of fish. One famous elderly fisherman disclosed to the researcher of the scanty yield of fish that they catch as well as a great dwindle in their sizes. He said ‘my ancestors and the river deity are angry with us because of the abuse of the river through inhumane practices that were formerly banned. Vesting their anger on us they have also refused to give us fish’. Other respondents who were also elderly complaint that they sometimes fish all night with very minimal catch that adversely affect the fishing business. The youths interviewed expressed disappointment in the fishing profession and these were mostly wards of the elderly fishermen who decided not to take up the fishing business as a profession because it was no more lucrative. The elderly women who engaged in the selling of fishes in the Abono Township lamented to the researcher that the fishing business was so poor that they sometimes did not get fish to sell to fend for themselves and their families. When the researcher asked one of them the causes of the dwindling numbers in the fish yield, an elderly fish seller responded. She said ‘the water bodies were very large when I was in my teens but now the sizes have really reduced. The lake used to cover the areas we are standing now but has now greatly subsided. The youth have abused the taboos and our cosmological beliefs and the anger of the river deities and the ancestors are on us.’ The other fish sellers interviewed shared similar thoughts.

Fig.1. Fish Sellers Working on the scanty yield of Fish by the Fishermen

The researcher also confirmed the accounts gave by the respondents when he observed consistently and on different occasions the weak implementation of the Asante indigenous knowledge systems in the Abono township and the engagement of activities that were not bio-friendly by both the youth and elderly. The researcher saw a male elderly person urinating in the lake while others carelessly brought their bathing sponges, towels and soaps to bath directly in the Lake. Others threw refuse in the lake and poured food residues after washing their utensils into the lake.

Fig.2. Some residents engaging in tabooed practices like washing in and at the shores of the lake

Scientifically, it is the bad practices of the people that negatively affected the fish yield and the fishing business. Most of the aquatic species in the lake particularly the fishes contract various diseases like Giardiasis and amoebic dysentery by consuming the contaminated water as noted by the Planetary Notions 2002 report. With the numerous aquatic species facing extinction owing to those practices that are not bio-friendly, the researcher estimates that if those attitudes are not curtailed would end up collapsing the fishing business entirely and thus making life very unbearable for the residents. Some of the married women interviewed in the town said that sometimes they had to board a car to the neighboring villages to buy fish at exorbitant prices and this was negatively affecting them economically. One elderly woman in her 70's nearly broke out in tears when recounting the ordeal her family was going through due to the economic downslides as a result of the less lucrative nature of the fishing business. She lamented that 'my husband is a fisherman and I sell the fish he brings home. Unfortunately because of the fewer yields of fish, we cannot pay for the school fees of our four grandchildren whose parents have passed on. Sometimes, food on the table is a big challenge. My ancestors are punishing us for not keeping the biodiversity resources in good condition. Our chief and the traditional council have failed us.' This was partly true because the Abono traditional council seemed to be unconcerned about the wanton depletion of the biodiversity resources in the environment though the chief and his council of elders blamed it on the advent of Christianity and modernization. 'How are you going to account to the ancestors for the wanton depletion?' the researcher asked the elders in the Abono Township. The elders stood with long faces and agreed with the researcher's suggestion of averting the situation by maximizing supervision and ensuring the observance of the Asante indigenous knowledge systems.

The researcher observed that the flora species were indiscriminately destroyed by some of the residents for charcoal production, firewood and other commercial purposes without a dread for accountability to the spirits or ancestors. Though the forest reserve authorities were putting in strategies to halt it, it was still soaring up. Owing to this, an elderly worker in the Abono information centre through personal interview told the researcher that there have been intermittent bush fires as a result of that. Also, the flora vegetation at the shores of the Bosomtwe Lake was almost cleared resulting in its overflow that causes flooding in the surrounding residential houses. The belief in animism that says that these plant species have souls or spirits in them which must be respected formerly regulated the felling of the trees in times past as the *Adontenhene* of Abono told the researcher. Due to the high pressure on the flora species in the environment, most of the abundant fauna species particularly birds, monkeys, antelopes and other mammalian had left the place and run to other dense forest tracts in the other villages. However, the totemic bird which is the falcon bird was still not killed since it was believed to bring a curse on the culprit. The flora species were observed to be in isolated tracts.

Fig.3. The isolated forest tracts and some cut trees observed by the researcher

The situation at the Abono Township was contrary to what the researcher noticed in the Essumeja Township. The Essumeja traditional council was insistent on the implementation of the Asante indigenous knowledge systems especially in regulating the attitudes of residents toward the biodiversity resources in the environment. Strict punishments were given to culprits who abused the biodiversity resources in the environment. The firm and strict sanctions ensured by the vibrant traditional council has made the township to lavish with high taxas of biodiversity.

The elders interviewed in the focus group discussion fashion narrated various myths and folklores about the repercussions of not observing cosmological beliefs, taboos, totems, etc. governing the wise usage of the biodiversity resources. One elderly member who has served on the traditional council for over forty years said with conviction that 'my ancestors will reward me and welcome me peacefully when I go to them after my physical passing'. This was because he strongly believed that he had done his part by ensuring that the lands and its resources left in their care by the ancestors were not indiscriminately and greedily used by anyone. They even said the paramount chief who has passed on recently when this research write-up was been written could not sell plots of land without their knowledge and deliberations. Due to the compact nature of their traditional systems and strict sanctions for infringers of the Asante indigenous knowledge systems like taboos, the youth were in the known of these traditional regulatory systems. No wonder when the researcher asked an eighteen year old boy who was going to farm if he can just cut any tree, he with wild face told the researcher that 'some plants are not supposed to be cut because they contain spirits and the offensive forces might attack me and the ancestors might be annoyed with me. I want to have my own family with children and this will be as a result of the blessings from the deities and ancestors. How can I indiscriminately destroy the environment? God is even watching'.

There were several myths and stories surrounding people who were sanctioned by the traditional council with huge fines because of abusing the biodiversity resources in the environment. Some of the folklores and myths narrated to the researcher included farmers and

hunters were mysteriously found dead in their farms as a result of bad farming practices like bush fires etc. Others persons who abused the Asante knowledge systems were struck with ailments like leprosy and even madness for wantonly destroying nature's resources or clearing some sacred forests believed to be the abodes of powerful deities and ancestors in the area. For instance, the Asantemanso sacred grove in the area which is believed to be the birthplace of the Asantes is not to be abused. It is reserved as the home of the Asante ancestors. Respect and awe for them restrain residents and visitors who are told these folklores and myths not to abuse the biodiversity resources in the area. This indicates that Asante indigenous knowledge systems still hold great influence in biodiversity conservation issues in Ghana and as such must be looked at critically in biodiversity conservation discourses.

Fig.4. The High Taxas of Biodiversity resources in the Essumeja Township

The socio-economic life of the residents of Essumeja is peaceful with no or minimal record of habitat destruction from natural causes such as flooding, bush fires as it's the case of the Abono Township. The residents especially the farmers and hunters whose livelihoods depend on the biodiversity resources in the environment do not complain bitterly of poor farm yield and other repercussions as a result of the adverse effects of the biodiversity resources in the environment. Though the entire nation faces economic challenges, the farmers and hunters enjoy some degree of yield in their economic activities. The situation would have been aggravated, as most of the farmers interviewed admitted. Also, their health condition is better because they enjoy serene atmosphere due to the constant circulation of fresh air supplied by the abundant flora species in the area. The scenic environment makes the area aesthetically pleasant. The elders said that 'the *'Dumso Dumso'* (Electricity fluctuation in Ghana) propels them to sit outside mostly in the evenings to enjoy the sweet melodies of the avifauna species and breeze in their households'. What would the condition of the people have been if they had wantonly destroyed all or a greater number of the biodiversity resources in their environment? Certainly they wouldn't have had that pleasant experience to narrate to the researcher.

Revisiting and Revamping the Asante Indigenous Knowledge in conservation issues in the Abono and Essumeja Townships

All the respondents interviewed by the researcher agreed that the Asante indigenous knowledge systems assist greatly in the conservation of the biodiversity resources in Ghana. However, these indigenous knowledge systems face extermination due to the un-curtailed impacts and total embracement of Western culture. The elite in many societies demean the values of these rich avenues of conservation values. The researcher noticed this among some of the interviewed technical experts in the forest reserve in Abono. One of them said that 'these practices were products of uncivilization and illiteracy periods'. Two other workers there even mocked the cosmological belief systems as lies. However, when questioned whether to dare them, they were hesitant. Their remarks coincide with what Battiste (2002) noticed about some scholars who shared these same sentiments. The elders and some few youth in the Abono Township believed that a re-visitation and revamping of the Asante indigenous knowledge systems can help save the remnant biodiversity resources in the area. Others thought that the sting of Western culture and its pervasiveness will pose a serious challenge in the renaissance and implementation of the Asante indigenous knowledge systems in today's developmental agendas. The question the researcher posed them that got many of the respondents thinking was 'Why are some communities with elite leaders even implementing these Asante indigenous knowledge systems that have also positively saved the biodiversity resources in their environment?' The researcher cited the paramount chief of Asante Bekwai who is an elite but still ensures the smooth implementation of the indigenous knowledge systems of the Asantes in the developmental planning in his jurisdiction. Several questioning revealed to the researcher that most of the respondents feel that the Asante indigenous knowledge systems were static and unchanging. They feared that some of the practices were outmoded and thus might stifle development. However, the researcher being a skilled culturist assured the respondents that indigenous knowledge is not static but it's open to changes that will suit current developmental trends as noted by Osei (2006).

The elders agreed that they will call for a communal meeting and find ways of disseminating the Asante indigenous knowledge systems to the youth especially. The local community helps in cleaning the town every first Saturday of the month as instituted by the government's sanitation programme. The researcher suggested that such days can be used as general meeting days for the chief and the people where sanctions will be reiterated to the local people.

During meetings with the elders in the town, the Essumeja traditional council members constantly remind the elders to teach their wards the Asante knowledge systems when they are with them in their houses. However, the researcher suggested other means of helping in the propagation of the Asante indigenous knowledge systems through digital forms in archive which members of the traditional council concurred. The educated residents suggested introducing the study of indigenous knowledge system in the teaching curriculum for lower and higher levels of education. These initiatives would help in the massive sensitization of the general public about the Asante indigenous knowledge systems.

SUMMARY AND CONCLUSION

The purpose of the research was to assess the impacts of the indigenous knowledge of the Asantes in biodiversity conservation issues in the Abono and Essumeja townships in the Ashanti region of Ghana. It also looked at why and how the Asante indigenous knowledge systems can be revisited and revamped into biodiversity conservation strategies, programs and initiatives in Ghana using the Abono and Essumeja townships as study areas. It also highlighted

the socio-economic benefits of adhering to the core and ethical values that underwrites the Asante indigenous knowledge systems. The study revealed clearly that the Asante indigenous knowledge systems have high impacts in the conservation issues in several communities in Ghana and thus can be powerful tool in biodiversity conservation planning.

The following recommendations have been suggested by the researcher to be implemented by the responsible agencies, the government and the general public on how to utilize Asante indigenous knowledge systems in biodiversity conservation issues in Ghana.

1. The Asante indigenous knowledge systems must be critically but carefully analyzed by policy makers and biodiversity conservation planners so as to factor them in the formulation of biodiversity conservation in Ghana.

2. Local communities where the Asante indigenous knowledge systems are exerting high impacts like the Abono and Essumeja townships in the Ashanti region, the government must charge the traditional authorities with the powers of imposing sanctions on infringers of the Asante indigenous knowledge systems as it was in the past to prevent the wanton destruction of the biodiversity resources in the environment.

3. Modern legislators must incorporate elements of the indigenous knowledge systems like taboos in environment Acts, policies etc. in solving general environmental problems confronting Ghana.

4. Biodiversity conservation planners must target on behavioural change of the Ghanaian citizenry towards the biodiversity resources in nature. This can be done by intensifying education of the general populace on the Asante indigenous knowledge systems that constantly propagate the ideals of stewardship, accountability as well as the human environment relations which are powerful conservation values for conserving Ghana's biodiversity.

5. There is also the urgent need to document Asante indigenous knowledge systems and other forms of indigenous knowledge while preserving them in digital form to educate the future progeny on Ghana's indigenous knowledge systems which have been the anchor for Ghana's national development.

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