

OGUAA JOURNAL OF SOCIAL SCIENCES (JOSS)

Volume 6 No. 1 May, 2011



***A PUBLICATION BY
FACULTY OF SOCIAL SCIENCES
UNIVERSITY OF CAPE COAST
CAPE COAST, GHANA***

Beyond Science: Traditional Concept of Preservation and Biodiversity in Ghana: Focus on Two Traditional Areas in Central Region

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Abstract

Since time immemorial, indigenous knowledge systems of different geographical environments across the globe have been used to protect and conserve groves. Presently, while some of these edifices are being preserved for various reasons, others are facing extinction due to diverse challenges. The study, underpinned by dimensions of indigenous knowledge and indigenous ecological knowledge frameworks within the paradigm of endogenous development, explores the beliefs and practices that have been used to preserve groves in three selected communities in the Central Region of Ghana. It also explores some of the benefits associated with the groves, and focuses on the intangible benefits to these communities. In-depth interviews and focus group discussions, as well as community institutional resource mapping and observation were used to collect data from chiefs, priests and elders. The results show that groves were owned and managed by either clans or communities, or both. Traditional sciences have been used to preserve these groves. Groves preserve community histories, ancestral and local knowledge. However, the breakdown of traditional values threatens the existence and preservation of such heritage.

Keywords: Indigenous Knowledge, sacred groves, biodiversity preservation, traditional, endogenous development, sustainability.

Introduction

Dating back to antiquity, social organisations have one way or the other preserved their natural environments for various purposes. One of such natural environments that have been preserved mainly for religious and socio-cultural purposes is the grove (Asare, 2002; Nakashima et al, 2000). The immense recognition for preservation of groves can be traced to the worldviews (or cosmovision) of and benefits to a society based on that society's indigenous knowledge. While some serve as abodes of gods and ancestors, others provide platforms to solicit spiritual, social and economic fortunes (Esia-Donkoh, 2007).

Groves (also known as sacred groves) constitute patches of natural vegetation that have been preserved with local knowledge for cultural, religious and socio-economic purposes. Jarayajan (2004) defines groves as isolated patches of forest comprising trees and other forms of life and geographical features, created and protected by cultural communities or clans with the worldview that such patches of vegetation in a relatively undisturbed state are necessary for expressing one's relation to the divine and/or nature.

Groves were created mainly to serve as abodes of deities such as the ancestors and the gods. The ancestors are considered as the real owners of environmental resources and therefore are consulted on issues that touch on the environment. The gods, like the ancestors, are deities primarily serving as intermediaries between humans and God. In order to preserve their spiritual significance and sanctity, such vegetations were created and preserved with cultural laws and practices. For instance, taboos and fearful imageries about groves were created in the minds of the people to prevent them from accessing the groves, or any other biological or non-biological resources in them without permission. In times of need, however, herbs and dead trees could be collected from the groves, but on permission by the priest or local authorities.

Besides, such heritage also serves as refuge for biodiversity (Subramanian, 2010). For example, some of these vegetations have varieties of flora and fauna species, some of which are regarded as totems (of clans and families) or sacred (for rituals and medication) species (Asare, 2002). The above benefits associated with groves have contributed to biological-cultural (biocultural) diversity (Valderrama and Arico, 2010) as well as judicious ecosystem utilization (Subramanian, 2010).

It is of such importance that at international fora, world governing bodies such as Convention on Biological Diversity (CBD) and the Convention on the Protection of Intangible Cultural Heritage under the United Nations Educational, Scientific and Cultural Organisation (UNESCO) have recognized the significance of traditional knowledge in their respective policy frameworks. For example, Article 8j of CBD indicates that:

...subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices' (United Nations, 1992, p6)

Article 8 of CBD also fulfils the objectives of most environment-related ministries and departments at the local level within the contexts of conservation of biological diversity and sustainable use of its components. The decentralization policy of Ghana requires planning, implementation,

monitoring and evaluation at the local level, where, to a large extent, the people rely on their traditional knowledge for livelihood as well as the sustainability of their natural environments. For instance, Dickson and Benneh (2004) record that indigenous knowledge has contributed to the conservation of Ghana's forest cover through the establishment of groves.

This does not, however, suggest that groves and the knowledge that sustains the survival of such heritage are not at risk. Sacred groves, like any other natural environmental resource, are being threatened. Reliance on western science to guide formal development, foreign religious beliefs and urbanization (Appiah-Opoku, 2007) constitute a challenge that continues to shake the foundation upon which groves were created. It is therefore imperative to develop appropriate pathways to protect and preserve these edifices.

In most cases, value is placed on a grove owing to its structural characteristics such as density, geographical coverage as well as variety of flora and fauna species that inhabit it. As indicated by Jayarajan (2004), the rationale for the establishment of groves includes the perceptions of intangible benefits associated with these resources. However, according to him, such information about groves is limited. This study, therefore, guided by the dimensions of indigenous knowledge (COMPAS/ETC, 2006) and indigenous ecological knowledge (Woodley, 2004) frameworks, within the paradigm of endogenous development, explores some of the beliefs and practices that have been used to conserve a selection of groves in three communities in the Central Region of Ghana. It also explores the benefits associated with the groves, and focuses on some of the intangible benefits.

Theoretical, Empirical Conceptual Issues

Since 1972, the international community has made conscious and consistent efforts at addressing global environmental changes including deforestation. For example, in *Our Common Future* (World Conference on

Environment and Development, 1987), the Rio Summit in 1992 and the Johannesburg Summit in 2002, calls were made to address the depletion and near extinction of environmental resources through biodiversity protection, conservation and sustainability with the use of appropriate technology and knowledge including the use of indigenous knowledge.

Traditional societies have known species protection and biodiversity preservation even before the call of these international conferences (Kendie and Ghartey, 2000). For example, the Uluguru Mountain in Eastern Tanzania (Kendie and Ghartey, 2000), the Malshegu Sacred Grove in Bongo (Asare, 2002) and the Monkey Sanctuary at Boabeng and Fiema (Appiah-Opoku, 2007) all in Ghana, show how traditional societies have preserved some parts of their forests as groves. It must, however, be emphasised that groves are not necessarily forests. Groves do not need to possess all the characteristics of a forest (Dickson and Benneh, 2004). In fact, a patch of vegetation becomes a grove because of its cultural and spiritual connotations, but not the geographical size, nor the array of various sizes of trees and their forestry features. Notwithstanding this, a number of these edifices are either primary or secondary forests (Dickson and Benneh, 2004).

In Ghana, groves are commonly created and managed by clans. Among the Akans and many other ethnic groups in the country, it is common for every clan to have its own grove for the burial of its elders, and/or abode of gods and totems. Anecdotal evidence suggests that the number of groves in a settlement can be determined by the number of clans in the settlement. Thus, a settlement with the full number (seven or more) of clans (Braffi, 1992), is likely to have such a number of groves. In other instances, one can find a grove established and managed by the entire community. Examples of such groves include Malshegu (Asare, 2002) and Monkey Sanctuary at Boabeng and Fiema (Appiah-Opoku, 2007).

Traditional societies use their cosmovision, or traditional sciences, embedded in their indigenous knowledge, which is based on the interrelationships and interdependence of the spiritual, social, and

economic dimensions (Figure 1.) to protect their groves. Ocholla (2007) defines indigenous knowledge as a dynamic heritage of the sum total of knowledge, skills and attitudes that belongs to, and practiced by a community over generations, and expressed in the form of actions, objects and language for communal use. Thus, indigenous knowledge comprises three main interrelated dimensions such as beliefs and rituals (spiritual dimension), community development, communication and entertainment (social dimension) as well as agricultural technology, architecture and blacksmithing (economic dimension). Most importantly, some of the spirits such as gods need the natural environment as their abodes. Hence, reverence of these spirits leads to the preservation of rocks, rivers, and other vegetation cover.

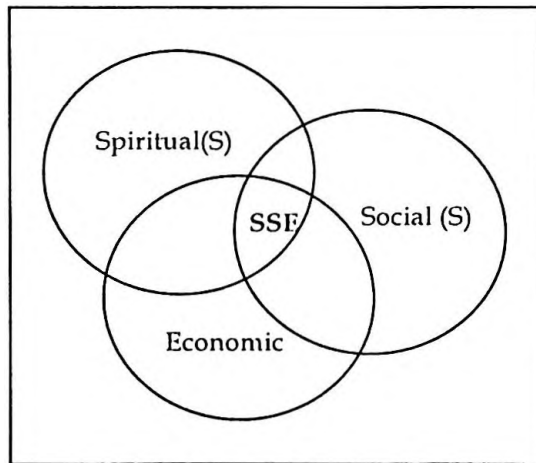


Figure 1: Dimensions of indigenous knowledge.
Source: Based on COMPAS/ETC (2006).

The cosmivision of traditional societies encompass the three dimensions namely the spiritual, social, and economic dimensions as shown in Figure 1. These dimensions are interrelated and interdependent to enhance a perfect harmony for sustainability of resource-use. This

interrelationship indicated in Figure 1 as SSE (Spiritual, Social and Economic) has contributed immensely to the preservation of groves in traditional societies. For instance, groves serve as abodes of ancestors and gods (spirit dimension), a refuge for various plant species for medicinal use (social dimension), and avenues to collect dead wood for cooking and heating (economic dimension).

This relationship, according to Nakashima et al (2000), explains the complex but holistic approach to sciences (not science), and ecologically resourcefulness of indigenous knowledge. In contribution, Woodley's (2004) Indigenous Ecological Knowledge (IEK) framework (Figure 2) explains how within an ecosystem, a group perceives the environment leading to biodiversity preservation.

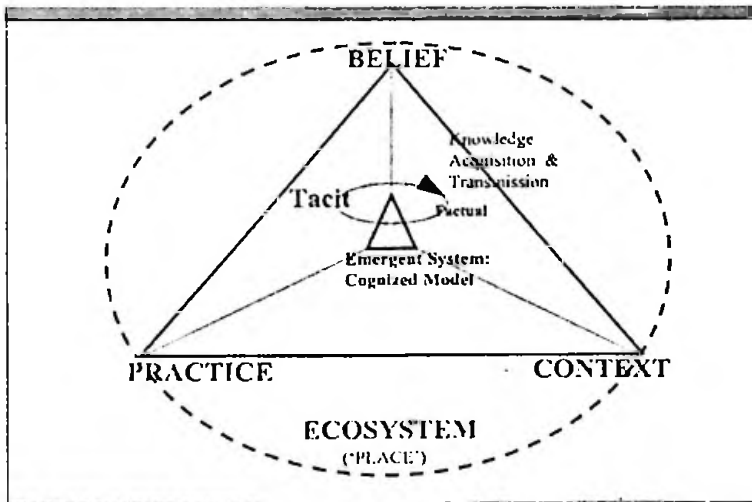


Figure 2: Indigenous Ecological Knowledge (IEK) Framework

Source: Woodley (2004)

Woodley's framework comprises three main constructs, namely, context, practice and belief. By context, knowledge is acquired through history, demographic factors and biophysical features of an area mainly

through the oral mode. Physical interaction and experience constitute knowledge by practice while belief depicts the influence of spirituality, values and mores on actions of people within the ecosystem.

Within a system, there is a metaphorical mental model which conceptualizes the environment from a contextual perspective and provides reasons for actions in daily life. Such mental images are not created to conform to the reality of the outsider, but rather, it represents how people relate with nature within the ecosystem than abstract understanding. The framework also incorporates spatial and time dimensions. The spatial dimension is holistic and place-specific (or place-based). It signifies the situatedness within the socio-cultural, historical and biophysical components of a place. The time scale on the other hand is the change that may occur in any of the elements within the structure and its influence on the emergent systems (see also Boulding, 1956). The time scale is shown in the diagram as the cycle of knowledge acquisition and transfer (the cycle in the center of the triangle). The framework also explains that there are both factual (explicit) knowledge and tacit (implicit) knowledge within the mental or cognized model. The application of the IEK framework to grove preservation is appropriate because it provides a guide to the historical and place-specificity of groves in relation to natural and spiritual sciences of traditional knowledge in a 'homogenous' community such as a clan.

It must be emphasised that indigenous knowledge and contemporary dynamics in societies, from homogenous entities to heterogeneous ones, call for a participatory paradigm that takes into account local and external support. The endogenous development (ED) paradigm is one of such participatory frameworks. Kendie et al. (2004), cited in Kendie and Guri [2010], define ED as 'development from within, based mainly, though not exclusively, on locally available resources, values, institutions and knowledge' (pp 55).

According to Hooft (2006), a key criterion for endogenous development is that it is controlled by local actors. This approach to development needs to be channeled through traditional structures and

authorities that are very known, respected and readily available for accountability and responsibility (Millar, 1999). Thus, indigenous knowledge and indigenous institutions, such as clans, are vital in grove preservation. Endogenous development does not, however, imply that all local values and beliefs should be embraced uncritically, and all external development options rejected (Hooft, 2006).

Data Sources, Sampling Procedures and Sample Size

The study made use of primary data in addition to relevant literature from books, journals, scholarly magazines and internet sources. Primary data were obtained from key informants such as priests, chiefs as well as elders and caretakers from the respective study sites. This was done to assess the preservation practices used, their associated benefits and challenges faced.

The study focused on groves in Mankessim and Eshirow in the Mfantseman Municipality, as well as Breman Asikuma in the Asikuma-Odoben-Brakwa District (Map 1). There are eight groves located in Mankessim. Seven are owned by different clans (see Braffi, 1992), and one is owned by the entire community as an ancestral abode. In Eshirow, two groves were identified. The Anona Clan owns one of the groves (as an abode of ancestors and a god), while the other is owned by other clans and individuals who do not belong to the Anona Clan. There are three groves in Breman Asikuma. These are owned by the Royal Asona Clan (for the burial of royals), the Lower Asona Clan (as an abode of a god) and Assi Asona Clan (as an abode of a god).

Three sacred groves were purposively selected from these sites. The selection was influenced by a number of factors. Firstly, the study considered ownership and management of the groves. It considered those owned by the clan and the community. Secondly, it took into account the extent of threats to the grove and how the threats are being managed. Lastly, the primary purpose for the creation of the groves (for instance, as

an ancestral grove or an abode of a god) was considered for selection. In all, two groves were selected from Mankessim and Eshirow in the Mankessim Traditional Area, and one from Breman Asikuma in the Breman Traditional Area (Table 1).

Table 1: Sampled Groves in Selected Communities

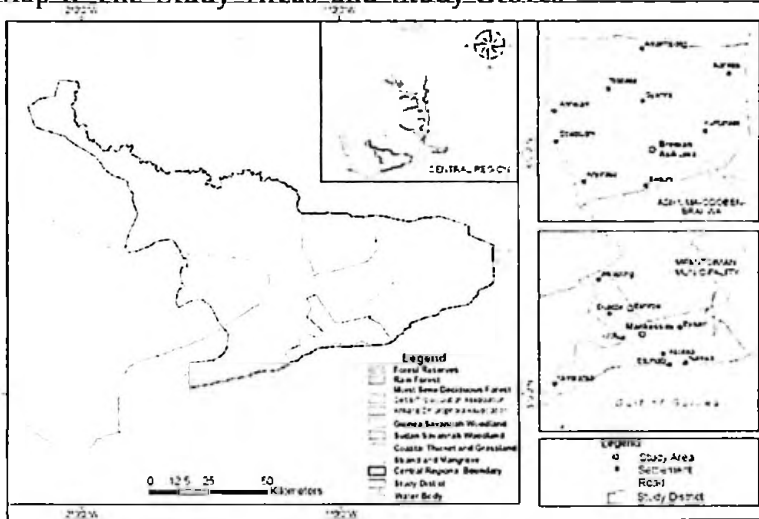
Name of Grove	Name of Community	Traditional Area	Purpose of Establishment	Ownership and management	Description of Grove
Nananom	Mankessim	Mankessim	Ancestral grove	Community	Severely threatened
Nsofa	Eshirow	Mankessim	Abode of god and ancestral grove	Clan	Preserved
Obbo Sonsoshen	Breman Asikuma	Breman	Abode of god	Clan- community	Threatened

Source: Fieldwork (2009)

In-depth interviews (IDI) and focus group discussions (FGDs) were conducted at each study site. In all, one chief, one caretaker/priest and two elders constituted respondents for the IDI at each study site. Six to eight other opinion leaders (both males and females) constituted members of the FGDs. At least two members of the FGDs at each study site were females. Observation was also conducted with the aid of a digital camera at the grove sites to complement other tools and methods that were used to collect the data.

Another method that was employed was community institutions and resources mapping (CIRM), a methodological tool developed for local level development by the Centre for Indigenous Knowledge for Organisational Development (CIKOD) (see Guri and Laate, 2009).

Map 1: The Study Areas and Study Groves



Source: Geographic Information Systems Unit, Department of Geography and Regional Planning, University of Cape Coast (2010)

The purpose was to allow respondents to describe the features of their groves over a period of time by drawing the groves and describing verbally, the changes that have taken place over time. The method followed the following steps:

1. Two groups (comprising opinion leaders) were formed for FDGs on the issues. There were three or four members in a group with, at least, one female in each group.
2. Each group was provided with the needed and appropriate drawing materials.
3. Participants then described the groves as follows:
 - a. The features of the grove ten years ago,
 - b. The features of the grove currently, and
 - c. The features of the grove in the next ten years.
4. The drawings and discussions for the groups were compared to ensure clarity, consistency and consensus.

Study Sites

The study sites were Nananom, Nsofa and Obo Sonsonhyen. Nananom and Nsofa are located in Mankessim and Eshiwrow respectively in the Mankessim Traditional Area in Central Region. Reports from early European visitors and existence of some patches of forests within the traditional area suggest that the locale was once forested, but has been modified by human activities (Dickson and Benneh, 2004; Adu-Boahen, 1966). The groves lie within the dry equatorial climate with annual rainfall between 74 centimetres and 89 centimetres and monthly average temperature of 27°C. The double maxima rainfall which characterises the area supports grassland and coastal scrub.

Nananom was formerly a dense ancestral grove with variety of flora and fauna species, some of which were considered as sacred. Some of the flora species included trees of different sizes and types (e.g. odum, wawa, sapele, etc.), herbs, shrubs, creepers and climbers as well as flowers. Other variety of animal species were insects (e.g. grasshoppers, bees, butterflies, ants, etc.), birds (e.g. parrots, pigeons, owls, eagles, etc.), reptiles (e.g. snakes, lizards, tortoise, crocodiles, etc.), mammals (e.g. bears, wolves, tigers, lions, etc.), as well as other perceived fearful beings.

There were priests who resided in the grove and interacted with the ancestors on behalf of the general public and also individuals who visited the grove with peculiar needs. The grove, thus, provided spiritual, material and economic supports to the people. For instance, the ancestors were believed to have assisted the community with rains and good harvest, as well as children to those who needed. These features and significance are similar to those of Nsofa. The only difference is that Nsofa has a caretaker who is not resident in the grove.

Obo Sonsonhyen lies within the wet semi-equatorial climate with an annual rainfall between 125cm to 175cm and monthly temperatures between 26°C and 30°C. The grove is located in Breman Asikuma in the Breman Traditional Area, within the Asikuma-Odoben-Brakwa District.

The climatic characteristics of the area and the district support moist-deciduous forest. According to Dickson and Benneh (2004), part of the original moist-deciduous forest has been modified to a secondary forest as a result of expansion in the cocoa cultivation.

Ɔbo Sonsonhyen provides support to the people of Breman Asikuma, and specifically the Mbraa community, as well as other surrounding villages. Notably, it provides security to the vulnerable, such as children, women and strangers. For instance, the god was believed to have assisted children who got missing to locate their families. It is also believed that the god provides security for the people against internal and external physical and spiritual aggressions. Other roles played by the god include ensuring the adherence of good morals by punishing and rewarding culprits and those to good behavior respectively. Ɔbo Sonsonhyen presented itself in many forms. At times, it showed itself as a huge giant with a dog and cowries at the ankles, an old man/woman or a child to perform its duties accordingly.

Results

History and Cosmvision Associated with the Groves

The histories and cosmvision associated with Nananom, Nsofa and Ɔbo Sonsonhyen were mainly ascertained from information provided by the chiefs and other respondents. Although, limited, some information was sourced from other documented literature. It must be indicated that the information from the focus group discussants was largely consistent with those collected from the in-depth interviews.

Nananom

The history indicates that the people of Mankessim, commonly known as the Fantes, trace their ancestry to the indigenes of Techiman in the Brong Ahafo Region. On arrival from Techiman, before the end of the 15th century, the Fantes met the Etsiifo, the indigenous occupants of Mankessim. After series of ethnic conflicts, the Fantes overpowered the

indigenous people and settled in Mankessim. In order to have a grove to bury their elders and revere them as ancestors, *Nananom* was established at Adowagyir near Twafo, all in Mankessim. Some of their ancestors who were revered in the grove were Oburmankoma, Odapagyan and Oson. The name *Nananom* literally means 'chiefs' or 'ancestors'. The earlier European writers referred to it as *Nananom Pɔw* which translates as *Ancestral Grove* (see Adu-Boahen, 1966).

Nananom covered a substantial part of Mankessim. There were priests who resided in the grove. The priests were mandated by the ancestors (who are regarded as powerful beings) to manage the grove. They (priests) ensured that rules and regulations that governed the use of the grove were strictly adhered to. For instance, it was a taboo for anyone to hunt, farm or collect any flora or fauna from the grove. Punishments ranged from fines, ostracization or even death depending on the gravity of the offence. The priests performed periodic rituals, sacrifices and prayers regularly to solicit fortunes for social and economic enterprise, seek forgiveness of sin(s) committed against the ancestors, as well as avert impending calamities and punishment on behalf of individuals and the entire community.

The Fantes used their cosmovision to preserve Nananom. However, the cosmovision was challenged in the 17th century when the colonial authorities introduced Christianity and the conventional court system. While Christianity challenged the beliefs of the people of Mankessim and the environs, the colonial courts overturned some of the judicial decisions held by the traditional authorities (TAs). For instance, a fine imposed by the TAs on a male-hunter who went hunting in Nananom was challenged by the Wesleyan Church, and the decision (imposition of fine) was quashed by the colonial court upon appeal. The colonial court then ruled that all the resources in the grove were a common good. This affected the preservation of Nananom.

Nsofa

Oral history shows that the Anona Clan of Eshirow migrated from

Akyim Ewisa in the Eastern Region to Eshirow, near Mankessim between the 18th and 19th centuries. The indigenous fishermen at Eshirow gave the clan a portion of land to settle as well as farm. The elders of the clan demarcated and preserved part of the land as a grove. The leader of the clan later became the *Odikro* after putting out a fire which destroyed farms and property in the village. This enhanced the preservation of the grove with the use of their cosmovision. The grove was named Nsofa, the name of the clan's god which resides in the grove. Part of Nsofa is also used as a burial ground for elders of the clan, who are revered as ancestors.

The grove has contributed to the preservation of a variety of plant and animal species. At present, it has been selected and demarcated as a Protected Area by the Forestry Commission, in collaboration with the Anona Clan and other international organisations such as the United Nations Development Fund (UNDP) and Global Habitat Project (GHP). The size of the grove now stands at about five hectares from its initial four hectare coverage before the external intervention about two decades ago.

Obo Sonsonshen

Obo Sonsonshen (Obo means stone) is a huge igneous rock (believed to be a god) situated within a forest in a suburb called Mbraa in Breman Asikuma. The people of Mbraa, and specifically, the Asona Clan (now Lower Asona) migrated from Asante Breman in the Ashanti Region to Breman Asikuma in the 18th century, and became the *kyidom* (back-bearers) to the chief and the people of Breman Asikuma. According to the chief and elders of Mbraa, Obo Sonsonshen revealed its status as a god to the Lower Asona Clan when one of the members got possessed by the god.

The clan then began to revere the deity. They preserved the area with beliefs and practices. Annually, as well as in times of emergent need, sacrifices and prayers were offered to the god to seek various forms of solutions to problems of individuals and the clan. There were taboos and other regulations that were instituted to preserve the dignity and sanctity of the grove. For example, it is a taboo to farm, hunt or cut a tree in the

grove. One could only fetch dead trees and herbs for domestic and medical purposes respectively after permission had been sought from the elders. Formerly, there was a priest attached to *Ṣbo Sonsonshen* who served as a mouthpiece for the god and the general public. Presently, the grove, which covers about half a hectare, has a caretaker whose mandate is to ensure that the rules and regulations that were instituted are adhered to.

Previously, the chief, elders and the people of the Lower Asona Clan were the custodians of the grove. At present, *Ṣbo Sonsonhyen* has been adopted by the elders of Breman Asikuma as their principal god. The arrangement was made after the chief god of Breman Asikuma left the community about a century ago because the people could no longer fulfill some of its demands.

The belief that gods and ancestors have a say and play significant roles in the affairs of the living, including the perpetuation of the lineage, formed the basis for their reverence, hence, the preservation of the groves. These deities, according to the worldviews of traditional societies, serve as intermediaries between God and humans. They serve as channels of blessings or punishments to those who adhere to, or ignore their standards.

Preservation of the Groves

Preservation practices were similar to all the three groves studied. Rules were used to regulate their use and preservation. The basic belief was that such areas were sacred and occupied by spirits who are powerful to bless and punish people accordingly. For instance, no one was permitted to do any activity contrary to the set rules. Attacks of wild animals and meeting of fearfully mysterious beings, including dwarfs, were some of the likely encounters an offender was destined to face. These presented the groves as fearful environments as illustrated by one of the chiefs.

When we were young, the forests looked very fearful. We were afraid to go into them even for

firewood. Those who performed rituals in the forests feared to go into it anyhow. [A community chief, 80 years]

Although generally, herbs and dead trees were harvested on specific days, this was only possible after permission is sought from the priest or chief and elders. Who to seek permission from depended on the type of ownership and management system instituted. Three types of ownership and management systems were identified. These are clan ownership and management, community ownership and management, and clan-community ownership and management systems. For instance, Nananom is owned and managed by the community, Nsofa is owned and managed by a clan and Obo Sonsonshen is jointly owned and managed by a clan and the community. However, in the case of Obo Sonsonshen, it is the clan which nominates the caretaker for the grove.

Threats to Preservation of the Groves

There were both general and specific threats. The general threats to the preservation of the groves were introduction of Christianity and western education. All the respondents opined that disregard of beliefs and practices by the church and western science has restricted onward transmission of indigenous biodiversity preservation practices from the older generations to the younger generations. For instance, on the effect of western education on grove preservation, the respondents were of the view that the system is not the problem, but the content of the system. They explained that education must be context-essential rather than abstract thinking. Thus, to them, the formal school system must teach the knowledge of the community within which the school was situated, in addition to other relevant knowledge systems. If this is well-structured, there would not be knowledge conflict but rather knowledge sharing.

The specific threats related to Nananom and Obo Sonsonhyen were counter-ruling by colonial court and encroachment respectively. With respect to Nananom, respondents explained that the counter-ruling by the colonial court in a case between the Wesleyan Church (now The Methodist Church) and the Judicial Committee of the Traditional Council disregarded and denigrated the cosmovision of the traditional authorities and the local people.

Historical accounts of the case indicate that a male-hunter called Budu Atta went hunting in Nananom. He was arrested and fined by the traditional judicial committee. He, assisted by a friend, called Akwasi, petitioned the Wesleyan Church. The church took the issue to the colonial court. The court overturned the earlier ruling by the traditional judicial committee and made a pronouncement that all environmental resources, including those in the grove, were accessible to all and sundry with no restrictions. This ruling paved the way not only for an onslaught on the resources in Nananom for domestic and economic gains, but also, the denigration of the sacredness of the grove. This led to the adage '*Akwasi egu Nananom pow*' which literally means '*Akwasi led the destruction of the sacred grove of Nananom*'.

An elderly man described the subsequent outcome of the judgement with this sentence; '*... Nananom has now lost all its sacredness and dignity*'. In describing the impact of the church on traditional beliefs and practices, a chief concluded that '*Christianity is now linked to civilization and modernization, and that has made the church more powerful than the traditional authorities*'. Although a limited portion of the grove has been preserved by some of the elders, the fear that the future generations may meet an extinction of some beliefs and practices that are vital for its preservation was expressed.

With respect to Obo Sonsonhyen, the grove faces the challenge of encroachment, partly, as a result of urbanization, and largely due to a growing population. For example, about six private schools, some owned by Christian Missions and others by individuals, as well as other houses,

have been constructed in portions that used to be part of the sacred grove (Plate 1). Some of these portions of land were acquired legally, while others did not use the approved acquisition channels and protocol. The elders were of the view that the breakdown of traditional beliefs and cultural values, largely due to influence of Christianity and western education, has contributed to the untoward acts by some individuals or groups.

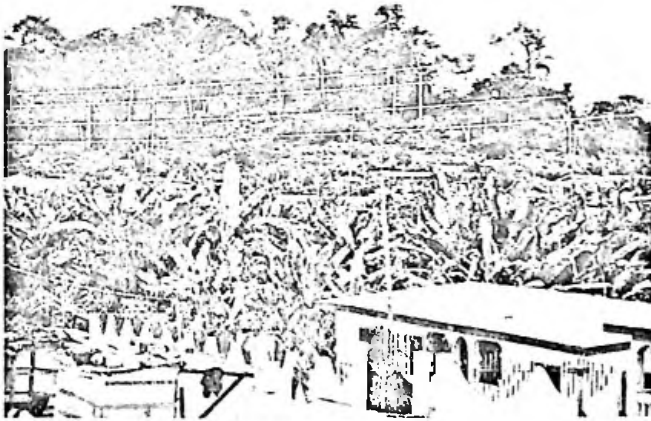


Plate 1: Encroachment threatening Jbo Sonsonshen (grove behind)
Photo by: Esia-Donkoh (2009).

An issue that was raised in almost all the three sites was the penchant for material gains by some individuals at the expense of the preservation of the groves. Felling of trees and fetching of other resources in the grove illegally for economic purposes were mentioned. For instance, during the period of the data collection, some unknown individuals were secretly conducting quarrying activities in one of the groves. Generally, the respondents, apart from those in Eshirow, were pessimistic about the future of their groves. This was expressed in the statement below:

There were big trees in the grove. But today, chain-saw operators and some of our members have felled the trees for the purposes of farming and wood for furniture. In the past, there were a variety of trees in the grove. But now, the place is almost occupied with houses and farms. [An elder, 62 years]

The case of Nsofa was different. The effects of the general threats on the grove motivated the leaders of the clan to constitute a committee to protect the heritage. Three members of the clan were selected to monitor activities that were likely to affect the dignity and sacredness of the grove. Any contrary belief that was thought to be an affront on the preservation of the grove was strongly resisted.

The clan, further, entered into a partnership arrangement with UNDP, GHP and the Forestry Commission to develop a framework to preserve the grove. Together with the clan, new varieties of trees were planted around the grove (Plate 2) to promote and ensure its preservation and sustainability. The clan was responsible for the management of the grove and accountable to all the partners. The elders believed that in the next decade or so, the grove would not only be richer in density with a variety of plant and animal species, but with a preserved dignity and sacredness.

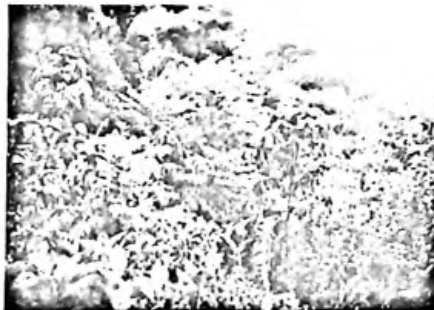


Plate 2: Nsofa with Young Variety of Trees.

Photo by: Esia-Donkoh (2005)

Benefits Associated with the Groves

There were a number of benefits associated with the groves. Some of the benefits were tangible while others were intangible. Among the tangible benefits were the preservation of streams as well as flora and fauna species. For example, the preservation of Obo Sonsonhyen has also contributed to the preservation of six streams that flow through the grove. The streams serve as drinking water to a number of villages around the grove.

There are about six streams that flow through the sacred grove which provide us with water for drinking and daily use. A number of farmers and neighbouring villages also use these streams. [An elder, 59 years]

The variety of the flora species in some of the groves provides sources of herbs for prevention and treatment of ailments. At the sites of Nsofa and Obo Sonsonshen, clan and community members largely depended on the groves to address various health-related issues. Apart from contributing to healthy societies, the caretakers received some economic rewards for their assistance. The caretakers usually assisted people to identify and fetch the needed herbs.

The intangible benefits associated with the groves were common to all the three groves. Firstly, they provide grounds for rituals. Elders solicit blessings from the gods and ancestors for fruitful farming season and harvest. Again, in times of calamities such as outbreak of diseases or lack of rains, sacrifices and prayers were performed in the grove to avert such calamities. A chief who had performed rituals of this kind in Eshirow, shared his experience:

In the past, whenever we lacked rains in this community, rituals were performed in the grove to our god for help. Three 'odwonhataa' [sacred leaves] were put in the mouth of a man

dressed like a woman with a scarf and another leaf in the mouth of a man whilst the last one is placed in front of the god. The leader then went to fetch water from the river three times. A prayer was said and the water was poured into two depressions beside the god. We had rains after the rituals. [A chief, 88 years]

According to the chief, this led to the adage '*Eshirow ɔbɔw to sen Mankessim nsu*' which literally means that '*the dew of Eshirow is heavier than the rains of Mankessim.*' These practices indicate a knowledge system that is associated with varied sciences (see also Vandana, 2000).

Secondly, the histories of the communities were attached to groves. Each of the communities recounted its history with reference to its grove. Thus, the groves served as references for acquisition of historical knowledge, as well as the cosmovision of the custodians of the heritage. For instance, Nananom holds the history of the Fantes of Mankessim, and most importantly, about their leaders, namely, Oburmankoma, Odapagyan and Oson who led the Fantes through wars from Techiman to their new settlement. All these ancestors, including the remains of those who died before reaching Mankessim (such as Oburmankoma and Odapagyan) were buried at Nananom.

Lastly, the groves constitute sources of ancestral knowledge embedded in the cosmovision of the custodians. Ancestors represent an important aspect of the livelihood of traditional people. The qualities and values associated with ancestors, their status in the spiritual world, and their influence in the social and economic worlds, make their reverence in general, and the emulation of their character in particular crucial in the spiritual, social, and economic dimensions of the people. In Nsofa, the values, qualities, good deeds, as well as the abilities of the ancestors are recounted anytime a member of the clan is buried in the grove. This is an informal process of moral and religious education.

Pathways to Grove Restoration and Preservation

Two main pathways towards restoration and preservation of the groves were practiced. There were attempts to fence the grove to physically protect it from encroachers at Obo Sonsonhyen, and a partnership between a local organisation (Anona Clan) and external organisations (UNDP, GHP and Forestry Commission) at Nsofa to preserve and sustain the grove. The partnership, which has contributed to the restoration and preservation of Nsofa comprised nine main steps as summarized below.

1. There were discussions among the clan and representatives of organisations concerned on the state of the grove and the need to restore it.
2. Needs assessment was conducted.
3. Levels of management were structured.
4. Authority, responsibility and accountability were assigned to various levels of management.
5. A committee (made up of members of the clan) to manage the grove was set up.
6. New trees were planted around the grove, marked and numbered to enhance monitoring and stock taking.
7. Weekly monitoring and monthly inventory were conducted and recorded by the committee.
8. Perpetrators found were handed over to the Police.
9. Members of the committee were given monthly allowance by partner organisations.

The partnership arrangement has so far been successful. For instance, the grove has still been preserved, and the young trees that were planted (see Plate 2) have been left undisturbed by human activities. Some of the young trees which died were replaced to maintain the number of trees planted. The entire community is also aware of the purpose of the partnership arrangement as well as the consequences should anyone go contrary to the set rules regarding the grove. It must be emphasised that

the partnership arrangement appreciated the worldviews of the clan and respected the cultural values and spiritual attachments associated with the grove.

Discussion

Various societies have similar and different purposes for establishing and protecting their groves. Irrespective of such similarities and differences, the core significance that groves provide is vital, specifically to the custodians of the heritage. In fact, groves portray the essence of relationship between the three dimensional worlds in traditional societies. This relationship transcends (western) science because it incorporates empirical evidences through systematic interactions with the social and economic dimensions of livelihoods, as well as their spiritual dimension (see Figure 1). Thus, traditional knowledge is composed of both empirical and spiritual sciences.

The use of traditional sciences enhances harmonious interactions with nature, spirits and humans for survival, co-existence and judicious utilization and preservation of natural and non-natural resources. As explained by the indigenous ecological knowledge framework (see Figure 2), within a context, there is a creation of a knowledge system which is transmitted from generation to generation, mainly through informal modes of learning. So, in many traditional societies, their knowledge systems project the interrelationship of the dimensions of existence (spiritual, human and nature). This explains the creation and preservation of groves.

The significance of groves to local communities goes beyond the preservation of flora and fauna. Its significance is primarily intangible in the sense that groves are created to enable societies to interact with their deities (ancestors and/or gods) through nature. Hence, for a society to revere and preserve the sanctity, dignity and status of such deities, it needs to preserve nature to enable traditional communities to relate well with the spiritual entities. In so doing, flora and fauna species are preserved, and at times, used for spiritual, social and economic purposes judiciously.

Groves reveal the histories of the custodians. Histories of traditional societies, and their ancestors, which are attached to groves, also relate to the three dimensions of indigenous knowledge. These histories connote the relationships that existed, and exist between the people and their gods and ancestors in the past and present. This makes such objects a resource for historical research about a group of people, communities or settlements.

There are aspects of traditional sciences, which are, to some extent, similar to western or empirical science. Such similarities to a large extent, relate to the social and economic dimensions. For instance, use of herbs for curative purposes, other reasons associated with preservation of biodiversity, economic activities and principles of sustainability are tenets in traditional sciences and western science (see Bodeker, 2010; Valderrama and Arico, 2010; Bavikatte, et al. 2010). Some of these similarities motivated UNDP with other agencies, and the Anona Clan to develop a partnership arrangement to restore and preserve Nsofa. This intervention is relevant in as much as it does not denigrate or downplay a particular belief or practice.

Beyond the challenge, however, is how to package traditional sciences to be acceptable, not as a universal knowledge, but to be recognised by western or scientific communities. This has become critical because traditional communities are no longer a homogenous entity within an ecosystem. Thus, the growing pace of heterogeneity, as a result of influx of different beliefs and practices makes the justification for recognition and cooperation crucial. The call to demystify indigenous knowledge in general, and certain beliefs and practices in particular, can be helpful. These, when addressed, would enhance cordial understanding between traditional sciences and other knowledge systems such as Christian knowledge and western science.

Conclusion

The essence of groves in traditional communities is undoubtedly obvious in the entire life of the people in such environments. The essence manifests in both tangible and intangible realms in traditional societies. The need therefore to explore and assess such heritage for sustained preservation is significant to traditional societies and indigenous knowledge. Over the years, studies into groves have more or less focused on the tangible relevance. It is, however, evident from this study that the intangible benefits associated with such edifices contribute to the preservation of the tangible benefits.

The adage that '*one cannot cover the face of God with one hand*' or similarly, '*one hand cannot encircle the baobab tree*' becomes meaningful in contemporary preservation of groves in traditional communities given the general and specific threats to the heritage. This makes frameworks that recognise and support traditional societies in their quest to restore and preserve their groves important. Locally-developed participatory frameworks, such as endogenous development frameworks, become meaningful to traditional societies for grove preservation.

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