Cultural and biological interactions in the savanna woodlands of Northern Ghana: sacred forests and management of trees

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ABSTRACT

As the emphases of conservation shift away from the protection of large mammals and spectacular vegetation and towards the preservation of habitats and the maintenance of biodiversity, the relationship between agriculture, livestock and the management of woodland resources is coming increasingly under scrutiny. The present study looks at the role of woody vegetation in two regions of NE Ghana, with a particular emphasis on the role of trees in traditional belief and the implications for woodland management. Agricultural systems in NE Ghana represent a striking contrast between the relatively low-density systems on the east-central region (Northern Region) and the extremely high densities of the extreme north-east (Upper East Region). High human population densities and the consequent pressure on the land have had significant effects on all natural resource sectors, and consequent impacts on social structures. Most notable are the elimination of almost all trees in farms in the Upper East Region (UER), with resulting soil erosion and poor fertility.

Specific trees play a major role in belief systems throughout the region and there are numerous restrictions on cutting specific tree species, although these are more relevant in the lower-density Northern Region where extraction controls exist. The system of 'chiefs' responsible for particular species of economic importance that grow beyond the farms acts to maintain NTFPs to sustainable levels.

Sacred groves make an important contribution to maintaining biodiversity and tree-cover within the region, although they are threatened by encroachment, especially in the Upper East Region. A large number of these groves were sampled to quantify the types of restriction on their use and the nature of community sanctions to prevent encroachment. Forest Reserves are sometimes coincident with sacred forests, but they were established at a period when population densities were lower than at present. The rules usually specified that attendance at shrines could be maintained within them and that non-timber products could be gathered, which was generally acceptable to the inhabitants of nearby villages. However, the policing approach which now predominates in the Ghana Forestry service has created confrontational attitudes between villagers and the authorities. In addition, economic change has accelerated demand for non-renewable products such as charcoal with the consequence that incomers who are not part of the system of prohibitions are exploit woodland with little fear of sanctions.

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1. Introduction

As the emphases of conservation shift away from the protection of large mammals and spectacular vegetation to the preservation of habitats and the maintenance of biodiversity it becomes increasingly relevant to ask what role local communities can play in this process. Indeed, a view has grown up that such communities *are* natural conservationists, only making use of the resources they require and the guilty parties are monetarisation, globalisation and their attendant ills. Once their resources acquire monetary value on a regional or national scale, communities are betrayed into selling their heritage.

This view is presumably not entirely false; communities that destroy their natural environment tend to become extinct. However, given the diversity of human societies and the ecologies to which they have adapted it seems unlikely that this equation can be universally applicable. Degradation, deforestation and erosion occur to variable degrees, even far from big cities. Perhaps we should first describe the structures of belief within a given local communities and then see whether these mesh with the parameters of conservation policy and how therefore these might be built upon.

In northern Ghana, one oft-cited feature has been the culture of sacred groves, patches of woody vegetation conserved by communities for ritual purposes. Even in areas of high arable pressure on land, these groves have been maintained and contain tree species that have largely disappeared in the surrounding savannah. So it becomes superficially attractive to ask whether the cultural matrices that have encouraged the persistence of these groves cannot be applied to a more general ethos of habitat conservation. At least one (aborted) UNESCO project has been based on this possibility.

Sacred groves exist within a complex of beliefs about trees common to all societies throughout this region. This paper[1] presents the results of a survey of cultural attitudes to trees and woodland in northeastern Ghana, focusing particularly on sacred groves and trees in farms. It also describes other cultural elements common to savannah societies of NE Ghana relevant to a conservation ethos. Map 1 shows the study area, with major roads, towns and international frontiers;

With a few exceptions, the Northern Region is relatively low density except around Tamale, and settlements are surrounded by woodland. Cattle-keeping is common among the Dagomba and fallow cycles are still relatively long. Further north, population density is extremely high, and landscapes are almost entirely anthropogenic, fields dotted with shea, kapok and locust trees. Agriculture throughout this region is unsustainable and most households only survive on remittances from household members working as wage labourers further south (Blench 1999). These differences are reflected in the size and incidence of sacred groves and other categories of tree management in the two zones.

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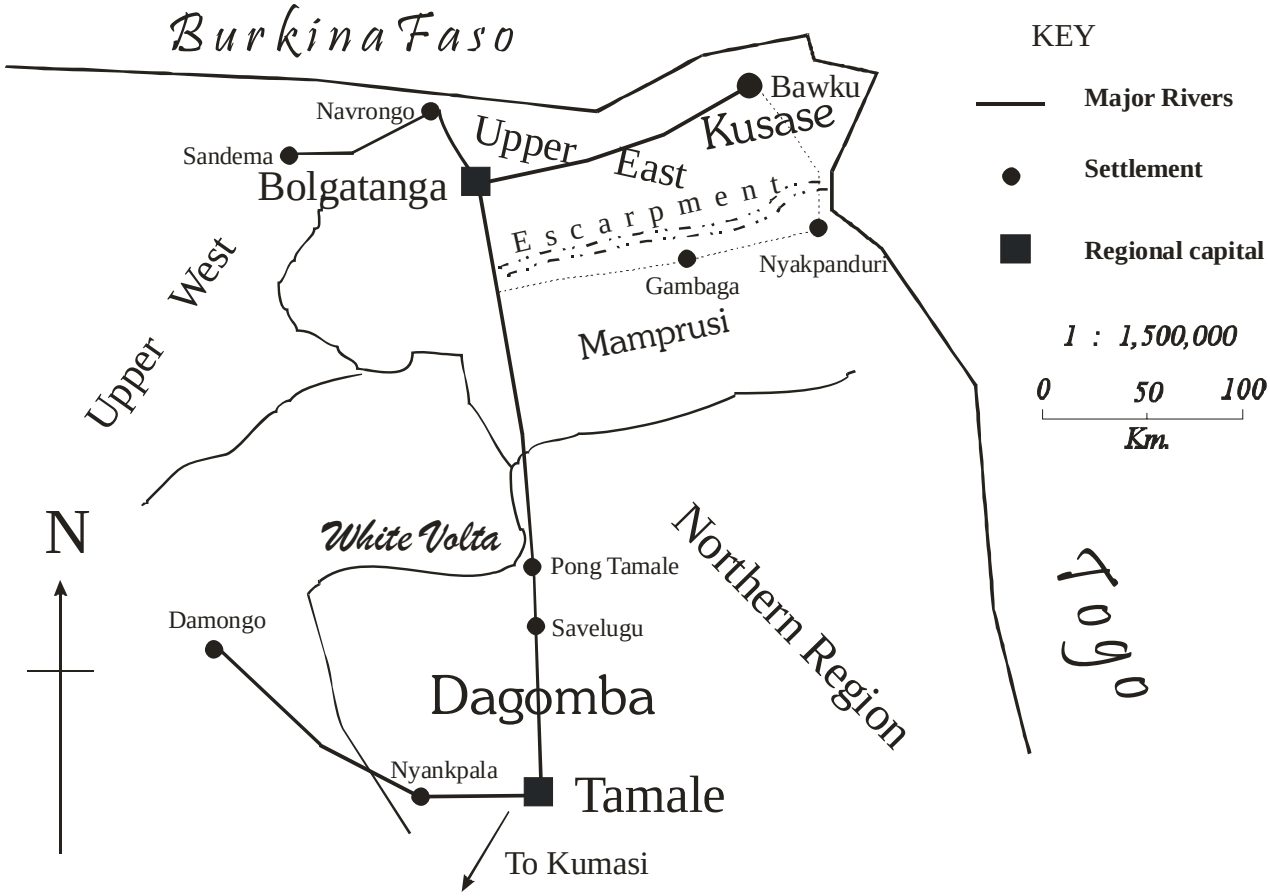
[1] This paper is based on surveys of savannah woodland management in Northeastern Ghana in June 1996 and continuing in February and March, 1997, conducted under the auspices of a DFID-funded study of savanna natural resource management project, 'Partnerships and Policies for change', conducted at the Overseas Development Institute (ODI). In its original form it was submitted as a research paper to DFID.The research was conducted under a memorandum of understanding with the Forestry Department with the practical support of Planning Branch, Kumasi and the RFOs in Tamale and Bolgatanga. I should like to thank the Forestry Department, in particular the Chief Conservator of Forests, Mr. E.O. Nsenkyire, who both eased the initial process of arranging the MOU and took time to discuss the preliminary survey results. The survey could not have been carried out without the practical support of Planning Branch, Kumasi and its Director, Dr. B. Aninakwa. I should like to thank Keith Dolman of the Forest Sector Development Project for smoothing the path of the survey in many ways and Jane Gronow for discussions and assistance with documentation. The RFOs in Tamale and Bolgatanga, at the time Mr. Oppong Sasu and Mr. Winfred Bimah did everything in their power to ease the survey in their area. Mr. Peter Howard, IUCN, kindly supplied documents relating to the wildlife element of FWRMP. James Amaligo acted as my principal field assistant during much of the survey and I would like to thank for his continuing interest. Subsequent visits to Ghana made it possible to update some of the information.

Map 1. Northeastern Ghana



2. Sacred Groves in NE Ghana

2.1 Existing studies

Sacred groves occur throughout Ghana, even in the high forest zone, where some are more than a hundred hectares in extent. Some of those within the forest zone are actually deserted settlements that have become overgrown and have been conserved precisely because they are believed to be the original site whence a people migrated. Such large groves are not normal in the savannah, where they can range from several hectares to a few trees. In the high-density regions the groves are often inside settlements and are thus almost by definition not very extensive.

At least one major study of the groves in northern Ghana has been undertaken, the CIPSEG project funded by UNESCO (1992-1995), which studied three groves near Tamale (CIPSEG 1993a,b; 1994). This project was never completed but a number of aspects of it are clear from existing documents;

a) the groves were perceived as important floristic reserves
b) and as important sources of medicinal plants
c) they were to be encouraged as part of an environmental recovery process

No consideration is given to the social and religious matrix within which the groves exist; the report assumes that there is free access and that the groves can be adapted to development initiatives without further negotiation. The representativeness of the three groves appears also to be left uncertain; the documentation concerns only the Dagbani-speaking area.

On a much larger scale, the World Bank began the process of designing a Savanna Natural Resource Management Project in 1997. This was intended to encourage the better management of the woodland

resources of the savanna, in particular the protection and encouragement of local economic tree species and woodland, a reduction in burning through community participation. The project had a very long genesis with many workshops and much consultation with government officers and NGOs, although only limited contact was made with the communities with whom it was intended to implement the project. The main government department to be involved was the Forestry Department. This had certain ironic aspects, since the general role of forestry in Northern Ghana was to plant as many exotic trees as possible, and to protect Forest Reserves (which were often plantations of exotics) from incursions by the 'natives'[2]. Indeed, when the successes of the Forestry Department were recounted, these often turned out to be calling police in to turf out unruly invaders of the reserve rather than anything more positive.

2.2 Botanical aspects

The floristic composition of these groves has been the subject of some debate. It is tempting to see them as relics of the old forest that once covered much of the savannah. This view was espoused by French researchers writing about Burkina Faso and Guinea in the colonial era (Aubréville 1939; Adam 1948). If this were the case, then they would be very precious as embattled relics of a vanished ecosystem. However, changing views of woodland genesis have suggested to more recent researchers that the anthropogenic factor in forests has tended to be underestimated (see e.g. Fairhead and Leach 1995). Lebbie & Guries (1995) in a study of sacred groves in Sierra Leone argue that they act as significant reserves of biodiversity and as reservoirs for traditional medical remedies. Further East, in Madagascar, there is little doubt that the spiny forest groves conserve the biodiversity of a unique ecosystem, but equally are being reduced by pressure of agriculture[3].

No detailed botanical research has been undertaken to settle this point; sacred groves are sacred, which means they are often not available for intrusive researchers, no matter how well-meaning. Visual inspection of the groves suggests that they are a composite, including some now-rare tree species, but also common savannah species associated with human settlement. It is very unlikely that the groves are genuine relics of the 'great forest', if any such entity ever existed. None appear to contain very old trees, in contrast to some of those within villages, suggesting that, despite precautions, bush-fires do pass through them periodically. Groves may occasionally be a stand of a single species.

2.3 Cultural aspects of sacred groves

In terms of community perception, sacred groves are not primarily forest or woodland but ceremonial sites. They are usually quite small, and the vegetation dense, even in the dry season. Almost all Dagomba villages have such groves, **bɔɣɔle**, locally translated as 'fetish'. Such **bɔɣɔle** usually consist of a clump of trees, generally containing more species than are found in the surrounding landscape, and often on a mound or tumulus. What defines the **bɔɣɔle** are the rituals performed, not the presence of woody vegetation. These are the primary rituals of the agricultural year as well as individual ceremonies to counter barrenness and other problems. The slopes away from the mound are frequently littered with tiny potsherds, **sambileensi**, indicating that this was originally a settlement site, either of this community or the one that preceded it. The potsherds are recognised as making the soil particularly fertile, and there is a certain competition for fields immediately adjacent to the grove. There is some relationship between the pressure on arable land and the size of groves. Villages further in the bush usually have larger groves. In the high-density areas, such as Bawku and Bolgatanga, the groves are frequently sited on outcrops of rocks which are anyway unusable for cultivated land. Among the Kusase people near Bawku, where pressure on agricultural land is extreme, the accompanying trees are usually very few, although the sacredness of the site is not thereby invalidated. In

[2] This may appear to have a colonial ring, but the Forestry Department in Ghana is dominated by staff who originate in the south and for whom the savanna region is alien and who have little in common with local populations, including no common language.

[3] http://www.panda.org/about_wwf/where_we_work/africa/where/madagascar/news/news.cfm?uNewsID=8503

the Navrongo area, several groves were recorded with streams running through the centre of them and in some cases the water was considered to be the sacred feature. Some of the groves at Tampion, some 20 km NE of Tamale, were markedly larger than in villages closer to the town. Although groves were not systematically sampled in Upper West, it is characterised by much greater densities of standing woodland and the boundaries of the groves are correspondingly indistinct. Nearly all groves in low-density areas are surrounded by a firebreak, usually cut by the community at the end of the wet season to prevent bush fires sweeping across the grove. Fire is less of a hazard in the high-density agricultural areas as there is insufficient grass to burn effectively. However, there is normally a path leading from the periphery of the grove to the centre where the sacrificial site is located.

The association between groves and market-places is quite strong in communities scattered through the region. Markets are more than places of commerce as they have important functions in defusing tension and creating solidarity in the local community especially in areas of dispersed settlement. There seems to have been a tendency to site markets next to groves (or perhaps the two co-evolved) and it may be that some isolated groves now in the bush are the sites of former markets.

Every rural community surveyed had such groves, varying in number from one to eighteen. The total number of sacred groves censused was 179 distributed across 42 villages. Table 1 shows the distribution of these between regions;

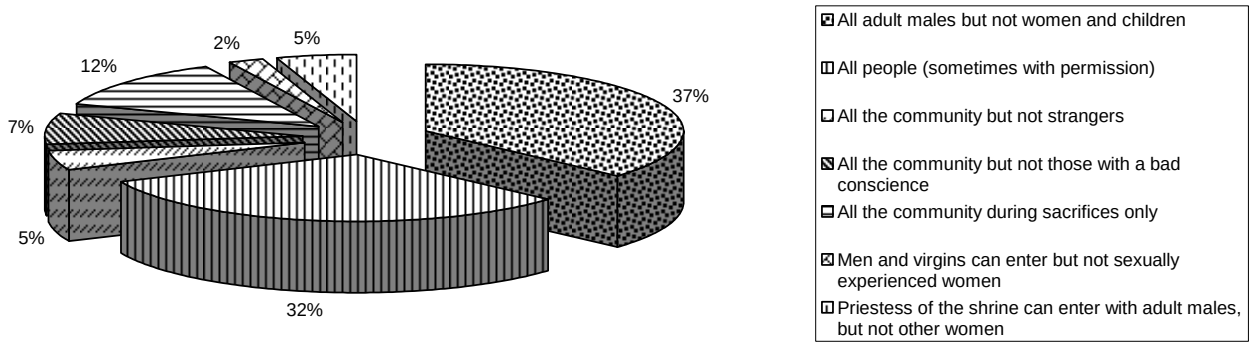
Table 1. Sacred groves sampled within the survey

Region	Communities	Sacred groves with trees	Mean no. per village
Northern	17	49	2.9
Upper East	25	130	5.2
Total	42	179	3.9

The difference in the mean number of groves per community between the Northern and Upper East Regions reflects differences in social structure. The Dagomba in the Northern Region consider themselves Muslim and have a hierarchal society with chiefs and courtiers, tracking upwards to a paramount ruler in Tamale (Staniland 1975). In the Dagomba area, groves are attached to the community, as a whole and are the location of communal rituals. Further north, the ethnic pattern is much more diverse with a mosaic of acephalous peoples, living in large communal households but not owing allegiance to central authority. In these societies, each grove has a *tendaana* or earth-priest (‘landlord’ in local English) who tends the shrine, and is more responsive to the needs of extended households rather than a broader ‘community’.

Each grove has a specific name referring to its origin and to the sacrifice carried out there. Groves often have familial relationships; one grove will be referred to as the 'child' of another. This seniority is related to the chronological unfolding of the annual cycle of sacrifices. Groves are not free access to visitors, despite the impression given in some reports. Rules for access to sacred groves vary from community to community and from grove to grove. Figure 1 show the rules governing entry to sacred groves;

Figure 1. Rules governing entry to sacred groves in NE Ghana

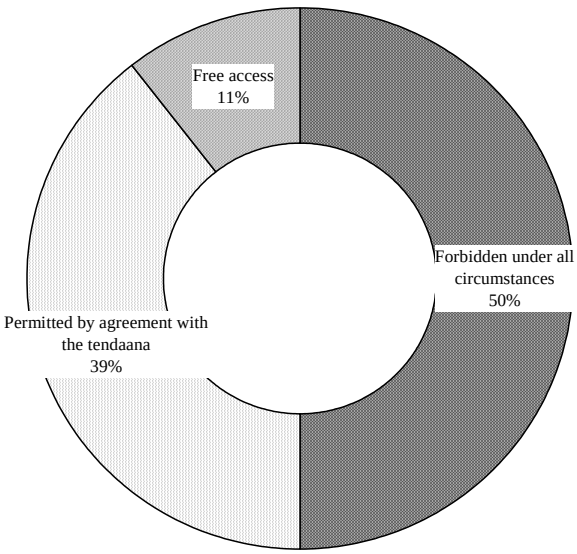


n =42

The figures show a variety of patterns but the dominance of entry restricted to adult males probably reflects a pattern that was much more common until recently. The single most common rule is that only adult males are allowed within groves at the time of sacrifice and that those who enter without permission will be afflicted with a disease or even die. In some cases, swarms of sacred bees visit punishment on the transgressor. In some groves, only the earth-priest, *tendaana*, is allowed to enter, while at the opposite extreme, everyone is permitted. Restrictions may be invisible; in Tampion, for example, entering a grove while harbouring a resentment against someone else in the community was bound to return on the individual.

The vegetation of the groves is sacrosanct; in all cases, trees cannot be cut for firewood. The usual rule is that dry branches which fall to the ground can be used by the priest for boiling a sacrificed fowl, but can never be removed from the grove. Since the groves contain many plants now difficult to find in the surrounding savannah, they are now significant reserves of medicinal plants. However, in some communities there is free access to cut leaves, bark and branches whereas elsewhere this is strictly forbidden. In one case, if a sick person has sought the plant extensively elsewhere, he or she can cut leaves in the grove on payment of a fowl. Figure 2 charts the distribution of rules governing medicine gathering in sacred groves.

Figure 2. Rules governing medicine gathering in sacred groves in NE Ghana



n = 38

In the high-density areas, permission must always be sought from the 'landlord' of the grove. However, many people suggested that someone desperate for a medicine would simply enter clandestinely. Livestock range freely through the savannah in the dry season and enter the groves to eat grass and browse as well as to seek shade. There is no restriction on their presence, presumably because without fencing it would be near impossible to disbar them. This has the advantage that their manure increases the fertility of the soil in the groves, but the disadvantage that young plants are destroyed, especially by goats.

Wild animals are protected within a grove; a hunter must stop at the edge of a grove and cannot chase an animal that seeks sanctuary. Indeed in some areas, certain species of wild animals are said to be the 'children' of the grove and thus cannot be killed, even away from it. The following species were cited; the Nile Monitor, the lion, the leopard, the python and the amphisbaenid snake. Most groves are too limited to

constitute major refuges for any but the smallest mammals, but they are very important as bird habitats, providing fruits and insects not found in the surrounding savanna.

There is a striking lack of coherence between the maintenance of sacred groves and claimed adherence to world religions. Most Dagomba profess Islam, while many of the other peoples of the north-east are primarily Christian. Whatever their allegiance, they do not see this as contradicting the maintenance of traditional spiritual culture. This has led to a strong preservation of societal rules in relation to groves; the commonplace that traditional obedience to such rules is breaking down seems not to be true in this case.

To summarise, sacred groves have the following features;

a) they are widespread throughout the savannah regions of Ghana
b) they are usually small in size, sometimes consisting of only a few trees
c) they contain more diversity than the surrounding bush, but it is doubtful if they are relics of a purported ancient forest
d) rules of access vary, but women are commonly forbidden to enter
e) they are likely to provide refuge habitats for birds, small mammals and reptiles
f) they are still widely maintained for traditional spiritual reasons
g) firewood cutting is forbidden and collection of medicinal plants is restricted
h) there is frequently evidence for a former settlement on the site

3. Trees outside groves

Beyond the farms are large expanses of bush, especially east of Tamale. As is common in shifting cultivation systems economic trees within these areas are owned in a general sense by lineages, but in practice access has been virtually uncontrolled. Those who wish to collect bush-fruits and other tree products in remoter areas are free to do so. This open-access regime is now being called into question, because it allows free rein to charcoal burners. The rapid urbanisation in northern Ghana has increased demand for charcoal and migrant charcoal burners with no traditional are exploiting this loophole for purely economic purposes.

3.1 Indigenous and exotic trees

Throughout the region a strong distinction is made between indigenous and exotic trees. Indigenous trees belong to the ‘bush’, at once a threatening and important place. A consequence of this belief is that wild tree species should not be planted as this would be to mix two categories that should be kept distinct. Most peoples in the region believe that misfortune will fall upon anyone responsible for planting species of trees that already grow in the bush. This belief was originally responsible for strong resistance to planting any type of tree, and even mangoes and cashews were excluded. The planting of mango seedlings was reported to be a major source of division within communities in the 1960s. However, gradually fruit trees and neems have been accepted, by virtue of their exotic status. Indigenous species, such as *Parkia* (locust) and *Vitellaria* (shea) remain uncultivated.

NGOs frequently hold conferences where issues of mutual concern are discussed, which helps explain why they tend to come up with similar solutions to characteristic problems. Many NGOs have some interest in woodland regeneration and other forestry or tree-planting initiatives. Existing solutions all essentially focus on planting trees, either fast-growing exotics such as teak or fruit trees, especially of recent, cashew. Small plots of teak adjacent to villages are a common sight, flagged by the signboard of the initiating agency. When a village ‘decides’ to plant a woodlot after prompting from an NGO or other agency, it will often assign ownership to a very old man who can be expected to die before the trees come to maturity.

Some tree species are not cut for firewood, either in farmland or in the bush. These include;

Monkey guava	*Diospyros mespiliformis*	Baobab	*Adansonia digitata*
	Gardenia terniflora		*Sterculia setigera*

These are believed to harbour spirits who would be offended and bring misfortune on the village. Elsewhere, burning certain trees is said to induce madness or attract lightening to a compound. The pattern of these beliefs varies from group to group, drawing on a pool of common ideas. This cultural complex spreads north into Burkina Faso, as similar ideas have been reported about 'haunted trees' among the Mõõre.

3.2 Tree chiefs

An institution among the Dagomba not replicated among acephalous peoples is the practice of appointing chiefs of tree species. These are individuals responsible regulating access to a particular species of tree in the bush and for settling disputes over who can collect its fruits. The tree species that may have named chiefs are shown in Table 2;

Table 2. Dagbani names for tree-chiefs

Species	Dagbani term
Locust	*Duhenaa*
Shea	*Tamanaa*
Kapok	*Gondanaa*
Baobab	*Tunaa*

This institution is not entirely disinterested, since it is customary for the harvester to give a proportion of the produce to the tree-chief. It is principally of importance in high-density areas where resource conflicts can arise. In the low-density areas, the responsibility for all economic trees lies with the village chief. Another system that operates among the Dagomba is allocating control of particular areas of bush to individual sub-chiefs, effectively a system for limiting environmental damage. These sub-chiefs can forbid the cutting of trees for timber or block their conversion to farmland. Such institutions seem to be entirely absent further north for lack of substantial stretches of woodland.

3.3 Charcoal-burners and chainsaw operators

The ownership and control of the bush has come to take on greater significance in recent times due to the increased economic importance of both fuelwood and charcoal. Charcoal was probably rarely made in the precolonial era due to the abundance of the wood resource. With the growth of urban centres and the related spread of small-scale *pito* (beer) brewing, both the fuelwood and charcoal trades have been expanding. The growth of gold-mining in UER is seen locally as having given a major impetus to the trade. In some areas the trade is in the hands of the indigenous populations, but there are also incoming groups, such as the Sissala from UWR who have developed roadside charcoal production enterprises.

As elsewhere in Africa, mobile groups do not consider themselves bound by the prohibitions and controls that are effective with a resident population. As a result, there has been considerable controversy over both the impact of charcoal production and the rights of local peoples over the bush. It is in the interest of the incomers to claim that the bush is a free resource and of the indigenous people to claim that they 'own' it. Charcoal producers could operate in very remote areas, which would be less controversial, but their costs in getting the charcoal to the selling-points along the road would inevitably be substantially higher. Meanwhile, the Regional Governments have taken an interest in the profits of the sellers and have attempted to tax loads of fuel and sacks of charcoal entering major settlements (Wardell 1996). The scene is thus set for a three-way conflict between the indigenous populations who do not wish to see their woodland resource depleted,

especially by outsiders, the sellers, whose interest is only in rapid turnover and the Regional Governments, who would like to control but not discourage a trade seen as a useful source of income.

Despite Fairhead and Leach, Ghana has managed to extract most of its valuable humid forest timber and much of the region once dominated by tropical hardwoods is a mosaic of Farmers and village communities are presently naïve about the value of the woodland resource and inexperienced in dealing with concessionaires and chainsaw operators. This is likely to be a problem in Upper West and northwest Northern Region where substantial tree resources remain.

4. Bush fires

The prevalence and intensity of bush-fires in the savannah regions of Ghana has been remarked and condemned since the earliest period of forestry reports. The significance of bush-fires in tropical Africa has been discussed in West (1965) and for Ghana by Korem (1985). It is generally thought that bush-fires are part of the natural ecology of the West African savanna and indeed some plants are unable to germinate without the stimulus of fire. However, recent research on carbon-dating sediments has shown that the incidence of bush-fires has sharply increased towards the present, suggesting that the majority are anthropogenic[4]. Although occasionally lightning or spontaneous combustion can lead to burning, the great majority of fires are set by people. A variety of reasons are cited;

a) Hunters burning grass to drive small animals into the open
b) Herders setting fires to encourage a new flush of grass for their stock
c) Farmers engaging in pre-emptive burning to protect fields, groves etc.
d) Farmers creating ash to fertilise low-yielding soils

There may well be more subtle, less well-explored agronomic strategies. It is generally accepted that the yield of shea trees is greater if the grass around them is burnt early in the year. This might be to reduce competition for nutrients, but may also stimulate fruiting directly.

Although these activities are undesirable in that they exchange a short-term gain for longer-term deleterious effects, they nonetheless proceed from clear motives. There may, however, be more deep-rooted cultural causes of burning. Kirby (1987) has argued that wildlands represent a threatening category in many cultures in northern Ghana and that trees are representative of that wildness. Burning is therefore an attempt to 'domesticate' the wild by levelling it; similar motives would thus explain the failure of numerous tree-planting schemes sabotaged by uncontrolled livestock and even human attacks. Such a deep cultural imprinting would help explain why attempts both to forbid setting bush-fires and to educate populations have had a very limited impact.

Bush-fires depend on a rather specific human population density. In very high-density regions, such as Bawku in UER, field density is so extreme that areas of grass large enough to create a high-temperature blaze and threaten trees are very rare. In parts of UWR, where tree cover is still very dense, limited light reaching the ground restricts the growth of grass and undergrowth and probably limits desiccation. Although bush-fires do occur, they rarely seem to have the devastating intensity of those in the more open savanna. As a result, bush-fires flourish best in zones of medium-density settlement as in much of Northern Region (and also Brong-Ahafo, further south, much of which is anthropogenic savanna) where the thinning of the trees creates ideal conditions for the growth of intermediary grass.

Bush-fires often destroy not only woodland and crops but also houses and sometimes entire villages. They are cause for an annual round of breast-beating, printing of T-shirts and video-opportunities; needless to say these have little impact on strategies for controlling fires in the following year. Controlling bush-fires remains problematic for a variety of reasons connected with the social structures prevalent in the region. The

[4] I am indebted to Professor Michael Bird of the School of Earth Sciences, ANU, Canberra for a copy of an unpublished report on this work.

short-term gains are very real, and when farmers are pressed to the wall, as in much of Upper East, balancing them against long-term losses is unlikely. Bush-fires are often not set visibly, making the setter difficult to identify. Moreover, their spread is not generally thought to be the responsibility of the setter; a farmer engaging in pre-emptive burning may devastate hundreds of hectares without being held responsible.

Enforcing bush-fire prohibitions is more effective in areas where there is a recognised authority system; among the Dagomba and Mamprusi, for example, the authority chiefs represent remains significant. However, the acephalous societies that dominate both Upper East and parts of Upper West have never accorded great respect to chiefs, an aspect of their society that finds strong expression in their dispersed settlement patterns. As a result, the capacity of communities to decide on environmental strategies and enforce them is very limited.

The unpredictability of bush-fires has significant implications for savannah woodland management strategies. The tree resources in more humid areas are most often estimated by ground assessment, although satellite imagery is increasingly used. High forest trees may disappear as they are cut down but they represent a relatively stable resource. In the savannahs, however, the woodland resource may change dramatically within a few days as a result of fires. Major expenditures on mapping such resources (such as through remote-sensing) would therefore appear to be unjustified unless more effective controls on bush-fires can be established.

5. Hunting culture and faunal conservation

In traditional societies, the hunter was a considerable, prestigious figure and was associated with the ruling classes. The social structure of this region of Ghana is dominated by elaborate class divisions and hunters were part of the élite. Until recently, wildlife populations made the hunter a significant contributor to subsistence. However, the extermination of almost all species of sizable mammal and reptile in NE Ghana has meant that theirs is now essentially a ceremonial role. Hunters shoot guns at funerals but not at animals.

Bushmeat still has considerable prestige in Ghana and, especially in the South, consumers will pay preferential prices for game meat as opposed to livestock. A valuable and quite high volume trade runs from UWR southwards, where wild fauna is still common in the low-density areas, especially around the Mole Game Reserve. The meat is usually smoked in bush encampments and then sold at intermediary markets to traders who transport it to urban markets. Hunters from UER and NR who can no longer operate in their 'home' area have developed the habit of undertaking large circuits during the dry season, hunting in remote forests and selling the meat to these markets before returning home to farm. It is said that the hunters also enter neighbouring Francophone countries, although for obvious reasons they are not willing to discuss this. As with charcoal burning, this exploitation of a wildlife resource that is within the territory of other peoples by individuals outside the system of cultural restrictions is very difficult to control, because of the remoteness of the areas involved. However, it does suggest that giving communities control over their own wildlife resource is not enough unless these wildcard individuals can also be policed.

A distinctive feature of societies in NE Ghana is the assignation of totemic animals to particular clans or lineages. If an animal is your totem then you are obligated neither to kill nor eat that animal. Species can range from lions and leopards to mudfish and insignificant snakes. These restrictions are sometimes connected directly with the sacred groves (see §2.3). It is possible that at one time this did indeed act to reduce hunting pressure on individual species, but since the restrictions were very local, the current greater mobility of hunters has made this practice no more than a ceremonial relic and certainly not the basis for a conservation ethos.

6. Conclusion

Ghana has so far a limited strategy on biodiversity conservation; wildlife is mentally confined to national parks and trees to forest reserves. However, environmental degradation is occurring across the north virtually unchecked. Mammals are being hunted out wherever they venture beyond reserves and trees transformed into charcoal. At the same time, savanna burning occurs virtually unchecked despite fruitless rounds of prohibition. Overall biodiversity is being lost at a far greater rate than individual trees and habitats have yet to be classified in terms of priority for protection. A village woodlot, even if successful, cannot replace the functions of conserving a rich mix of species but simply meet one need of the community.

Over the years, Northern Ghana has been subjected to a variety of development projects, all aiming to solve the problems of its agricultural imbalances and declining natural resource base. Forestry projects are usually presented from a strictly economic point of view, with trees considered just another crop to be managed according to the theory of the time. Appraisal documents may recognise the existence of sacred groves but they inevitably omit any discussion of what makes them sacred, supposing those responsible for them will at once convert to whatever fashionable scheme is propounded for their management. In the thinking of World Bank, which initiated the Savannah Natural Resource Management Project, woodland resources could be tamed by community management, forgetting that indigenous systems of management were in place, albeit with diverse outcomes. In 2003, after several years of failing to make any impression on natural resource management, the SNRMP was closed down prematurely.

This suggests that any simple mapping between modern biodiversity conservation and behaviour in the local community that looks like resource conservation but has developed from a spiritual worldview should not be entertained. Local communities conserve some things and destroy others; sacred groves persist but the bush is burnt and the animals hunted out. Furthermore, the rules are highly diverse and vary from region to region. Greater mobility and expanding long-distance trade has meant the woodland resources are also vulnerable to outsiders, both charcoal-burners and hunters, who are not bound by the values of the particular community.

This is not a counsel of despair; evidently there are elements which can be built upon in the cultural matrix of both sacred groves, represented by the *tendaana*s, and the system of tree-chiefs. To date, at least, these individuals appear to have been bypassed in the quest for collaboration with the community. However, for an intervention strategy to be successful it will also have to take greater account of the variation in groves from one area to another and classify more effectively the rules of access. However, trees play a pivotal role in traditional religion throughout the region and their cutting, collection and harvesting are surrounded by numerous local restrictions. Projects are unlikely to succeed without a clear understanding and incorporation of these cultural values.

Bibliography:

Adam, J.G. 1948. Les reliques boisées et les essences des savanes dans la zone préforestière en Guinée française. *Bulletin de la société botanique Française*, 95:22-6.

Amanor, K.S. 1996. *Managing Trees in the Farming System: the perspectives of farmers*. Ghana: Forestry Department.

anon. 1995. Deforestation in the North - Rural Forestry to the rescue. *Environment World Quarterly*, 3:8-10.

Aubréville, A. 1939. Forêts reliques en AOF. *Revue Botanique Appliqué*, 19:479-484.

Blench, R.M. 1999. Agriculture and the environment in northeastern Ghana: a comparison of high and medium population density areas. In: R.M. Blench (ed.) *Natural Resource Management and Socio-economic Factors in Ghana*. 21-43. London: Overseas Development Institute.

Chipp, T.F. 1922. *The forest officer's handbook of the Gold Coast, Ashanti and the Northern Territories*. London:

CIPSEG 1993a. *Ecological, ethnobotanical, physiological and eco-physiological investigations into three traditional groves in Northern Ghana*. Legon, Ghana: Department of Botany.

CIPSEG 1993b. *Baseline ecological studies and strategies for tree survival in Northern Ghana guinea savanna ecosystem*. Kumasi, Ghana: Forestry Research Institute of Ghana.

CIPSEG 1994. *Proceedings report: Workshop on sustainable land use systems in savanna ecosystems in Ghana*. Tamale: UNESCO/CIPSEG.

Clacey, J.L. and J.M. Ramsay, 1955. Land use, soil and water conservation in the northern Territories of the Gold Coast. *African soils*, 3:338-353.

Fairhead, James and Melissa Leach 1995. False forest history, complicit social analysis: rethinking some West African environmental narratives. *World Development*, 23(6).

Hill, H.L. 1930. The shea tree (*Butyrospermum Parkii*) in the Northern Territories. Paper XXIX, Annual Report of the Gold Coast Agriculture Department.

Kirby, J.P. 1987. Bush-fires and the domestication of the wild in the Northern Region: a case study. *Occasional Papers of the TICCS*, 1:14-30.

Korem, Albin 1985. *Bush fire and agricultural development in Ghana.* Tema: Ghana Publishing Corporation.

Lebbie, Aiah R. and Raymond P. Guries 1995. Ethnobotanical value and conservation of sacred groves of the Kpaa Mende in Sierra Leone. *Economic Botany*, 49(3):297-308.

Lynn, C.W. 1946. Land planning and resettlement in the Northern Territories of the Gold Coast. *Farm and Forest*, 7(2):81-83.

Manoukian, M. 1952. *Tribes of the Northern Territories of the Gold Coast.* London: Oxford University Press for the IAI.

Morris, K.R.S. 1946. Big game and the Northern Territory farmer. *Farm and Forest*, 7:21-7.

Norton, Andew 1987. *The socio-economic background to community forestry in the Northern Region of Ghana*. 72pp + 11 maps. Accra: ODA unpublished report.

Pélissier, Paul 1980. L'arbre dans les paysages agraires de l'Afrique noire. *Cahiers ORSTOM, séries Science Humaine*. 13 (1):131-136.

Planning Branch. 1997. *The status of savanna woodland management in the Northern Regions of Ghana and strategies for future development.* Unpublished report prepared by Planning Branch, Forestry Department, Kumasi.

Rattray, R.S. 1932. *Tribes of the Ashanti hinterland*. Oxford: Oxford University Press.

Roulon-Doko, Paulette 1996. *Conception de l'espace et du temps chez les Gbaya de Centrafrique.* Paris: Harmattan.

Seignobos, Christian 1997. Les arbres substituts du mort et doubles du vivant. In *L'Homme et le milieu végétal dans le Bassin du Lac Tchad.* D. Barreteau, R. Dognin and C. von Graffenried eds. 23-34. Paris: ORSTOM.

Sillans R. 1958. *Les savanes de L'Afrique centrale*. Paris: Paul Lechevalier.

Staniland, Martin. 1975. *The Lions of Dagbon: Political change in Northern Ghana.* Cambridge: Cambridge University Press.

Stebbing, E.P. 1937. *The forests of West Africa and the Sahara*. Edinburgh: Chambers.

Taylor, C.J. *Synecology and silviculture in Ghana*. Edinburgh.

Vigne, C. 1936. Forests of the Northern Territories of the Gold Coast. *Empire Forestry journal*, 15:210-213.

Wardell, D.A. 1996. *Consultancy Report on a mission for the World Bank Forestry Resource Management Project.* Accra: World Bank.

West, Oliver 1965. *Fire in vegetation and its use in pasture management with special reference to tropical and subtropical Africa.* England: Commonwealth Agricultural Bureaux.

Wills, K.B. ed. 1962. *Agriculture and land use in Ghana*. Oxford: Oxford University Press.