FROM THE GROUND UP
CASE STUDY NO. 4

Religious Beliefs and Environmental Protection: The Malshegu Sacred Grove in Northern Ghana

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Series Introduction

In 1987, the Center for International Development and Environment of the World Resources Institute, in collaboration with African development institutions and Clark University's International Development and Social Change Program, initiated an ambitious program in Africa known as **FROM THE GROUND UP**. The program seeks to increase local, national, and international development assistance institutions' capacity to strengthen community management of natural resources in Africa. The guiding belief of **FROM THE GROUND UP** is that important insights can be gained by analyzing effective community-level efforts in natural resource management. In practical terms, that means identifying communities that are already pursuing ecologically sound self-development and analyzing the reasons behind their success — local leadership, viable institutions, suitable technologies, etc. Collaborating institutions in Africa have studied and documented the cases in the series to date; similar manuscripts can be submitted to the Manager of the **FROM THE GROUND UP** program to be considered for publication.

FROM THE GROUND UP shares the results of its case study and their policy implications with other communities, national policy-makers, and the international development community. Publications, conferences, workshops, training programs, radio, and video are all used to reach these audiences. Over the long term, these findings will promote decentralized, small-scale natural resource management policies, influence the allocation of development resources to the grassroots, and foster self-reliance and sustainability within the communities.

WRI's **FROM THE GROUND UP** case study series is designed for professionals in the development community — governmental and nongovernmental development and environment planners and field workers, international and national development assistance officers, and concerned academics. The series is intended to inform policy-making, stimulate discussion on environment and development, and assist in training programs for development officers.

The African Centre for Technology Studies (ACTS), based in Nairobi, Kenya, and WRI are jointly publishing the **FROM THE GROUND UP** series for distribution in Africa and elsewhere. ACTS is a nonpartisan, nonprofit institution established to conduct policy and practical research in technological innovation and natural resource management. ACTS promotes the view that technological change, natural resource management, and institutional innovation are crucial to sustainable development and should be at the core of all development efforts.

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C.D-A.
O.A-A.
P.G.V.

For nearly three centuries, the community of Malshegu in the Northern Region of Ghana has preserved a small forest that they believe houses a local spirit: the *Kpalevorgu* god. Over the years, this "sacred grove" has been threatened by such nearby activities as road-building, mining, and installing electrification poles. Yet the community's traditional beliefs, embodied in the religious priest charged with protecting the abode of the god, have been sufficiently strong to prevent human interference in the forest. Indeed, this once-open forest area has developed into a partially closed-canopy forest.

Three elements stand out in the study of Malshegu's success in protecting this forest:

- A strong local religious belief in the grove as the sanctuary of the local god, more than any other factor, has buffered the forest from human disruption.

- The degradation of sacred groves in surrounding areas has helped increase the regional importance of the *Kpalevorgu* fetish. In turn, traditional religious belief in Malshegu has been reinforced, which further encourages local people to protect the grove.

- Regulations established centuries ago for using and protecting the grove are well observed by local people, preventing bushfires, farming, grazing and most hunting and gathering of forest resources from degrading the integrity of the forest ecosystem.

The experience of the community of Malshegu can enrich the case made by policy-makers and development assistance officials for local environmental protection. Specific policy recommendations for supporting the government's decentralization and local protection of ecosystems can be found in the final pages of this report.

I. Introduction

Ghana lies in a central position along West Africa's southern coast. It has two distinct ecological zones: forest and savannah. Originally, high, closed-canopy forest covered approximately 82,258 square kilometers (34.5 percent of Ghana); the remaining 156,280 square kilometers was savannah. Low, open-canopy forest is typical of about 58 percent of the savannah zone, though closed-canopy forest can be found along waterways (World Bank 1987; IUCN 1988).

Ghana's closed forests are confined primarily to the southwest and constitute the eastern edge of the Guineo-Congolean forest region. This region, which also includes forests in Cote d'Ivoire, Liberia, and Sierra Leone, is separated from forestlands in Nigeria and central Africa by the arid Dahomey Gap and is distinct in faunal and floral composition. Ghana's closed forests shelter over 2,100 plant species, most of the 818 tree species that have been identified in Ghana, and numerous endangered and endemic species (some 19 species and 2 sub-species) (IUCN 1988).

Much of Ghana's original vegetation has been considerably modified, degraded, or removed. Through natural disturbances and human interferences, viable, biologically diverse forests have been replaced with less complex ecosystems. The environmental and human consequences are predictable — increased water runoff, soil erosion, fire damage, overall lower rainfall, and lower availability of forest products (Asibey 1977, 1987; Manu 1987; Dorm-Adzobu 1988). In a country that gains from its wooded areas a value of US $200 million each year in fuelwood and pole use alone, these environmental and economic issues have become urgent (World Bank 1987).

There are no current figures on the rate of deforestation or forest destruction in Ghana. In 1981, the United Nations Food and Agriculture Organization and its Environment Programme projected a deforestation rate of 220 square kilometers per year for the period 1981 – 85. Today, only 20,000 – 25,000 square kilometers of closed forest remain (24 – 30 percent of the forest zone) (World Bank 1987; IUCN 1988; Government of Ghana 1990; WRI 1990).

The forest reserve system, established in the 1920s and 1930s, is one of the most extensive in sub-Saharan Africa (covering 11 percent of the country), yet much of the protected forest, especially in the reserves,

has been degraded. Several of the country's seven forest types are not included or well-represented in the protected areas (IUCN 1988). Ghana's protected areas include nine National Parks, five Game Production Reserves, and over 280 Forest Reserves.[1] Technically, 70 – 86 percent of the closed forest that remains in Ghana is protected in some way. However, very little closed-canopy forest is actually fully protected from being cut. For example, only 309 out of 11,754 square kilometers of the land covered by the national parks is forested.

The most serious degradation is taking place in forests outside the protected areas. There are few current, reliable data on these areas, however, estimates of 2,500 – 7,500 square kilometers of natural high forest outside the legally protected areas — 13 – 30 percent of remaining forests — have been proposed (Silviconsult 1985, World Bank 1987; WRI 1990).

Small pockets of residual closed-canopy forest, sometimes near human settlements, are scattered throughout Ghana and in other African and Asian countries (Gadgik and Vartak 1976; Messerschmidt 1985; Chandrakanth et al. 1990; Chandrakanth and Romm 1990). Many are "sacred" or "fetish" groves — forests preserved for local sociocultural, primarily religious purposes. Traditionally, many settlements in Ghana were founded on a reliance on ancestral spirits for the protection of the settlement. These community gods or guardian spirits are symbolized in such objects as trees, stones, or even manmade objects. Many have been allocated special dwelling places (streams, lagoons, forests) that are usually left undisturbed and only occasionally visited for important lifecycle ceremonies, religious rituals, or secret society meetings.

The nearly one-hectare sacred grove in Malshegu community is the largest in northern Ghana and, from a sociocultural perspective, is one of the country's most important. The community has preserved the forest for nearly 300 years by establishing and enforcing land use rules and practices designed to safeguard the abode of the Malshegu guardian fetish. These measures restrict human interferences, limit the use of forest products, and protect against natural disasters and other events, including annual bushfires. They have enabled the grove, originally open-canopy forest, to develop a partially closed canopy which is visually striking in the semiarid surroundings of Malshegu.

In 1989, a field research team was organized by the Environmental Protection Council (EPC) (Ministry of Local Government) to examine the local beliefs, regulations, and practices that have successfully protected the Malshegu sacred grove and to determine their core elements and policy implications. The research team included two professionals from the EPC headquarters in Accra and the EPC coordinator in Tamale. Three visits were

1 Each category of protected area affords a different level of protection. National parks are fully protected and are used primarily for tourism, and some scientific research. Game production reserves are set aside to raise wildlife for human use. Forest reserves are minimally protected; local people have access to their resources and the state manages them for timber production.

made to Malshegu between June and September 1989, for a total of 13 field days. The researchers made several subsequent visits to collect additional data and fill in information gaps. The data-collection methodology included participant-observation techniques, site visits with local leaders, administration of a household questionnaire, and discussions with key informants, individuals, and groups, including special interest groups.

II. Malshegu Sacred Grove

The people of Malshegu, their beliefs, activities, and surroundings all figure centrally in their successful environmental preservation effort.

Location and Ecology

The community of Malshegu is located six kilometers north of Tamale — capital of the Northern Region — on the Tamale-Kumbugu road. (*See Figures 1 and 2*). Constructed in the 1930s, the road services two important area facilities, the Tamale water supply station and now the Botanga Irrigation Project as well. The Malshegu sacred grove lies on the outskirts of the settlement.

Despite its proximity to Tamale, the area surrounding Malshegu is not densely populated with human settlements, though cattle are numerous. The nearest community, Woggo, is located about 4 kilometers to the south. (*See Figure 2*). The Malshegu settlement, compound farms, and sacred grove are surrounded by open lands used primarily for grazing and, to some extent, for agriculture.

The Malshegu land is classified as Guinea Savannah. Characteristic of central and northern Ghana, Guinea Savannah is the largest of the three savannah sub-zones (approximately 83 percent of the savannah zone (World Bank 1987)). The predominant natural vegetation consists of short perennial grasses, up to two meters high, interspersed with fire-resistant, deciduous broad-leaved trees. Many natural and planted trees on farms, near compounds, or in the settlements are maintained for social, religious, or economic value.

The mean annual temperature in Tamale is 27.9 degrees C; the recorded rainfall range for the region is between 900 – 1,650 millimeters, with an annual average of 1,070 millimeters. The rainfall occurs in one season, from May to October; a long dry season follows, intensified by a hot northeasterly airstream — the Harmattan winds — from the Sahara desert. The area is prone to periodic droughts, most recently in 1972 – 73, 1976 – 77, and 1982 – 83.

No surface rivers or streams flow through or near Malshegu, though there are some untapped shallow groundwater resources. A standpipe in the village from the Tamale water station provides the only permanent water source. Few houses have zinc pan roofs or other rainwater-collection systems.

The soils in Malshegu — classified as savannah ochrosols (USDA utisols) — have low agricultural potential and are highly susceptible to water and wind erosion. The organic matter content is low (normally less than 2 percent) and iron pan or gravel is found at shallow depths. Such agricultural conditions ensure that few farmers can produce enough food to feed themselves and their families over the long dry season, especially during drought years, when crop failure is common.

Land Use Changes

The people of Malshegu belong to the Dagbani ethnic group. It is believed the Dagbani came to Ghana from northern West Africa; they formed part of a long human migration beginning after the fall of the empire of Ghana in the 12th century. (This empire had been a kingdom incorporating parts of today's Mali, Mauritania, and Senegal.)

Originally, extended families lived in separate compounds on farms scattered in the countryside. Four to five nuclear families usually occupied one compound — round houses positioned in a circle and joined by a wall with one entrance. The heads (patriarchs) of several family compounds formed a loose council of elders; they chose one of their ranks to be a chief responsible for the concerned compounds, and they acted as his advisors. This dispersed pattern of settlement in farm compounds and loose political structure is still common in northern Ghana, especially the northeastern region. The existing sociopolitical hierarchy in Malshegu is made up of the chiefs and elders who constitute the traditional leadership, together with the Town Development Committee — a village-based development institution established by British colonialists — the District Assemblyman[2], and the Committee for the Defense of the Revolution[3], which constitute the modern leadership.

The Malshegu settlement came into existence in the early 18th century, when several families voluntarily moved nearer each other — but remained in separate farm compounds — to defend themselves and their properties from Arab invaders from the Sudano-Sahelian region to the north. The main trans-Sahara caravan route was less than two kilometers from the current settlement and the farm compounds were frequent targets for both slave and livestock raiding. As the advantages of living

2 In 1988, the 65 district councils were replaced by 110 district assemblies as the lowest level of administrative and political authority. Two-thirds of the assembly members are elected by their constituents (one member from each electoral area in the district), and the remainder are appointed by the central government.

3 The Committees for the Defense of the Revolution are government-initiated revolutionary organs established to create and foster public awareness and vigilance, promote the aims of the Chairman J. J. Rawlings' revolution, defend the nation and ensure peace, and maintain discipline, decency, and accountability.

Figure 1.
Map of Ghana

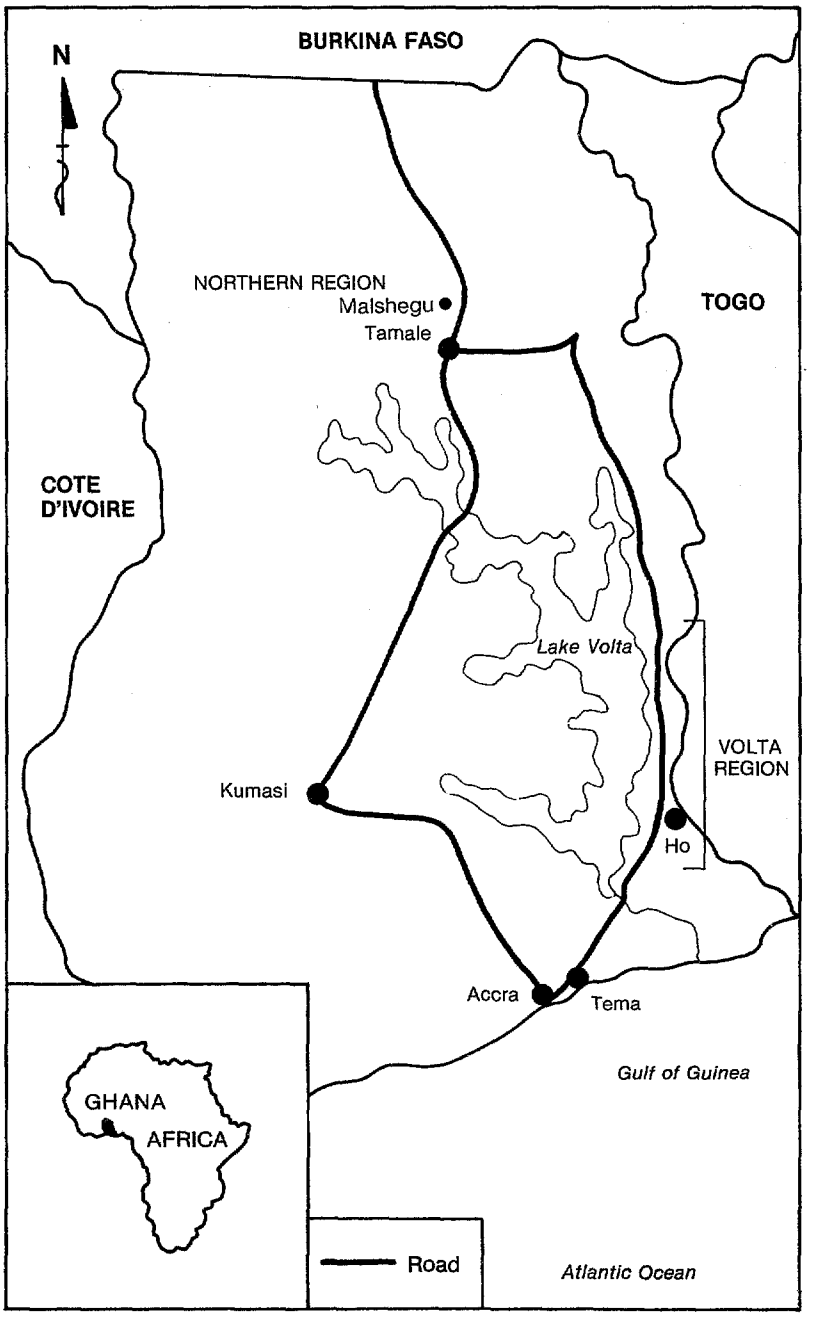
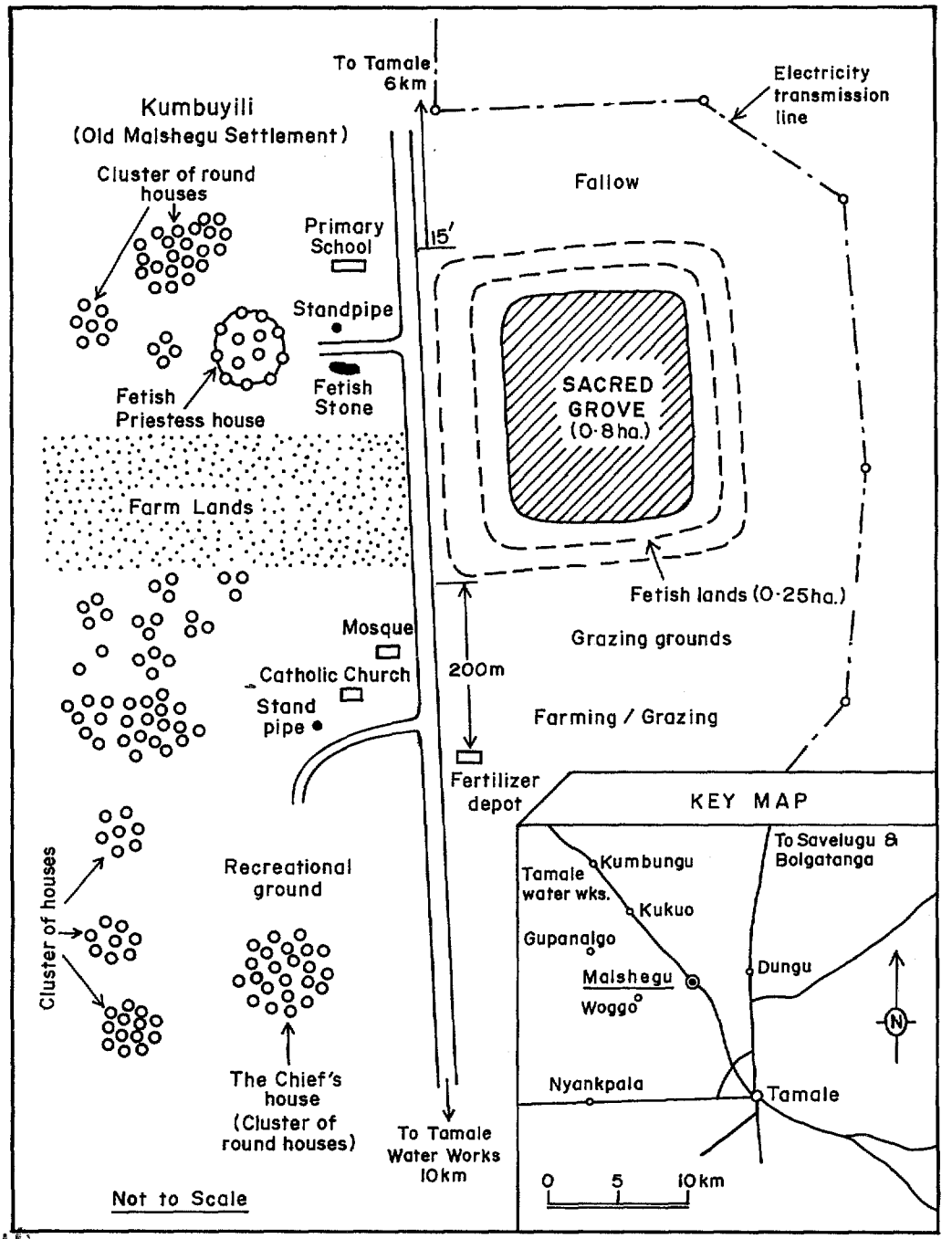


Figure 2.
Location of Malshegu and Sacred Grove



together became evident, other families joined the community.

Today, Malshegu is subdivided into two sections — *Kumbuyili* — the cluster of houses around the compound of the fetish priest — and Malshegu, separated from *Kumbuyili* by several compound farms. (*See Figure 2*). *Kumbuyili* is the traditional home of the fetish priest, also called a *Kpalna*, while the village chief resides in Malshegu.[4] At the time of the study, the population of Malshegu was estimated at 2,000 people and growing (due to an influx of emigrants from Tamale). Most young men and women (only 20 percent of whom are literate, compared to 65 percent in Ghana as a whole) migrate to nearby urban centers to find manual wage labor, but most return after a few years to resume farming.

Mixed agriculture with animal husbandry is the dominant economic activity in Malshegu. Villagers cultivate two types of farms — compound and outpost farms. Families intensively work the land immediately surrounding their compounds for subsistence crops. They plant guinea corn (a staple food) and vegetables (primarily pepper, okra) on their compound farms in March/April and harvest the produce in August/September. They also cultivate some maize, yams, groundnuts, cowpeas, and beans on these farms. Compound land is generally held with customary title by male heads of compound households, while women do most of the work.

Most compound land has been continuously cultivated for several generations. Soil fertility is maintained by using animal manure and night soil, by practicing traditional intercropping and crop rotation techniques (including the planting of legumes), and by allowing for six-month fallow periods during the dry season. Women use hoes and some animal traction to prepare the soil; very little chemical fertilizer or pesticide is used.

The compound farms in and around the Malshegu settlement are surrounded by a band of outpost farms, primarily on communal land. Traditional bush fallow farming systems are employed on these farms to cultivate cash crops, principally groundnuts, maize, and upland rice.[5] The commercial farms are managed and worked primarily by men. Most men hire a tractor and operator to prepare the land, especially for rice production, and organize small, seasonal agricultural work parties to plant and conduct other work on outpost farms. Men often call upon their sons and future sons-in-law (as part of their dowry payment) to participate in these work groups. Women usually help harvest the produce.

Virtually every compound in Malshegu has some cattle (usually four to five), goats, chicken, and guinea fowl. The area has few

4 To enable the second fetish priest of Malshegu, an elderly man, to perform his functions, a special house was built for him near the grove, about 100 meters from the original Malshegu community. According to village elders, the house was named *Kumbuyili* — "rain never destroys" — because it survived a severe rainstorm immediately after being constructed.

5 In Ghana's more remote northern areas, farmers usually produce vegetables in compound farms and staple food crops — guinea corn, beans, groundnuts — in outpost farms.

sheep. Livestock are occasionally sold to supplement household income or used for such sociocultural purposes as religious sacrifices or bridal prices. The day-to-day care of the livestock is primarily the responsibility of young boys.

Traditional Religion and Effective Environmental Protection — History

Traditional religious leaders, institutions, beliefs, and practices have deeply influenced the lives of the people of Malshegu. When the community was first established, the families came together under the leadership of an elder believed to be a fetish priest. According to elders living in Malshegu today, the founding families collectively routed the Arab slave raiders in their first battles. It is believed that a fetish god, *Kpalevorgu* — in the form of a boulder under a large baobab tree — helped these families and protected them from the invaders. The early victories encouraged other families to move to Malshegu and increased the power and importance of the *Kpalevorgu* god.

Approximately 0.8 hectares of existing open-canopy forest surrounding the boulder and baobab tree was demarcated by the fetish priest/village leader[6] as the god's sanctuary and dwelling place. The forest is located on flat, slightly elevated land on the outskirts of the settlement. It provides the fetish god a peaceful and quiet abode as well as an overview of the village that it protects from enemies and evil spirits.

In the 1930s, the main Tamale-Kumbugu road to the Tamale water station was constructed. The road passes between the Malshegu settlement and the sacred grove, within 15 feet of the forest. In the early 1950s, British colonialists brought electrical power to the Tamale water supply station. Out of respect for local religious beliefs, they detoured the transmission lines around the sacred grove. (*See Figure 2*). Concurrently, many of the remaining pockets of savannah forest on Malshegu land were cut for fuelwood and building materials. Justifiably concerned about the potential threats to the sacred grove, the *Kpalna*, or fetish priest, with assistance of the local leaders and the approval of the villagers, demarcated 0.2 hectares of additional area around the sacred grove as fetish buffer lands.

The forest in the original 0.8-hectare sacred grove consists of tall, predominantly deciduous trees that form a more or less complete canopy with lianas and, in the few forest gaps, dense undergrowth. This high forest developed from the original open-canopy forest — typical in the savannah zone — that has been artificially protected from human and natural disturbances for almost 300 years. The Malshegu sacred grove is one of the few remaining examples of non-riverine,

6 The responsibilities of the fetish priest are inherited through sons. However, at the death of the first fetish priest (and village leader) — who had no sons — the village elders and family heads (council of elders) selected the next priest. In practice, this separated the roles of fetish priest and village chief (chiefs are selected by the council of elders). Despite early disputes from the family of the first priest, all subsequent priests have come from the line of sons from this selected priest.

closed-canopy forest in Ghana's savannah zone.

The Malshegu sacred grove and *Kpalevorgu* fetish god form part of a complex traditional hierarchy of gods and accompanying religious practices found particularly in this region in Ghana. In addition, numerous spirits and supernatural powers, both good and evil, are present in local tradition.

A supreme god, considered male, is creator of all things and is worshipped by all people. The land, considered female, is the second most powerful god. Malshegu's land is believed to have come into being on a Friday, so people reserve Fridays for worship and do not work, and girls born on Fridays are given a special name. The *tindana*, a woman custodian of the land, responsible for distributing communal land, is the community's most powerful religious leader. The *Kpalevorgu* god is Malshegu's community-level god and is thought to ensure local prosperity (including rain and adequate agricultural harvests), fertility, and lineage stability.

The *Kpalna*, the community's second most powerful religious leader, supersedes the *tindana*'s authority in the sacred grove and on matters regarding its protection. The priest leads the community in honoring *Kpalevorgu* and advises the village leaders and residents on religious issues of concern to the community. The *Kpalna* is also the principal advisor to the villagers regarding compound, family, and individual spiritual matters. Individuals and families with problems consult him to identify the specific gods and spirits to be appeased and to prescribe the precise rituals to be performed. Since many physical and mental ailments are thought to stem from evil spirits, the *Kpalna* is also the primary traditional healer in the community and the provider of traditional medicines including herbs, medicinal plants, and other healing items, many from the sacred grove.

For family and personal matters, the Malshegu people establish and worship various compound and individual-level gods. Any item can become the abode of a god — "(t)he power of the fetish is the collective power of the spirits of its human worshippers" (Garbrah 1989) — but the most common form in Malshegu and northern Ghana is a clay cone, 30 – 40 centimeters high, with a small clay pot balanced on the cone's point. The pot contains water, blessed by the compound patriarch, and certain plants used to wash the face and cleanse the spirit. Offerings of food, chicken, guinea fowl, and goats are made by families to their compound gods. The spirit of the animal is released by sacrificially cutting its throat and ceremonially pouring and smearing the blood on the cone. Such practices strengthen local beliefs in the traditional religion and add to the reverence afforded to the *Kpalevorgu* god and its grove.

Traditional Religion and Effective Environmental Protection — Practice

Since the Malshegu sacred grove and fetish lands were demarcated, most trees in the surrounding area have been cut, much topsoil has been lost to wind and water erosion, the water table has dropped, and other aspects of the resource base have deteriorated. Drought in the 1970s and

Figure 3.
Malshegu Grove and Buffer Zone (Okyeame Ampadu-Agyei)

1980s fueled desertification in the region and has significantly, and, in some places, permanently, modified the environment. Evidence suggests that the forest may never be able to reestablish itself in some areas in northern Ghana. At best, it would require much more time for forests to develop in this area than it would have 100 years ago. The vegetation on the fetish lands, for example, has been undisturbed since these lands were set aside almost 50 years ago; yet, today only a tangle of woody plants, in many places less than one meter in height, grows there. (*See Figure 3*).

The Malshegu grove is an isolated pocket of forest that contrasts sharply with the surrounding Guinea Savannah in the arid and semiarid northern region of Ghana. Of significant ecological importance, the grove constitutes a critical habitat for the area's fauna and flora and serves important environmental functions for the people of Malshegu.

The forest has become a small refuge for a large variety of fauna and flora and a repository of numerous native species found nowhere else in the region in such large concentrations. It probably maintains a higher biodiversity than the original open-canopy forest. The grove is an important source of both seeds and seed dispersers vital to traditional shifting cultivation practices, and of herbs for local medicinal, social, and religious purposes. While the grove is too small to be a primary watershed, its presence ensures that the water table remains high in the immediate area. (The presence of the original baobab in the grove indicates a localized high water table). It also protects the village from wind

Figure 4.
Malshegu Grove and Grazing Fields (Okyeame Ampadu-Agyei)

and rain storms, bushfires, and other climatic hazards from the south.

The sacred grove in Malshegu has been protected and managed by villagers for nearly three centuries. When it was first demarcated, unwritten regulations were put in place by the fetish priest and other village leaders regarding land use in and around the grove. Over time, some of these rules have been amended to ensure their continued relevance and effectiveness. Today, they protect the fetish lands and the original grove by regulating the behavior of the people of Malshegu and, to some extent, of the residents of neighboring communities.

All forms of farming and grazing in the sacred grove *and* the fetish lands are prohibited. Entrance into the grove and fetish lands is only permitted during biannual rituals honoring *Kpalevorgu* (*see below*) or on other special occasions with advance consent of the *Kpalna* and other village leaders. During these occasions some hunting and collecting of forest resources is also allowed. Only the *Kpalna* and his aides have regular access to the grove and fetish lands and regularly visit the grove to pray to the *Kpalevorgu* god on the community's behalf. The priest also routinely collects traditional medicinal plants as needed for the community.

The buffer fetish lands around the sacred grove are, in turn, encircled by a one-quarter to one-half kilometer wide band of land on which only grazing is permitted. (*See Figures 2 and 4*). Only outside this strip of grazing land can villagers cultivate farms, establish compounds, or erect other structures. For example, a large-scale

gravel pit for road construction, established 10 – 15 years ago on the outside of the grazing zone, has been restricted by the *Kpalna* and village authorities from expanding in the direction of the grove. Indeed, the villagers have piled sand on the edge of the road towards the sacred grove as a further deterrent to any development.

Twice each year, the *Kpalna*, aided by the village chief and other local leaders, organizes a grand *durbar* (village-wide meeting) and leads the community in prayer and in various rituals in honor of the *Kpalevorgu* god. These religious festivals mark the beginning (May) and end (October) of the agricultural season and are designed to give thanks to the *Kpalevorgu* god for the community's prosperity and to solicit such continued blessings as adequate rainfall, bumper harvests, and health for the community. Residents from Malshegu and neighboring communities participate in the festivals.

During these festivals villagers are permitted to hunt and collect some forest resources. Hunting is restricted to various species of rodents and birds; the catch is closely supervised and controlled by the *Kpalna* and village elders. The feathers, skins, and bones of animals from the grove are proudly displayed by the hunters during these ceremonies. This temporary lifting of the hunting ban does not extend to reptiles. All reptiles are believed to be harmless; and the African python is considered the sacred symbol (or representative) of the *Kpalevorgu* god.

The branches of certain hardwood tree species may also be cut at this time for use as handles for hoes and axes. Custom requires that branches cut from the grove be used only for this purpose. These handles constitute only a small percentage of agricultural tool handles, but they are particularly important from a sociocultural perspective.[7] Young adults embarking on independent lives are encouraged to acquire a handle for their main farming tool from the grove to ensure agricultural prosperity.

At the conclusion of the ceremonies marking the end of the farming season, a three-meter wide firebelt is cleared around the sacred grove and fetish lands by the young men of Malshegu and neighboring communities under the direction of the *Kpalna* to protect the sacred grove from annual dry-season bushfires.

The people of Malshegu and neighboring communities believe that failure to comply with the rules protecting the grove, or to participate in the biannual festivals, will offend and dishonor the *Kpalevorgu* god and may bring misfortune to the offender, his or her family, and perhaps even the whole community. There are stories of people (including one American) who, despite warnings from the villagers, violated the sanctity of the god and established residency in the grazing zone, fetish lands, or sacred grove and soon fell ill, went

7 Most hoe and ax handles, acquired from outside the grove, are, in fact, becoming more difficult to secure, adding another pressure for use of the forest resources on the grove. Most of the remaining forests and trees have been cut and the fire-resistant savannah trees have few branches suitable for farm tool handles.

insane, or died. And according to village elders there has not been a single year in which the biannual festivals for the *Kpalevorgu* god were not performed.

Community vigilance, under the *Kpalna*'s direction, is well entrenched and effective. It is nearly impossible for anybody to enter the grove without being detected, approached, and reported to local authorities. The support of the village chief and other leaders from Malshegu and neighboring communities ensures that the *Kpalna* has the power needed to enforce these rules. In the past, offenders were lynched; today, they are fined several cows or goats, which are sacrificed by the *Kpalna* to appease the *Kpalevorgu* god. Fines on nonbelievers are paid by family members who still believe in the traditional religious system.

Limitations and Adaptations

Resource shortages exist in Malshegu despite the care evident in the protection of the grove. Forest products, for example, are scarce resources in Malshegu and the surrounding area. Women walk up to 10 kilometers to collect fuelwood; one full day of searching is commonly required to gather enough fuelwood for three days. Malshegu residents know they could make use of the forest resources in the sacred grove, but avoid using them.

In response to the growing shortage of fuelwood and building poles, the Malshegu Town Development Committee under the leadership of the local district assembly member, began working in 1988 with a local grassroots institution, the Amasachina Self-Help Association[8] and the Forestry Department to develop a village woodlot.

A one-hectare woodlot was initiated in 1988, but the villagers expressed dissatisfaction with the communal effort and a preference for private woodlots. Indeed, many of the tree seedlings donated by the Forestry Department for the expansion of the communal woodlot have been used instead to establish family woodlots in compounds or on compound farms.

Malshegu residents' disinterest in the communal woodlot is indicative of their low level of involvement in community development initiatives. Traditional Dagbani institutions, government-sponsored "revolutionary organs", and other externally-initiated organizations are involved in few community development activities in Malshegu. Traditional Dagbani social and settlement patterns — extended families living on separate compound farms — encourage and reward self-sufficiency at the compound level.

Many such communal characteristics of most ethnic groups in Ghana as traditional chieftaincy (Queenmother), youth groups, and self-help are not common in Dagbani

8 Amasachina, founded in 1967 and based in Tamale, is a voluntary group involved in catalyzing community self-help efforts for local development, especially the regeneration of natural growth around villages. Their success in mobilizing more than 500 villages in northern Ghana has earned the group the United Nations Environment Programme Global 500 Award for 1989.

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society (Dorm-Adzobu and Veit 1990; Dorm-Adzobu et al. 1991). For example, unlike the Asafo youth groups of the Ewe people in the Volta Region, Dagbani "youth leagues," or boys' groups, are important for lifecycle ceremonies rather than for organizing community development. Action-oriented revolutionary organs — such as mobilization squads and the 31st December Women's Movement — are conspicuously absent.

Without viable local institutions, cooperation among compounds for community development is difficult to organize and limited in its ability to address such village-wide problems as the overgrazing and population increases that have led to land degradation and desertification in Malshegu. Thus some environmental problems remain unsolved.

III. Core Elements of Effective Resource Management

This investigation leads to several hypotheses regarding the causes of Malshegu's success in protecting its sacred grove.

Strong Local Religious Beliefs

The small pocket of forest that comprises Malshegu's sacred grove is protected primarily because it is the sanctuary of the *Kpalevorgu* god. Indeed, it is difficult to isolate any forest-related activity from the traditional religious beliefs and practices surrounding the *Kpalevorgu* god. In the people's minds, the defamation of the forest would dishonor the god and bring misfortune to the offending individual and the community.

By protecting the grove, the people of Malshegu derive many benefits in addition to the spiritual rewards of serving their faith. The medicinal plants and herbs collected by the *Kpalna*, for example, serve important health needs for the community of Malshegu. The few hoe handles made from wood collected in the grove, and the few animals hunted in the forest, are important from a sociocultural perspective, if not significant in economic or nutritional terms. In addition, the forest serves important ecological functions for the community (some perhaps not locally recognized). Yet none of these benefits appear to be among the primary reasons why the community protects the forest.

In Malshegu, more than in many nearby villages, the traditional religion has survived nearly three centuries of "development," including Christianity and education. Tamale has been an important urban center in northern Ghana since well before Malshegu was settled. Catholic churches and schools have operated for nearly 100 years in both Tamale and Malshegu, but most of Malshegu's residents (some 65 percent, the authors estimate) remain committed to their traditional religious beliefs. Even the converted minority, while it no longer openly practices the traditional faith, still believes in the local gods, maintains compound and individual gods, and participates in fetish rituals in the privacy of family compounds. Few Catholics in Malshegu dare to discredit the local religious beliefs openly or defy the regulations governing the use of the sacred grove and fetish lands. Thus, although the

urban center and its ways have significantly influenced many aspects of life in Malshegu, they have had limited impact on the resilient local religious patterns.

An important reason for the strength of the local religion in Malshegu is its complexity and its penetration into almost every aspect of life. First, the beliefs associated with the community *Kpalevorgu* god are woven into a complex religious system. The number of gods and spirits and the many religious rituals performed, including almost daily sacrifices to compound gods, indicate the importance of the religion in Malshegu.

Second, the keeper of the grove, the village's strong *Kpalna*, is not only the spiritual advisor on many aspects of daily life, but he is also considered the traditional healer and is respected both in Malshegu and in neighboring communities.

Third, the pre- and post-farming season festivals remind citizens to give thanks and prayers to the fetish for recent and future good fortune. The *Kpalna* and village elders use these occasions to educate participants, especially the youth and those from neighboring communities, on certain aspects of the religion; they enable the villagers to rededicate themselves to the *Kpalevorgu* god and to the continued sanctity of the grove.

Lastly, the people's strong beliefs in the traditional religion ensures that few villagers violate the rules safeguarding the sacred grove; indeed villagers are key to protecting it from nonbelievers. Community vigilance rather than formal or active policing is sufficient to enforce the regulations. In addition, such daily factors as the personal satisfaction from adhering to the religious mandates, such punishments for misconduct as the threat of fines and the wrath of the god, and community pressure to conform, outweigh the short-term benefits of exploiting the forest resources.

Locally Accepted Protection Guidelines for the Grove

The successful establishment and preservation of the Malshegu sacred grove trace their roots to informal regulations and practices founded on the traditional worship of the *Kpalevorgu* god. For centuries, local people have adhered to specific guidelines that restrict land use in and around the grove and have performed activities to secure the forest from human interferences. By respecting the *Kpalna*'s privilege in entering the grove, keeping their compounds, farms, and livestock out of the grove and buffer fetish area, protecting the holy site from bushfires, and other measures, residents have a stake in local adherence to these rules.

In guiding residents' use of the grove, the rules have also encouraged the development of other resources to limit pressure on the grove. Recently, Malshegu's leaders have sought alternative responses to local shortages of such vital forest products as fuelwood and construction poles. Their efforts to develop woodlots indirectly eased any pressure on the grove for forest resources and ensured its long-term survival. In the future, private tree-planting efforts will help meet the community's growing needs for fuelwood, building poles, and other forest resources, so the villagers

will not be forced to compromise their religion to meet their need for fuelwood.

Regional Importance of the Kpalevorgu Fetish

Malshegu's grove is becoming increasingly important in the area, adding strength to villagers' beliefs and protection efforts. As religious beliefs in small communities are weakened, displaced, or lost, and as pressures on forest resources increase, sacred groves in many communities are encroached upon and forests are degraded or entirely destroyed. This is especially the case in areas near urban and industrial centers where traditional religious systems and commonly-held natural resources are exceptionally vulnerable to modernization and large-scale development. With the destruction of the forest, the resident god of the sacred grove is dishonored and lost to those community members who still believe in the traditional religion.

The fetish gods of sacred groves threatened by encroachment or destruction are sometimes relocated to other forests. But few pockets of remnant forest remain in northern Ghana's savannah zone, much less on any one community's land, on which to relocate a displaced fetish (a fetish is rarely moved from a sacred grove to a non-forest environment). Furthermore, the process of establishing a new sacred grove by planting tree seedlings or safeguarding land for natural forest growth is complex and long, and in some places in Ghana the local resource base has been so degraded that the forest cannot be reestablished.

Thus individuals who still believe in their traditional religion look to other communities with intact sacred groves and resident fetishes for outlets to continue practicing their religion. This dynamic is operating in support of the Malshegu grove. The nearest sacred grove to Malshegu is 10 kilometers distant; it is not well-maintained and is being degraded by the activities of local villagers and outsiders. Believers in neighboring communities, especially relatives of Malshegu residents, are coming to Malshegu to pray to the *Kpalevorgu* god and to attend the biannual festivals. Indeed, people from throughout the country, including government officials from Accra, come to pay their respect to the *Kpalevorgu* god. As a result, the *Kpalevorgu* god is today one of the most important fetishes in northern Ghana.

Not surprisingly, the widening regional support and influence of the *Kpalevorgu* god strengthens the traditional religion and guardians thereof in Malshegu (and neighboring communities) and further encourages the people to protect the sacred grove. The citizens of many nearby communities now adhere to the regulations and practices safeguarding the forest and come under the power of sanction of the *Kpalna* and other local leaders.

Concurrently, the people of Malshegu have come to derive an even greater sense of pride from their position as custodians of the *Kpalevorgu* god and his dwelling place. Villagers extend open invitations to neighboring villagers to attend the rituals honoring the fetish (despite having to feed the increasing numbers of participants). They also discuss the history and practices surrounding the *Kpalevorgu* god more openly now than before with outsiders, and

more frequently grant them permission to visit the grove.

Thus due to its growing regional significance, Malshegu's grove is being accorded protection by believers from outside the community, thereby adding to the strength of beliefs inside the village and further deterring non-believers interested in exploiting the forest resources. The *Kpalna* is confident that the strength of the villagers' and neighboring residents' belief in the *Kpalevorgu* god and their traditional religion, as well as the ancestral and modern measures of protection, will ensure the continued existence of the grove.

IV. Implications and Recommendations

The core elements of success in Malshegu's maintenance of its sacred grove have important implications for policy-makers and environment and development officers concerned with forest conservation and management in Ghana and other African nations.

Vital Connections between Religious Systems and Natural Resource Management

Throughout the world, traditional religious beliefs and practices are key to protecting and managing local resources (Rappaport 1968, 1979; McNeely and Pitt 1985). The protection of the community and its land — god's creations — including natural resources, is an integral part of many traditional indigenous religious belief systems.

Sacred groves are common in Africa and Asia (Gadgil and Vartak 1976; Guinko 1985; Messerschmidt 1985; Chandrakanth et al. 1990; Chandrakanth and Romm 1990). Most were established centuries ago as dwelling places for traditional gods and are the sites for such important sociocultural events as religious worship and festivals, burials, secret society meetings, and lifecycle rituals. Sacred groves are usually small in size, but large in number; together, they constitute an unknown but significant percentage of the remaining natural forests in West Africa that in most cases are not officially protected. In some countries, they may constitute the bulk of the remaining closed-canopy forest.

Sacred groves are one example of how traditional religious or sociocultural practices lead to environmental preservation or sound resource management. Some communities recognize sea or river gods; they protect coastal lagoons or stream headwaters by restricting water use and such activities as fishing (Ntiamoa-Baidu 1990). Others believe certain wildlife species are gods or representatives of gods; they protect these animals' habitats and do not hunt them (Akowuah et al. 1975).

Ghanaian Government Support for Sacred Groves: A Good Beginning

More than most African and other governments, Ghana has made good progress in understanding the importance of traditional religious practices in natural

resource management and in developing national and subnational policy, legislation, and appropriate actions to facilitate these local efforts. The government's long history of respecting and recognizing traditional sociocultural aspects and needs recently took a new turn when it outlined specific strategies and laws for promoting cultural traditions that help safeguard the environment, such as sacred groves. Governments of other sub-Saharan African countries and of several Asian nations as well as the development assistance community should carefully consider Ghana's policies and actions.

Early on, the 1948 National Forestry Policy in Ghana (revised in 1989 – 1990) recognized the sociocultural and religious importance of sacred groves. Within Forest Reserves, these groves remain accessible to the local people, enabling them to continue practicing their traditional religion. Even though no systematic attempt has been made to protect all sacred groves in the forest estate, the approximately 280 Forest Reserves in Ghana constitute one of the most extensive reserve systems in sub-Saharan Africa and encompass numerous sacred groves. The new Forest Policy provides for the same opportunities and also recognizes the role of trees in land use outside the gazetted permanent forest estates and ensures that forest resources are not used until provision is made for their replacement (Asibey 1989).

In 1963 – 64, the government expressed concern for the sacred fetishes, shrines, groves, and burial sites in the area slated for flooding by the Volta Dam. To avert local outcry, to enable a peaceful evacuation, and to appease the gods and ancestors, the government ensured in many cases that all necessary libations and sacrifices were performed (often by paying for them). In some cases, the fetishes were relocated, usually in government vehicles (including the helicopter of then-President Kwame Nkrumah), and new sanctuaries established.

In 1988, the government began developing a National Environmental Action Plan (NEAP) designed to "define a set of policy actions, related investments, and institutional strengthening activities to make Ghana's development strategy more environmentally sustainable" (Government of Ghana 1990). The NEAP preparation included input from the private sector and various local/international nongovernmental organizations (NGOs). It also established a process for involving rural resource users in decentralized development planning and implementation.

The NEAP reinforces public statements that sociocultural values and religious practices are indispensable elements of the institutional arrangements for managing the environment, and that environmental planning and projects must recognize the role of such traditional systems and institutions. The plan specifically calls for the promotion of those aspects of indigenous culture that promote conservation and enhancement of the environment, including sacred groves. A law currently under discussion recognizes the environmental, cultural, and scientific role of groves and other sacred sites and, if approved, will authorize traditional authorities to proclaim areas sacred and set the conditions for their protection.

The NEAP also proposes a national survey of the unreserved forests in Ghana to

examine the number, size, forest cover, and condition of sacred groves in Ghana. Currently, no reliable figures are available for forest cover outside the protected areas in Ghana. Estimates range from 2,500 to 7,500 square kilometers. It is known, however, that sacred groves are among the few areas outside forest parks and reserves where primary forest can be found, and most of the remaining forest of at least one forest type in Ghana (Southern Marginal) lies within sacred grove boundaries. (IUCN 1988; Garbrah 1989).

In general, *the contributions of traditional religious beliefs and practices, especially at the local level, are neither well known nor fully recognized by governments or the development assistance community, and the implications for policy and programming are not well understood or implemented.* Few national donor-sponsored Environmental Action Plans, Tropical Forestry Action Plans, Conservation Strategies, or equivalent country-level planning exercises specifically mention sacred groves or develop policy or program actions for improved protection (personal communication, Robert Winterbottom, 1990; see also Winterbottom, 1990; Halpin, 1990).

In sum, Ghana's efforts in recognizing religious practices as a protective force for maintaining natural resources suggest that, with concrete action to back this legal recognition, sacred natural areas may stay intact much longer. Other governments can learn from Ghana's experience.

RECOMMENDATIONS

Building on Ghana's initiative, several specific recommendations follow which will further assist planners and decision-makers working to protect natural resources in sacred and other socioculturally important sites.

Legal Government Support for Locally-managed Natural Areas

Throughout parts of Africa and Asia, sacred natural sites are facing an increasing threat as the need for forest resources grows and the strength of traditional religious beliefs declines. *Communities seeking to preserve the sacred sanctuaries of their traditional gods from potentially disruptive activities would benefit from the legal support of the government.*

In Malshegu, the strength of the traditional religion and the action of the local authorities, primarily the *Kpalna,* have ensured that the rules and practices protecting the sacred grove are obeyed and performed. The priest has no legal authority in the modern sense, but with the support of the local leaders in Malshegu and neighboring communities, he has commanded sufficient customary power over the villagers to enforce rules, organize protective practices, and punish violators to safeguard the grove.

As local traditional religious systems weaken and community leaders lose authority, as often happens when modern influences are introduced, the fetish priest also loses power over the people, especially those removed from his daily influence

(such as nonbelievers in neighboring villages). The religious rules are relaxed, the activities protecting sacred sites are performed less frequently (and less well), the forest is increasingly exposed to natural forces such as fires, and the forest resources are exploited. The grove's sanctity is violated and, eventually, the forest becomes degraded.

To compensate for such changes, *communities seeking to protect their sacred sites should be recognized and officially empowered by the government to restrict activities that threaten their groves and to take legal action against those who encroach on sacred natural sites.*

Many options exist for governments to provide communities with the legal ability to conserve and manage their natural resources. In Ghana, the newly created district assemblies are in a good position to promote sustainable development and environmental protection, including the safeguarding of sacred groves. With the release of "District Political Authority and Modalities for District Level Election" in 1987 (Government of Ghana 1987), and the signing of the Local Government Law — PNDCL 207 — in 1988 (Government of Ghana 1988), 110 district assemblies (DAs) were established as the lowest level of public administration and political authority, and elections were held in 1988 – 1989 (*see also* Government of Ghana 1983, 1989; Iddrisu 1987). DAs are "responsible for the development, improvement and management of human settlements and the environment in the District" (PNDCL 207, Section 6-3-e) and for the formulation of strategies to mobilize and use the district's human, financial, and other resources. They also have the authority to create and enforce by-laws to ensure these responsibilities are met.

Accordingly, the government of Ghana has requested that DAs provide assistance in natural resource management, including that needed to safeguard sacred groves. To coordinate district environmental matters, the Environmental Protection Council[9] (Ministry of Local Government) encourages each district assembly to develop a District Environmental Management Committee (DEMC); to assist in planning and implementing district development programs, the National Environmental Action Plan requests each village to establish a Community Environmental Committee (CEC). Among other activities, the DEMCs and CECs are to mobilize individuals and communities to protect fragile and sensitive areas, including natural forests.

District-level officials have special responsibility to work with communities on forest management issues and the protection of sacred groves. DAs are "to promote through district bye laws and education on aspects of indigenous cultural practices which promote conservation of resources and enhancement of the environment such as sacred groves" (Government of Ghana 1990, p. 95). In addition, the government has requested

9 The EPC was founded in 1974 to coordinate and advise on activities aimed at protecting natural resources and improving the quality of the environment in Ghana.

that DAs conduct surveys of available natural resources (including sacred groves), manage critical/fragile areas and species, establish anti-bushfire committees at the district and village levels, and help grant timber concessions, monitor timber extraction, license commercial charcoal burners and firewood producers, and organize environmental activities (including tree-planting).

Assembly officials should work directly with communities interested in achieving additional protection for their sacred groves. This will require that the 110 DAs be sensitive to the issues of sacred groves and well-informed of their range of potential actions for helping communities protect them.[10] Conversely, communities must be informed of how DAs can help them safeguard their sacred groves.

For communities to achieve the political legitimacy needed to safeguard their sacred groves, national laws need not be enacted nor do communities need to be given the political authority to develop their own by-laws; rather, sacred groves could be gazetted "sanctuaries" through district by-laws. Any change in the legal status of sacred groves should reinforce, rather than undermine, traditional religious beliefs and functions. Thus the legal definition of any such sanctuary would be informed by the traditional — religiously founded, if appropriate — land use system. Initially, sanctuary boundaries should be identified with assistance from the community and legally demarcated by the DA. Sanctuaries should remain accessible to believers, for example, for religious rites (as is the case with sacred groves in Ghana's Forest Reserves), and their day-to-day management would remain in the hands of the village leaders and community members. District forestry and other extension staff need not be stationed at the grove, but should be available to offer technical assistance if requested.

Ghana has already established one legal sanctuary specifically to enable two communities to protect religiously significant natural resources from outsiders. In 1975 the Nkoranza/Techiman District Council established the Boabeng/Fiema Wildlife Sanctuary. The founders of the communities of Boabeng and Fiema demarcated the local stream as the dwelling place of their god. The dense forests that covered these stream banks were home to a variety of wildlife, including several monkey species, and, through the spiritual investigations of a local religious leader, the people discovered that the monkeys were "the animals of the stream" — sons of the god. Regulations were established to protect the monkeys and their habitat; these include the prohibition of hunting, capturing, or disturbing the monkeys (Akowuah et al. 1975).

10 Some central government officials fear that decentralization as outlined in PNDCL 207 could lead to conflicts between central and local authorities. Regarding forest management, they fear that districts may seek to establish district reserves (or de-gazette national reserves) outside national policies/interests for district development purposes. In contrast, others have argued for further devolution of political authority, increased local authority, and even the state's legal empowerment of certain NGOs involved in forest management.

Despite the protection given by customary laws and traditions, the monkeys and their forest habitat suffered at the hands of hunters and others who did not believe in the local customs. To make protection more effective, the local people, working with the Ghana Wildlife Society (a local nongovernmental organization), persuaded the Nkoranza/Techiman District Council to designate the forest officially (in a by-law) as a *district* wildlife sanctuary. The Department of Game and Wildlife (DGW), with assistance from the local people, selected and surveyed the boundaries of the 260-hectare sanctuary, and posted staff to help enforce the law. The local communities now manage the sanctuary, though the DGW is available to provide technical assistance. This sanctuary has helped the community protect the sacred monkeys and their habitat; indeed, it has become home for a great variety of wildlife.

The Malshegu study reveals that, with the support of the village leaders in Malshegu and neighboring communities, the *Kpalna* has sufficient *regional* authority to successfully safeguard the forest. The Boabeng/Fiema Wildlife Sanctuary suggests that support from the district officials can also effectively serve to provide the necessary legal authority for the local leaders to protect sacred groves from non-believers interested in exploiting the forest resources. This example could be adapted to many sacred natural areas, not only elsewhere in Ghana, but in other parts of Africa and Asia. Thus *central or local government agencies should be encouraged and empowered to provide authority to communities to protect their sacred groves and other culturally important natural areas.*

Meeting Local Needs for Forest Resources; Village-Based Training in Forest Management

New policies and national legislation or district by-laws do not guarantee that sacred groves will be better protected, however. Many national parks and forest reserves throughout the world are protected on paper only. *To fortify protection, legislative actions must be enforced to deter the exploitation of protected areas and their resources, and specific activities must address the fact that human beings need those resources and should have access to them elsewhere* (McCaffrey and Landazuri 1987; WWF 1988; Kiss 1990; Wells et al. 1990). Only then can the long-term security of protected areas be possible.

The small size of most sacred groves suggests that the forest cannot sustain much use. The forest and forest resources in most sacred groves that remain intact, including Malshegu's, are used sparingly or not at all. Increased use of sacred grove resources appears to be an indication that the religious system is weakening or that resource pressures have grown severe. Too often, it has been a first step toward the degradation and eventual destruction and loss of the forest pocket. Thus *to suggest that the forest resources in sacred groves be used to a greater extent, even sustainably, rather than preserved untouched, may undermine traditional religious beliefs* — the foundation of the rules and practices that have successfully protected the forest.

To relieve the increasing pressure on sacred groves, the government and development assistance community should work toward meeting the forest resource

needs of local people. This may involve developing new sources of fuelwood and building material, and adopting alternative technologies that use resources much more effectively or not at all. In Malshegu, the people responded to the growing fuelwood shortage by establishing woodlots, first at the village level and more recently at the compound level. Other activities could include, where appropriate, increased use of agroforestry practices and fuel-efficient or alternative energy stoves.

Efforts should also be made to develop nonreligious incentives to protect sacred groves as additional incentives for local people to protect the sacred groves. For example, community members should be educated on the ecological values, functions, and needs of intact forests. Lessons should emphasize those functions of the forest that provide important benefits to the individual farmers and to the community in general. Such knowledge might also encourage local people to safeguard remaining pockets of natural forest on their lands other than sacred groves and to become more involved in tree-planting.

By the same token, sacred groves could serve as sites for educating government extension officers and other natural resource professionals on the importance of local religion, its relationship to natural resource management, and the traditional religious rules and practices that now protect the groves, many of which have clear parallels in modern methods of wildlife protection and management. Some sacred groves could become occasional training sites — living classrooms — not only for villagers, including school children, but also for forestry extension officers, and perhaps even professional foresters and wildlife ecologists. Such understanding can help ensure extension services are more socioculturally appropriate and thereby improve the delivery of extension services.

Undisturbed sacred groves represent miniature forest ecosystems; they also offer opportunities for learning more about forest ecology, including research on the economic and medical importance of indigenous fauna and flora species. In Ghana, some botanical research has been conducted in sacred groves (Lieberman 1979, 1982; Lieberman, D., and M. Lieberman 1984; Lieberman, M., and D. Lieberman 1986), but considerable opportunities for academic and applied fieldwork remain.

Local, district, and central governments have the opportunity to use community-level initiative and religious faith in protecting remaining natural areas. They also have the responsibility.

V. Conclusions

As human populations, livestock herds, and foreign debts grow, people are increasingly looking for ways to secure fuelwood and other forest products, thus perhaps endangering the locally-protected sacred groves that remain. As the coverage of viable forest declines in sub-Saharan Africa, governments are taking notice of the methods — including local-level initiatives — that appear to preserve and manage the forests. Malshegu's long-lasting success in this endeavor may prove an excellent example.

The principal driving forces behind Malshegu's effective protection of its sacred grove include a strong religious belief in the grove as the sanctuary of the local god — in good measure a result of the effectiveness of the religious leader, the rules and practices established centuries ago to guide people in their use of the forest and its resources, and the growing regional importance of the sanctuary as other local sacred groves become degraded or lost. These elements, drawn out in this case study research, lead to policy implications that are supported by research from sacred groves elsewhere in Africa and Asia, and by studies of other sacred natural areas. These implications include:

- government recognition, both at the national and subnational level, of the importance of effective local-level natural resource management can greatly increase the ability of communities to safeguard their natural resources;

- villages seeking to protect sacred sites threatened by non-believers need the support and backing of the government for the legal authority to implement and enforce traditional resource management strategies and practices;

- community initiatives in resource management can benefit from the timely input of technical expertise and assistance from extension officials, particularly with regard to improved management practices and techniques;

- government should work with villagers to develop more efficient means of forest resource utilization and to identify alternative sources of these resources; and

- villagers would benefit from environmental education, including

training to increase the awareness of local resource management benefits with direct consequences and implications to their social and economic welfare.

The government of Ghana's recognition of the importance of traditional religious beliefs in local-level natural resource management and its recent policy, legislative, and programming actions to further empower communities to take greater control of their resources have the potential to lead to improved local initiatives in environmental protection and management. Other governments and international development assistance agencies concerned with natural resource management may learn from Ghana's example.

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