

Behind the myth: Indigenous knowledge and belief systems in natural resource conservation in north east Ghana

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Abstract: Natural resource management issues in developing countries are increasingly mimicking western theories and the contribution of indigenous cultures and institutions are often overlooked. This research examines the role traditional belief systems and indigenous knowledge and practices have played in the management and conservation of natural environmental resources in the Upper East Region of Ghana. Some cultural practices and belief systems like sacrifices, worship, the Tindaanaship organization and the Tingaane civilization and how the Tindaanas (chief priest) communicates through the Tingaane (shrines and sacred groves) to the ancestral spirits or gods, how the people are punished if the gods are provoked were examined. The study revealed that the significant attribute of the belief systems that rest on the ascription of supernatural powers to some parts of the environment as the home of the gods has significantly helped to conserve the natural environment. The protection of these homes/areas from utilization, exploitation and use explicitly encourages conservation of environmental resources. Forbidden areas and totemic items/objects associated with worship immensely promoted conservation of resources. Over the years, traditional belief systems, practices and indigenous knowledge strategies that conserve the natural resources have been eroded or corroded by western cultural infiltration and religion. The study recommends a re-visitation of the traditional belief systems and cultural practices that promote the management, preservation and conservation of natural resources for the sustainable development of the Upper East Region and the nation at large.

Keywords: Traditional Belief System, Indigenous Knowledge, Natural Resource Conservation, Tindaana, Tingaani area, Shrines and Sacred Groves

1. Introduction

Natural resource management issues in developing countries are increasingly mimicking western theories, while the contribution of indigenous cultures and institutions are often overlooked [11]. The various natural resource management (national and international) policies, programmes and strategies have marginalized the involvement of traditional institutions and indigenous knowledge systems. It has become necessary that more feasible and sustainable approaches for Natural Resource Management (NRM) have to be pursued if the drastic loss of biological ecosystem and cultural diversity is to be curtailed and natural regeneration is allowed to occur [25, 6].

Biodiversity loss has been a major concern to mankind, especially during the last quarter of the previous century. This concern culminated in the "Biodiversity Convention" that was opened for signature at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, June 1992. Since then different international fora, including e.g. the Beijing Conference for Women in 1995 echoed the problems of continuing environmental degradation [17].

Local people have developed a variety of consistent resource conservation and management strategies in many parts of Africa in the past [3]. Traditional African societies also observe environmental principles that help in regulating their interactions with the natural environment [27]. It has been recognized that Traditional belief system is embedded with environmental characteristics, features and

representations unlike the Western culture which saw this belief system as inimical to the growth, unity, and cohesion of the communities [3]. The coming to being of western civilization and culture eroded the rich cultural values, belief system and norms of the indigenous people and also changed their way of worship. [ibid]

Deforestation and land use has become a major problem confronting the Upper East Region of Ghana. This is as a result of the activities of rural small holder farmers on traditionally protected areas due to increasing pressure on the demands of agricultural land and forest products [10]. It is further observed that indiscriminate land use including farming is a problem that forests within the region has to contend. There is threat to wildlife populations in all reserves from illegal hunting, grazing and activities of local small holder farmers [ibid]. Changes in land use policy from the colonial time to now, have taken control of the land and other natural resources management from the hands of local authorities (the 'Tindaana' and the chiefs) this control gave the ancestral right and authority of caring, protecting and managing forest resources (sacred grove, earth shrines), land, water (sacred ponds) and other such resources located within such lands in the region and the country at large [ibid].

There is also pressure put on natural resources by the growing population in terms of housing expansion, extensive agriculture and industrialization. The protection of the natural environment is very important to indigenous people since they derive benefits from the environment. Despite the fact that many benefits are derived from the natural environment, human activities continuously degrade the environment. The question therefore can be asked thus: are myths still relevant in the management of natural resources?

In view of this main question posed, the study will be guided by the following objectives:

1. To examine the roles of Traditional belief systems in natural resource conservation in the Bongo district of the Upper East Region of Ghana.
2. To assess the extent in which social change has affected the indigenous methods of natural resource conservation.
3. To suggest alternative ways of conserving the natural environment.

1.1. The Problem Assurance Model

The conceptual underpinning of this study traces its roots from [15] "Tragedy of the Commons" theory. The essence of Hardin's tragedy is that, it explains varied cases of resource over-exploitation, and has a considerable influence on resource policy around the world. The theory argues that resource users cannot be left to decide alone how to use the resources and that their use has to be curtailed to prevent over exploitation. The acceptance of Hardin's theory led to the generally pessimistic conclusion that, the possibility that resource users might be capable of self-regulation. Stuck by the logic beyond their control, individuals could

only be effectively regulated by government authority. It is with the aim of thwarting the Hardin tragedy that various governments in Africa, and other parts of the world, have, till date, assumed direct control and management of natural resources, such as forest, water bodies, game and wild life [6]. It is against this background that guided government policies in their design of codes, and laws in the management of "common pool resources". The 'appropriateness of governments' direct control of what should properly be locally managed for the livelihood enhancement of the poor is increasingly being questioned. I agree with [6] that, "traditional institutions are vibrant and organized on the basis of their religion and cultural beliefs to effectively manage natural resources, occupies a unique position in the management of natural resources and are widely accepted by their subjects as the religious, political, judicial and the spiritual embodiment of their communities and therefore takes obligation in the management of community resources. Unfortunately, government authorities viz a viz formal management institutions have usurped their power and authority relegating traditional institutions to the background as mere custodians of their traditions and custom of their subjects". I support [11] argument that "the alienation of local resource control to state structures ...", among other factors, accounted for resource management failures in most parts of the third world. Rules established by government authorities to manage natural resources has most often been in conflict with the needed right of local residents. Available literature [5, 19, and 23] demonstrates that local communities and traditional institutions have been able to establish and maintain organizational structures and enforce mutually agreed rules on the use of natural resources. Evidence [2, 13] also point to the fact that communities in the past had effective institutions to manage resources and that these institutions are in some places active and effective today. I also support [24] illustration that field work and theory is converging to show that where traditional institutions are given the opportunity and the resources to develop their own management systems and tenure regimes they are well able to do so.

Contrary to the 'Tragedy of the Commons' argument (grounded on the view that indigenous people are responsible for causing resource over-exploitation), [26] formulated an 'Assurance Problem' theory as a means of understanding how rural communities develop and progress their own resource management systems. The theory is framed on the principle that natural resource management policies, given the failure of the top-down (policies, codes and laws on natural resource management designed by government agencies) 'tragedy of the commons' approach, should rather seek to support traditional institutions where they are effective, and promote them where they no longer exist in their efforts to manage natural resources. It further argues that the assumptions of the 'Tragedy of the Commons' hypothesis are unrealistic: rural producers living in the same community often do not practice the same

livelihood, thus they do not share the same interests in resources, nor do they act entirely independently of their fellow producers. Hence, this approach argues that a learning process takes place between competing but linked users of resources [6]. [26] therefore, argues that individual decisions are conditioned by the expected decisions of others. Thus, if expectations, assurance and actions can be co-ordinated, there is less necessity for people to pursue ‘free-rider’ strategies: indeed, co-operative behaviour might be a utility maximising strategy. For Runge, the institutions of traditional societies exist to co-ordinate and predict behaviour. The subsequent discussions will explore how indigenous belief system contributes to natural resource management and the extent to which social change has affected the indigenous methods of resource conservation and management in the Upper East Region.

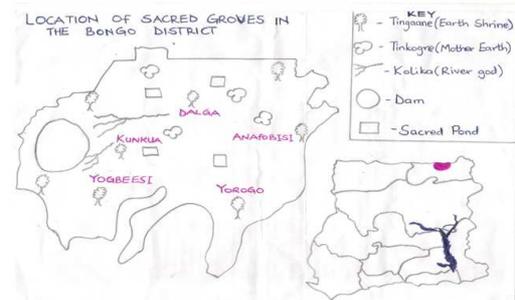
2. Methodology

This cross sectional study adopted a participatory research approach which provided greater insight and enabled local communities themselves to identify their own problems and propose solutions. The approach involved a triangulation of appropriate participatory tools of enquiry. Apart from secondary data, much of the primary data was qualitative.

The method of data collection used in this research is personal interview, literature review, focus group discussion, and site visitation. As a starter, we reviewed extensive literature on indigenous belief systems, knowledge and practices in resources management. We also conducted in-depth interviews with officials from the Environmental Protection Agency (EPA), forest commission, local government departments and traditional authorities (chief, Tindaana, clan and sectional heads). The interviews covered themes on their role in resource conservation and management. The researchers interviewed a total of sixteen persons including the chief, elders, women leaders (Magazia) and chief priest-Tindaana of various community deities. Where the chief or women leaders of any community were too young to know the traditional/cultural practices of their communities, the researchers resorted to interview older members of the community. The choice of purposeful selection is because these communities have established religious and cultural practices. Secondly, we held five focus group discussions with community members, especially the elderly who were mostly leaders. This approach is deemed appropriate when the object of the research is to explore reactions of a group or community in response to some commonly experienced aspects of their environment. Through such interactive discourses, participants were able to offer insights on the perspective of the environment, revealing clues to the social contexts that shape their opinions. Each focus group had seven participants composed of men and women. Issues discussed during the FGDs included the question of role of indigenous belief system in resource conservation,

the extent to which social change has affected indigenous methods of resource conservation, and the alternative ways of conserving and managing environmental resources. All the proceedings, which were mainly in the local language, were recorded and later transcribed, analyzed and organized around the key themes.

A total of five (5) communities namely, Yogbeesi, Kunkua, Dalga, Yorogo and Anafobisi were purposefully selected and visited for the study. A total of 7 earth shrines (Tingaane areas) were visited which includes Afessikan, Awaleyaa, Akotingre, Abolinge, Akalosikan, Akubulikan and Ayagezinye Aposaarikan. These communities were selected because they have sacred groves and ponds, earth god (Tinkogre) and shrine, hence the need for purposeful selection of the five communities under study. The communities are located within the Upper East Region. Some traditional and cultural practices are similar, with the same name in some communities. The findings from the field were documented and their implication discussed with our interviewees and discussants in the various communities in Upper East Region.



Sources: Field Survey, June, 2013

Figure 1: Map showing the location of Sacred Groves in the Bongo District.

3. Results

3.1. The Origin of the People and Some Belief Systems

The people of Bongo trace their origin or ancestors to the Mamprugu Kingdom in the Northern Region of Ghana especially those entitled to the royal skin. The District is a multi-ethnic one with two (2) major ethnic groups dominating that is, the Bosis who are from the core of the District while the Grusi are at the periphery of the District. There are also Tindaanas and chief priest found in almost every community or settlement. Yogbeesi community has a Tindaana in charge of Akubulikan Tingaane (Earth Shrine), the Kunkua community Tindaana officiates or tender Afessikan and Akotingre Tingaane (Earth Shrines), Dalga Tindaana tenders Ayagezinye Aposaarikan (Earth shrine), Yorogo Tindaana tenders Awaleyaa (Earth Shrine) and Anafobisi Tindaana tenders Abolinge, and Akalosikan (earth shrines) respectively. Two major languages are spoken in the District that is Bonni which is spoken by the Bossis and Guruni which is spoken by the Grusi. African Traditional Religion is the dominant religion in the District,

although this religion is gradually giving way to the Christian religion. From 1930 to 1990, only 5% of the District populations were either Christians or Muslims. Currently about 60% to 70% of the District population are either Christians or Muslims. About 90% of households have at least one Christian or Muslim. A lot of ailments are still being treated with Traditional Medicine and the resort to soothsaying for diagnosis of certain diseases and occurrences of calamities.

In almost all communities or settlements in the District and the region as a whole, a Tindaana (Chief Priest), Tingaane (Earth Shrine), or Tinkogre (Mother Earth) exist. The Tindaanas were and are still the custodians of the land; they are the link between the gods and the people. The Tindaana makes sacrifices to the gods for the whole community in times of communal misfortune (drought, disease and pest of crops and animals, war, outbreak of diseases) and for individuals in times of personal sorrow. All the communities also have something they hold sacred for example ponds, trees, rocks, rivers and many more. These places are revered as holy or sacred because they are the places of abode or homes of the gods and ancestral spirits. There isn't any community without a sacred grove, earth shrine, mother earth, a river, pond and part of mountain or rocks not delineated for the worship of the gods. To [17], sacred groves are pieces of land set aside for spiritual purposes; they are dotted all over Ghana. The findings is supported by [21], Traditional Protected Areas refers to sacred groves, water points, burial sites and sacred hills where shrines may be located near homes or far in the fields. He added that, these sacred places are where trees and plants are allowed to grow undisturbed and where reptiles, birds, fish and animals could have free living without fear of poaching or interference by man. Hence, the management of these areas are restricted to specialized people (Tindanas, fetish priest, rain makers and other spirit mediums). Therefore there were taboos that restricted access to these sites to particular activities and members of a community. As a result, these sites survived over several years and acted as reservoir for biodiversity despite the religious battle against them [20]. These protected areas also harbours different categories of gods responsible for the well being of the community in the area of health, fertility for men and women and regulates the amount of rain fall in the community [32].



Plate 1: Earth shrine with sacred pond.



Sources: Field Survey, Bongo district, November, 2013

Plate 2: Earth shrine.

In the Anafobisi community for instance, the clan people do not eat crocodiles because they believe that the crocodile offered assistance to their ancestors by offering its back as a raft when their ancestors were crossing a river. The Kunkua community with the Booyadoma as the Tindaana's clan do not eat goat. It is believed that the goat saved their ancestors by leading them to a source of water when their ancestors were stranded in a forest. This is confirmed by [17], in Ghana, almost every traditional ruler, chief or King has a totem. Many wildlife species are regarded as totems due to their historical or socio-cultural significance. Totem animals vary significantly over tribes and clans. They include merely mammals (leopard, elephant, lion, monkey, and buffalo) and birds (falcon, raven, and parrot). Turtles, crocodiles, snakes (python), scorpions, crabs and fishes are also considered as totems in some of the communities. This is also supported by [4], he argued that certain animals and natural objects are considered as relatives, or ancestors of their respective social units. Therefore, killing some kinds of animals' believed to be totemic is a taboo. This system is close to the culling practice of sustainable harvesting of wildlife resources among the people of Central Southern Africa. Adhering to taboos and totems ensures the continued population growth of their wildlife resources [6].

The Affesikan Tingaane (Earth shrine) is believed to be a god of rain, any time there was drought, the Tindaana who tenders the Earth Shrine with contribution in the form of flour, fowls, goat, sheep and cow make sacrifices to the gods through the earth shrine, and the rain comes. The Ayagezinye Aposaarikan earth shrine tendered by the Dalga community is believed to be a god of good harvest and the gift of wealth. When sacrifices are made to the gods, they have good harvest. Anybody seeking to be wealthy can make some sacrifices to the gods and their wish will be granted. The Abolinge, and Akalosikan earth shrine is the god of peace and child bearing. Any woman after marriage who cannot give birth, the earth shrine of Abolige is appeased with a sacrifice and making request for children. The Tindaanas and their people throughout the district all have the belief that, the gods protect the members from harm, famine, bareness, impotence, drought, epidemics, war, diseases and many others. They also believe that, the gods avenge their anger on whoever omits or commits any

flaw for which their presence forbids. Hence the belief system and cultural practice holds all the precepts of the laws of the gods to a very high esteem. This is also supported by [9], [10] and [3]. According to [16], in most traditional communities, there exist variety of traditional leaders, specialist and spirit mediums. Their spiritual role in stopping and making rains can impact negatively or positively on the available natural resources. An impending calamity of a community (the failure of a particular plant/crop in a particular season) could be foreseen by a soothsayer/diviner and the necessary action taken. Hence a diviner in consultation with the rain maker can avert negative situations through sacrifices. Therefore, in natural resource use and management the relevance of rainmakers, Tindaanas, earth shrines and other spiritual mediums cannot be underestimated.

4. Discussions

4.1. The Role of Traditional African Religion and Belief Systems in Natural Resource Management

From the research conducted, it is evident that although Christians have wrong impression about African traditional belief system, traditional African belief systems have strong elements of conservation techniques that can be adopted for effective conservation of natural resources and the protection of the environment. This is due to the fact that the belief system ascribes certain powers to some parts of the environment as the abodes of the gods, this place is strictly prohibited from exploitation by any one, in this regard, resources are left untouched and preserved in its natural state. According to [20], the management of these areas is central to community's spiritual sustenance.

In almost every traditional African setting or community, each community has what they revere or hold sacred as the ancestral home of their forefathers, or there is a very important symbolic reason attached to such objects in the course of their existence, every community in the Upper East Region has a sacred grove, sacred pond, forbidden animals and earth shrines. Where some part of the environment is delineated for the worship of the gods [10].

Afessikan is a sacred pond harvested by the Booyadoma once every year. Mudfish and frogs are harvested and shared by everyone at the time of the harvest. Any other species is owned by the Tindaana (chief priest) and the clan heads. The Tindaanas are the spiritual head of the kingdom. It is a taboo for anyone to go fishing in the pond on his own; it is completely forbidden and very detrimental to any trespasser. Within the pond there were trees like Shea tree (*Vitellaria paradoxa*), White acacia (*Faidherbia albida*), Desert date (*Balanites aegyptiaca*), Ebony (*Dioppros mespiliformia*), African birch (*Anogeissus Leicarpus*) and many other tree species were found in the earth shrine (Tingaane and Tinkogre) areas.

4.2. Why Most Communities Revere Their Natural Resources so much

Transcribed interview

"The environment is the Primary source of life (spiritual) ancestors and other gods live within them and communicate to us through them with the help of soothsayers and earth priests who are their custodians, for good health, high crop yields and peaceful co-existence of the whole eco-system. The earth, that is trees, rocks, water bodies, and all the things that it holds, is considered "life" of the God Almighty. The earth is the mother and God the father. Livelihood - Production of goods and life and all the basic needs food, shelter and health come from the natural resources hence the need to protect and conserve them for future generations. Certain areas with trees, rocks, wildlife and water bodies with its aquatic life are considered sacred and needs to be protected. Food - fruits, nuts, leaves, Shelter- wood, earth, stones, water etc Health - roots, leaves, bark of trees and grasses are sources of herbal medicine". Source: An elder, Dalga community

This is confirmed by [4; 18]. Their philosophy of life is aimed at the perpetuation of all objects, both animate and inanimate. Their collective environmental wisdom and ethics are expressed through religious beliefs and a range of sacred and cultural practices. For instance, the belief that the earth has a power of its own which is helpful if propitiated and harmful if neglected, is a powerful moral sanction against the wanton destruction of natural resources in Northern Ghana [4]. Similarly, the belief that lesser gods or spirits dwell in such natural resources as trees, hills, rocks and certain animals is tantamount to attaching intrinsic value to all objects. Contrary, traditional institutions are rarely involved in plans and policies of development that are formulated most importantly in natural resource management [18].

4.3. How the Traditional Belief System Helped in Conserving Natural Resources

It was discovered from the research conducted that most traditional belief systems and practices are consistent with current conservation practices. The ascription of supernatural powers to portions of the environment and protecting such places through taboos helps in conserving the environment and protecting natural resources.

- The demarcation of portions of the environment as home of the ancestral spirits (sacred groves, ponds, earth shrines) encourages the conservation of resources
- The forbidding of fishing and protection of aquatic species from sacred ponds encourages conservation of water/aquatic resources
- The forbidding from consumption of some species of animals also encourages conservation for example totemic animals and objects
- Lastly, resources users were part of / close to resources managers, hence effective participation of all

citizens in resource management.

Transcribed Interview

We respected our traditional beliefs. When our grandfathers were alive Christianity was not practiced. People were not allowed to do anything (cut a tree for firewood) in the earth shrine area. But of late because of Christianity and the disrespect they have for traditional beliefs, some people went and harvested/hunt honey in the earth shrine area using fire which eventually burnt two trees namely- "Gia" (ebony), botanical name *Diopgros Mespiliformia*. The bark of this tree is used for the treatment of dirrhoea and toothache. It is also used by lactating mothers to purify their breast milk. The other tree is "Yaa", the sap of this tree is used for the treatment of rheumatism and it also strengthens and activates the strings of a violin. The bark of the tree is used to bath women immediately after delivery to prevent infections. The ancestral gods were not happy and they punished the whole village by allowing drought to destroy all our crops. Each clan contributed a fowl, flour and a 'linka' of pito to the Tindaana and sacrifices were made (pacification). The gods then reverted their anger with a heavy rain the subsequent years. As at now, there is no fish in the pond except frogs because people constantly harvested the fish which was not the case when Christianity was not practiced (in the olden days). Source: A clan head, Kunkua

According to [1], in northern Ghana, the use of natural resources, both plants and animals was done with respect and guided by conservation requirements. The thrust of management, utilization, and conservation of natural resource rests with the traditional institutions. Under the tribal law, land and the related resources are checked or held in trust by these institutions (Chiefs, Tindaanas, clan heads, sectional heads, household heads, women leaders (magazias), and other community leaders. This is in tandem with the research findings.

Transcribed Interview

'when we were children, our fathers forbade us from fishing from the Affessikan(Sacred pond) or even cutting a tree or picking fire wood from the'Tingaane'' (shrine). Whenever there was drought, the women will come out, make/prepare flour, singing and dancing, the Tindaana will come and make some sacrifice to the Tinkogre and Tingaane (Earth god and earth shrine). We will not reach our homes and rain will start'.

There exist female functionaries who perform roles as spirit mediums, rain makers and soothsayers. Reports showed that, women rainmakers and soothsayers in the Upper East Region performed various rituals to cause rain to fall when drought occurred in the region. In the case of the rain makers, they are engaged in the art of making and stopping rains [16]. This is consistent with the research findings. Source, An elder, Anafobisi community

4.4. Why People No Longer Protect the Environment and its Bountiful Resources

Transcribed Interview

Orthodox religions (Christianity and Islam) have declared traditional religion as evil and satanic. That has no link with God the Father Almighty and a retraining force for development especially the present generation of humankind. Modern education has liberated us spiritually. High population growth leading to pressure on ownership of land. Commercial agriculture as against sustenance agriculture hybrid seeds and plants introduced, Mechanized farming with chemical fertilizers, herbicides, weedicides, insecticides etc. There is no enough motivation even though government policies on environmental management is good, Top-down approach hence the need for survival in a power driven economy.

In one interview, a chief responded that, 'because of Christianity, everybody now goes to church and says that the ancestral belief is evil, God gave us resources to satisfy our needs, so why should the Chief or Tindaana put restrictions on the use of resources. They therefore exploit these resources to satisfy their needs, where we used not to fish, people fish now, where we used not to cut trees or even used fire wood from the trees, people now cut trees from these places'. Source: The chief priest (Tindaana),Yorogo community

These are all indications that, Christianity has seriously eroded the rich cultural and belief system of the indigenous African people. Places and things formerly held sacred have been destroyed and the ascription of supernatural powers to parts of the environment and objects of worship have been removed.

The table (1) below shows some indigenous tree species and their uses which have depleted in the Earth Shrine (Tingaane)

LOCAL NAMES	ENGLISH NAMES	BOTANICAL NAMES	USES
Ta'inga	Shea tree	Vitellaria paradoxa	-fruits eaten ripe -butter extracted from the nuts is used as edible oil -used for treatment of stomach pains, skin diseases and chronic sores -the bark is used for the treatment of asthma and toothache -the husk of the fruit is used as dye and as an agent for the preservation of buildings -the bark is used for the treatment of anthrax and for deworming asthma
Dua	Dawadawa	Parkia biglobosa	-asthma is treated by the use of "wanwanle" -the husk is used to induce abortion while its year old husk on the tree is used to promote menopause in women -it is the only tree whose rafter is used to serve as stretcher to carry dead bodies

LOCAL NAMES	ENGLISH NAMES	BOTANICAL NAMES	USES
A-rika	Black Berries	Vitex micronata	outside the community -fruits are eaten ripe -seeds are used for the treatment of ring worm -it is used as an antidote for scorpion and snake bites -the sap is used as an ink for writing of Arabic by Muslims. -fruits are eaten ripe
Gia	Ebony	Dioppros mespiliformia	-it is used for manure, rafters and fuel wood -the bark is used for the treatment of diarrhoea and toothache -the bark is also used by lactating mothers to purify their breast milk -fruits may be used to process wine -the bark is used to bath women immediately after giving birth to prevent infections
Yaa	-	-	-the sap is used for the treatment of rheumatism -it is also used to strengthen and activate the strings of a violin -it gives fuel wood and rafters
Kalika	-	Detarium microcarpum	-the roots and bark are used for the treatment of paralysis of any part of the body -the stem is used for carving drums -it is also used for rafters and fuel wood
Assorted grass species: Vogtantima			Treatment of cold, dizziness
Kolikatinma		Vertiverer nagretania	Straw Used for weaving baskets and hats
Saahi		Vertiverer zizaniod	Used as brooms for sweeping

Community members are aware of the significant roles the traditional belief system played in the conservation of environmental resources, an earth priest had this to say

Transcribed interview

“Western civilization and religion is the cause of the environmental problems we are having today, humans kill animals anyhow and eat all animals without tabooing any, environmental resources are used without respect, it is unfortunate that laws and bye-laws are not observed as compared to the olden days when Christianity was not practiced”(pre colonial days). Source; A traditional earth priest, Yogbeesi community

From these discussions, Traditional belief system has contributed a major role in the conservation and management of environmental resources; hence there is the need to revive some of the belief systems and cultural practices of indigenous communities where they were once practiced. The findings of this research is in tandem with [14, 8, 10] who observed that because of the belief system and rich cultural practices of traditional African societies, and the ascription of some parts of the environment as home of ancestral spirits in the form of shrines, temple and groves, several category of places exist often containing objects like trees of different species which mostly serve their medicinal needs, pond, stones ascribed as abodes of the ancestral gods [7, 31], traditionally, some species of plants which are mostly medicinal and animals within such places of worship were protected, these practices were encouraging conservation and management of environmental resources(see [12, 22, 28, 29, 31, 33]. The findings is also confirmed by [1], the utilization, conservation and management of natural resources (plants and animals) was done with respect and guided by conservation requirements of never using more than what is required, various indigenous beliefs and practices

contributed to indigenous natural resource management systems. The traditional institutions played a key role in ensuring that those who break the rules are punished. These collective actions in natural resource management were expressed through religious believes, moral sanctions and a range of sacred and cultural practices. The resilience of these beliefs and practices stood the test of time in natural resource management through the use of taboos, totems, traditional protected areas, moral sanctions and rules and regulations. [1] Therefore, I agree with [23] argument that traditional institutions can still serve as points of entry in the search for local options and broad- based approaches to the management of natural resources.

5. Conclusion

Human population in recent times sees resources as their rightful property where they decide to use it carelessly and without respect and in an unsustainable manner since environmental resources are common pool resources with no well defined property rights.

In the olden days, people had respect for the environment and for purpose of natural resources conservation and management, community leaders (Tindaanas, chiefs, clan and sectional heads) ruled, designed policies and execute them to the benefit of the entire community, it was sacrilegious for one to disobey rules, but this is not the case in contemporary societies.

The indigenous beliefs, knowledge and taboos contributed immensely and effectively to the reduction in unsustainable agricultural practice like bush burning, deforestation, farming along water bodies, over grazing and many more. There were rules to protect trees, animals, streams, ponds and rivers as well as governing council who are charged with the responsibilities of managing natural

resources. A number of sacred groves and shrines have been destroyed as a result of the infiltration of Christianity, urban and infrastructural development into rural hinterlands. The forgoing of the ascription of super natural powers to some objects as practiced in traditional belief system has lost its efficacy and usefulness, the findings of [3], confirms this position, which was previously discovered by [34].

In sum, traditional belief system practices belief in nature, holds nature as a partner in its struggle for existence. Hence the traditional knowledge sees man and nature as inseparable and closely knit together. As such, African traditional cultural practices and belief systems are a precept of nature earthsmanship [10].

Recommendation

- There is need for the re-visitation of the traditional belief systems and cultural practices that promote the management, preservation and conservation of natural resources for the sustainable development of the Upper East Region and the nation at large.
- Religious leaders for that matter, the pastors, priest and Imams should educate their congregation and encourage them to conserve the environment and therefore not exploiting the environment.
- Environmental managers (EPA, Forestry Commission), and modern political institutions and communities should encourage the practice of the belief systems that enhances the conservation and management of natural resources, this will enable communities where resources are found to participate in the management of the environment.
- Government and other institutions and stakeholders interested in conservation should motivate communities which are still practicing belief systems that conserve the environment by giving such communities incentive packages in the form of developmental projects.
- The capacity of all natural resource management institutions (more especially traditional institutions) needs to be strengthened and/or developed by means of short-term and long-term programmes. Formal institutional structures for natural resources management are inadequate and more so, do not adequately reflect the aspirations of the local people. Building communities' confidence in their own indigenous knowledge in NRM through capacity building will enable them understand and engage with local governance structures and institutions and service providers on how to access information, resources and services they require. This would also bring about joint responsibilities in the management of natural resources, joint benefit sharing as well as joint visits and exchanges to erode mistrust and build confidence in both formal and informal institutions in natural resources management

- Traditional authorities have over the years managed natural resources through the use of religious believes, moral sanctions and a range of sacred and cultural practices. These local management systems which evolved over time have proved more effective and sustainable than other forms of management. Building policies on these existing management systems would ensure a holistic and sustainable natural resources management. The traditional use of the resource is based on traditional values, believes, norms and practices which constitute the world view of the people. These management practices could be harnessed for policy inclusion at all levels in policy formulation processes. Even though, there have been some efforts by the Ministry of Lands and Forestry to initiate the Wildfire Policy from the bottom-up, thus involving traditional authorities and communities in the policy formulation processes. On the contrary, traditional authorities are least consulted at the planning stages of the policy formulation. In the light of this, I recommend that, proper consultation and integration of indigenous management systems and practices into formal management systems be made to ensure sustainable renewable natural resource management, utilization and hence, check over exploitation.
- A great majority of the traditional governance structures in the region did not have women occupying positions such as chiefs, Tindaanas, council of elders, clan heads etc as a result, their voices in decision making process is greatly constrained. The district assembly may consider negotiating with traditional authorities (TAs) on ways of expanding women's economic roles for increased productivity by exploring non-traditional spaces for generating interest in and invoking discussions on the socio-economic benefits of women's expanded access to natural resources to the family and community. Such fora may include palace visits, meetings and informal interactions, during which time the TAs can be lobbied and involved in designing strategies to support women's activities in the district. The interactions will need to occur at individual, role and collective levels and include both male and female authorities in separate and mixed sessions. Chiefs, spiritual leaders, elders, clan/family heads, *magazia* and head women could be involved in such negotiations.

References

- [1] Abu, A. and Millar, D. (2004), Land, Natural Resource and Spirituality; Policy Implication on Rural Livelihood in Northern Ghana, CECIK, Bolgatanga, Ghana
- [2] Adam, W.M and Anderson, W, (1988), Irrigation before Development: Indigenous and Induced Change in Agricultural Water Management in East Africa. African Affairs, vol. 87

- [3] Appiah-Opoku, S. (2007). Indigenous beliefs and environmental stewardship: a rural Ghana experience. *Journal of Cultural Geography*, 22, 79-88. <http://dx.doi.org/10.1080/08873630709478212>
- [4] Awedora, A.K. (2002), Culture and Development in African with Special reference to Ghana. Institute of African Studies, University of Ghana, Lagon, Accra
- [5] Commons, J.R. (1970), *The Economics of Collective Action*, Madison: University of Wisconsin Press.
- [6] Bonye Z. Samuel. (2008), *Harnessing Synergies: The Role of Traditional Institutions in Natural Resource Management in the Tallensi/Nabdram District, Upper East Region*. Master thesis.
- [7] Dorm-Adzobu, C., Ampadu-Agyei, O., & Veit, P. G. (1991). Religious Beliefs and Environmental Protection: The Malshegu Sacred Grove in Northern Ghana. WRI Washington, DC, USA and Acts Press, Africa Centre for Technology Studies, Kenya.
- [8] Dwomoh, D. (1990). Forest Conservation: The contribution of sacred groves (A study of Sekyere West District, Ashanti Region). B.A (Hons) Dissertation, Geography Dept., Univ. of Ghana, Legon.
- [9] Eneji, C. V. O., Gubo, Q., Jian, X., Oden, S. N., & Okpiliya, F. I. (2009b). A Review of the Dynamics of Forest Resources Valuation and Community Livelihood: Issues, Arguments and concerns. *Journal of Agriculture, biotechnology and ecology, China*, 2(2), 210-231.
- [10] Eneji C. V. O., Ntamu G. U., Unwanade C. C., Godwin A. B, Basse J. E., Willaims J. J & Joseph Ignatius. (2012) *Traditional African Religion in Natural Resources Conservation and Management in Cross River State, Nigeria, Environment and Natural Resources Research; Vol. 2, No. 4; 2012 ISSN 1927-0488 E-ISSN 1927-0496 Published by Canadian Center of Science and Education*
- [11] Fairhead, J. and Leach, M. (2004), *False Forest History, Complicit Social Analysis: Rethinking Some West African Environmental Narratives*. Environment, Development and Rural Livelihoods. Earthscan, UK and USA.
- [12] Fargey, P. J. (1991). Assessment of the conservation status of the Boabeng Fiema Monkey Sanctuary. Report submitted to the Flora and Fauna Preservation Society. p.73.
- [13] Goodin, R. E. (1996a), *Designing Institutions in East European transitions: The Theory of Institutional Design*. Cambridge University Press.
- [14] Gyamfi-Fenteng, L. J., & Abbiw, D. (1992). *Management Strategy for Sacred Groves in Ghana Report prepared for the World Bank and the Environmental Protection Council*.
- [15] Hardin, G. (1968), *Tragedy of the Commons Science*, Volume 162.
- [16] Haverkort, B. and Millar, D. (2004), *Alternative Logic for Development Intervention CECIK, Bolga, Ghana*.
- [17] Kamla-Raj (2006). *Indigenous Knowledge and Biodiversity Conservation and Management in Ghana*. Laarbeeklaan 103B-1090 Jette, Belgium
- [18] Marcessen, S. H. (ed) (1994), *Past Practices, Present Problems, Future Possibilities; Indigenous Natural Resource management in Pastoral Areas of Tanzania*, IDS, Denmark.
- [19] Marsh, R. (2002), *Working with Local Institutions to Support Sustainable Livelihoods*. University of California, Berkeley, USA.
- [20] Millar, D. (2004a), *Shrines and Groves: Bio-cultural Diversity and Potential Environment*
- [21] Millar, D. (2004b), *Traditional African World Views from a Cosmvision Perspective*.
- [22] Mkenda, B. (2010). *Environmental Conservation anchored in African cultural heritage*, Ecology New People Magazine.
- [23] North, D.C. (1990), *Institutions, Institutional Change, and Economic Performance*. Cambridge University Press.
- [24] Ostrom, E. (1990), *The rudiments of a theory of origins, survival and performance of common property institutions*
- [25] Pillien, J. and Walpole S. (2001), *Moving from open access to extraction to new participatory levels of accountable management*. Malampaya Sound, Palawan, Philippines.
- [26] Runge, C.F. (1996), *Institutions and the free rider: The assurance problem in collective action*, *Journal of Politics*, Vol. 46.
- [27] Shastri, C. M., Bhat, D. M., Nagaraja, B. C., Murali, K. S., & Ravindranath, N. H. (2002). *Tree species diversity in a village ecosystem in Uttara Kannada district in Western Ghats, Karnataka*. *Current Science*, 82, 1080-1084.
- [28] Tunon, H., & Bruhn, J. G. (1994). *Drugs in ancient texts*. *Nature*, 369, 702. <http://dx.doi.org/10.1038/369702a0>
- [29] Tupper, M. (2002). *Marine reserves and fisheries management*. *Science*, 295, 1233.
- [30] <http://dx.doi.org/10.1126/science.295.5558.1233b>.
- [31] Udgaonkar, S. (2002). *The recording of traditional knowledge: Will it prevent "bio-piracy?"* *Current Science*, 82, 413-419.
- [32] UDS/CARE, (2004), *The Chief, the Forester and Fireman; Proceeding on Bushfire Workshop*, GILLBT, Tamale, Ghana
- [33] Utkarsh, G., Gadgil, M., & Rao, P. R. S. (1999). *Intellectual property rights on biological resources: Benefiting from biodiversity and people's knowledge*. *Current Science*, 77, 1418-1425.
- [34] *World Conservation Union. (1994). Guidelines for Protected Area Management Categories (IUCN, Gland, Switzerland, and Cambridge)*.