

People and Forests: a Case Study from Bénin, West Africa

By

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Abstract:

The purpose of this work is to demonstrate how sacred forests in Benin, West Africa, contribute to forest conservation. Local use of natural resources is well-practiced in maintaining wooded space; the same use of those resources allows for modifications in the landscape as the community requires through ritual processes. Sacred groves and the biodiversity they harbor expand and contract in relation to communication between the people and spiritual entities. The framework employed contextualizes the case study of sacred forests in Athiémé, Bénin, from experiences as a Peace Corps Volunteer in the social, geologic, historic, and religious aspects of the society. This position allows for further exploration in the field of forestry on themes of patch dynamics and source-sinks, and sacred groves' roles in biodiversity of non-government regulated lands.

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Contents:

Introduction.....	1
Overview: Situating the Reader in Bénin.....	
United States Peace Corps: Environmental Action Sector	3
People	5
Geography	7
Sacred forests in history.....	
Pre-colonial	11
Colonial	15
Post-Colonial.....	19
Current.....	23
Structuration Theory	31
Vodoun of Sacred Forests.....	35
The Sanctity of the Forests.....	37
Studies in Biodiversity	51
Conclusion	62
Addenda	68
Addendum A: History of Athiémé.....	68
Addendum B: Video contents	72
<i>Angiwedji</i>	72
<i>Zounhoué</i>	72
<i>Goudon</i>	72
<i>Condji-Ougba</i>	72
<i>Dedekpoé</i>	73
Addendum C: Schematic plan of Athiémé and Reforestation Project forests	74
Addendum D: <i>fâ</i> consultation	76
Addendum E: chart of surviving trees.....	77
Works Cited	78
Related works:	80

Index of figures:

Figure 1. Levels of spiritual interaction in towns and villages in relation to outlying areas. (Drawn by Erika Kraus, some concepts reiterated in Sharpe 1998)	17
Figure 2. Cycle of community membership. (Figure drawn by Erika Kraus, based on lectures from Dr. Peter Ukpokodu (2011) and text of John S. Mbiti (1989).	47
Figure 3. Plan of Athiémé, town center	74
Figure 4. Plan of Athiémé Reforestation Project forests.	75

Introduction

The purpose of this work is to demonstrate how sacred forests in Benin, West Africa, contribute to forest conservation. Sacred forests are more than special groups of trees; they play a role in perpetuating social institutions, values, and biodiversity in the region. To accurately consider sacred forests in terms of resource conservation, sites must be understood in the context of the societies that sanctify them –studies should recognize why the trees are sanctified. Once the reasons for the sacred grove’s existence are extrapolated, the motivations and perceptions of biodiversity and resource conservation can be approached through relevant lenses.

Deforestation due to human pressure is common knowledge in the field of conservation. International attention to salvage the remaining traces of natural vegetation has ultimately removed local populations from the presence of the natural resources upon which they rely. However, research that incorporates studies on the context of local people provides grounds to argue that indigenous use is dynamic, neither harmful nor symbiotic. Traditional, local use of natural resources is well-practiced in maintaining wooded space; the same use of those resources allows for modifications in the landscape as the community requires through ritual processes. Through this type of non-governmentally administered management, sacred groves and the biodiversity they harbor expand and contract in relation to communication between the people and spiritual entities.

This work is based on my experiences as a Peace Corps Volunteer in Athiémé, a small town on the Mono River in the southwest of Bénin. The framework is to contextualize the case study of sacred forests in Athiémé, Bénin, in the social, geologic, historic, and religious aspects of the society. Having been trained in biology, I rely on a narrative-descriptive form of writing

rather than a methodological framework from anthropology, sociology, history, or any other social science.

The majority of the evidence for the argument in this work comes from first-hand knowledge during my tenure in Bénin when I lived and worked in Athiémé for three years. In particular, I utilize the experiences from two projects: a collection of the history of Athiémé from residents of the town, and the dialogue captured in a video of a reforestation project. I also rely on literature to reinforce the examples from first-hand experience. These include: the collection of articles by Michael Sheridan and Celia Nyamweru called *African Sacred Groves: Ecological Dynamics and Social Change* (2008), the book *Reframing Deforestation; Global analyses and local realities: studies in West Africa* (1998) by James Fairhead and Melissa Leach, and publications from biologists who work in the universities in Togo and Bénin, respectively.

A brief introduction to the human and geographic history situates the reader in the nation. After this overview, the next section discusses the pre-colonial, colonial, and post-colonial elements of Beninese history that relate to sacred groves. A short discussion of Anthony Giddens' Structuration Theory demonstrates the sociological processes that create and maintain the groves. Following that, the philosophy of the sanctification of wooded areas describes some of the religious practices in Athiémé. The final section describes the present biodiversity of the forests, and communicates the importance of respecting endogenous practices. Such information positions this case study from south-west Bénin for further exploration in the field of forestry on themes of patch dynamics and source-sinks, and sacred groves' roles in biodiversity of non-government regulated lands.

Overview: Situating the Reader in Bénin

United States Peace Corps: Environmental Action Sector

I joined the United States Peace Corps as an Environmental Action Volunteer in July, 2005, having just finished undergraduate studies in Biology and French in May of the same year. I wanted to experience a different way of life and develop my French language ability. I was unfamiliar with the West African coast until some months before I was assigned there by Peace Corps Headquarters. As an Environmental Volunteer, I was introduced to the phenomenon of the Dahomey Gap and its effect on the cultivation cycle in Bénin¹. I learned the names and typical usages of common tree species, and studied the most prevalent environmental problems: soil erosion, misuse of chemical fertilizer, decreased fallow rotation, etc.

I lived with a warm and accommodating host family, people with whom I continue regular communication. This family provided me with a comfortable living arrangement and all the food I could ever eat –they introduced me to the patterns and priorities of Beninese people, including eating and sleeping schedules and family ties. I lived with this family for eleven weeks before graduating to full Volunteer status. I then moved to Athiémé where I was to live alone and work for the following three years.

I collaborated with a number of residents of Athiémé, but two organizations occupied most of my time: the CLAC, or *Centre de la Lecture et l'Animation Culturelle*, or library and cultural center, and a non-governmental organization called As.P.E.L. (*l'Association pour la*

¹ This climate phenomena benefits the agricultural cycle in Benin by producing at least two harvests per year, at the end of two rainy seasons, whereas elsewhere along the coast and dense rainforest, there is only time for one cultivation cycle. The air currents at this point on the coastline also bring the Harmattan winds, which are the dry, dust-filled air from the Sahara. These winds, when in full presence, block the sun and drastically reduce the humidity and air temperature of Bénin, effectively creating winter. (Personal communication with residents of Athiémé informed the author that one year, icy-rain fell, causing destruction of thatch roofs and demanding cold weather-wear for the general population that was not typically available.)

Protection de l'Environnement et des Localités –the Association for Environmental and Areas Protection). With the librarian during the summer months of 2007, I organized school-aged children to collect historical information from the elders about Athiémé. Although this collection was compiled with the intent to print it, the project was neglected because of a lack of resources. However, the draft form of the history is applied to this thesis, and is available in addendum A.

As.P.E.L. maintained a large vegetable garden and a tree nursery as a means of income for the group. After working with the members regularly for some time, I assisted in a number of environmental projects including rudimentary waste management and environmental education. Another project with As.P.E.L. that captured my interests the most, and has motivated this study, was the project called *Reboisons les forêts sacrées*, or Reforesting Sacred Groves. This project happened during the early months of 2007, and a full version of the video's contents can be found in addendum B.

The president of the NGO, Ghislain Zinsou, conceived the Reforestation Project and directed the details. I accompanied him throughout the project, including at the initial meetings with the religious leaders of the associated sacred forests. Five leaders accepted to participate in the project, one of whom was the *chef féticheur*, or religious leader, of the entire Mono state. The NGO members prepared 2000 trees of eight different species, allowing 500 saplings per forest. Zinsou was remarkably knowledgeable about the germination of these eight indigenous tree species. Typically, tree nurseries supply buyers for large teak and acacia plantations, two species that sell readily for construction. By allowing indigenous species to occupy the space usually committed to saleable goods, his contribution in terms of knowledge and resources was unique and important.

The As.P.E.L. members nursed the seedlings until about a week before 1 June 2007, the national Tree Day. The participating communities demonstrated their commitment to the project by fetching the saplings and planting them. On the holiday itself, the members of As.P.E.L. and invited authorities from the forestry domain and the local government toured the site at Angiwedji, the nearest site to Athiémé, and where the community was actively planting. Due to time constraints, this was the only forest toured that day. The members of this tour group were invited again within two weeks to complete the tour. The video cameraman accompanied both days, producing the source that I reference repeatedly in this study. At the time of the recording (in 2007), I did not have a Master's thesis in mind and was not collecting data for an academic research project; however, re-visiting the video for this academic work has made it an essential resource.

People

As a Peace Corps Volunteer in Bénin, I heard oral histories of the origins of people in the Mono River region. This river begins in the Atacora Mountains of north-west Bénin, and forms the border with Togo in the southern half of the nation for about 60 miles. The Adja in the Couffo, the northern part of the Mono state of Bénin, reported that they are the direct descendants of the mythical coupling between a princess and a panther in the town of Tado, in today's Togo. They attest that all other people are ethnically derived from them and their language. Conversely, the predominant Fon group of southern Bénin related a similar story of origin but reversed the names, claiming that the Fon came first.

The Volta and Ouémé waterways today form the Ghana-Togo and Bénin-Nigeria borders, respectively. The distance between the mouths of the rivers is about 400 kilometers. The scholar A. Asiwaju forms a fair view of the people between the Volta and the Ouémé Rivers through a

combination of linguistic studies, oral histories, and hindsight-projections of Beninese society from 20th century sources (1979, p. 16). Although there are many languages throughout this region, the majority of them are classified as *Gbe* (Nicolau-Parés, 2005, p. 71). Furthermore, the people refer to a common point of origin for their population: Tado, in today's Togo. Consequently, Asiwaju makes no distinction between the ethnicities of Gbe languages, and calls all of the people within the region the "Adja" (1979, p. 15).

Three distinct situations in the mid- to late-1700s affected the direction of the peopling of the region. First, the Kingdom of Dahomey, whose heart was Abomey in central Bénin, was a tributary to the Oyo of western Nigeria. The Fon people of Dahomey were not satisfied to be subsidiaries, and consequently they often revolted. This later caused a weak point in resistance to the French because these people, affected by the Dahomey-Oyo wars near the Ouémé River, sought French protection, effectively welcoming their future colonizers to the territory.

Second, European trade became increasingly lucrative. Because the Kingdom of Dahomey was land-locked in Abomey, the Dahomey King Agadja extended the territory of the kingdom to the coast where they could employ direct control over the port in Ouidah by 1727 (de-Souza, 2000). This disrupted the kingdoms of Allada and Ouidah, respectively, to the south. Once the strategic port-position in Ouidah was won, the Fon raided the countryside in quest of captives for human trade.

Hence the third important motivator for human displacement: refugees. An example of the unrest of the slave trade era persists in Bénin today. The village of Ganvié, Bénin, on Lake Nokoué north of Cotonou, is a well-known tourist site because the people reside in homes built directly over water. The legendary origin of this community is that the people escaped the Fon

by adapting to life on the lake. For religious reasons, the Fon could not approach large bodies of water (Asiwaju, 1979). Ute Siebert (2008) provides another example in her study in Bassila, Bénin (further explained in Structuration, p. 31). The community here accredits their location in the forest (considered sacred) to its protection as a fort, defending against the captive-hunting Fon.

This same forest near Bassila buffered the inhabitants from the colonists, as well (Siebert, 2008). The arrival of Europeans as residents, eventually becoming the colonial authority in Bénin, had an impact on sacred forests still visible today. French colonial administration imposed significantly different land ownership practices and a severe disapproval of the native religion. Their methods thwarted the endemic social institutions that the indigenes employed. Colonial disruption in West African society was monumentally comprehensive, having affected languages, education systems, economy, government, and religious worship.

The motivations for people in history to have settled in certain areas contribute to the story of sacred groves. Strife provokes people to live in areas that might otherwise have been considered uninhabitable. Many of the people along the Mono River likely live there now because of political pressures in the 17th and 18th centuries; however, climate and environmental changes happened that supported human life previous to those politics. Archaeological and sedimentary evidence is important in developing the history of forests and their apparently human-induced deforestation. The following section explains some of the geography of Bénin and surrounding areas.

Geography

The Republic of Bénin is located on the sub-Saharan west coast of Africa about ten degrees north of the equator. The land borders of Bénin are Togo, Burkina Faso, Niger, and

Nigeria. The Atlantic Ocean is the southernmost border of this nation. The southwest trade winds are nearly parallel with the coast at this point in the Bight of Benin (Booth, 1958, p. 60) (this “bight” is a further retracted part of the Gulf of Guinea); the confluence of wind and water currents creates a unique climatic condition at this point called the Dahomey Gap. This forms a barrier that separates the more humid forests to the east and west, respectively called the Guinea and Congo forest blocks. There are, consequently, three regions whose floral and faunal diversity have evolved *excommunicado* from each other: the forests on either side of the Gap, and within the Gap itself.

The Dahomey Gap opened in the late Holocene period, about 4000 years ago (Salzmann & Hoelzmann, 2005; Asiwaju, 1979). The division of dense forest in this region of sub-Saharan Africa was caused by global shifts; due to the wind and air currents at this particular location along the coast, the area now known as Bénin experienced a higher degree of climate change (Asiwaju, 1979). Over the course of these 4000 years, the amount of rainfall increased and decreased to the extent that the forests expanded and contracted accordingly. Depending on the duration of the especially rainy or the especially dry periods, the forests grew or shrunk. For this reason, there are fingers of rainforest present in today’s Bénin (Asiwaju, 1979).

Knowledge of the Dahomey Gap and its influence on the natural environment in Benin is critical for forestry and conservation work. Some studies, such as A.F.C. Ryder (1988), posit that the expanding range of the oil palm was due to people who cleared the forests, using the slash-and-burn method to make space for their habitation. However, Salzmann’s (2005) findings present evidence that contradict this presumption. Salzmann (2005) conducted such pollen and sedimentary research at Lake Sélé in south-central Bénin whose results indicate that the lack of forest cover in this West African nation is largely climatically induced.

Sediment core samples and pollen analyses reveal climatic, rather than human, causes to the creation of the Gap. Compared with results of similar studies in nearby nations, the climate was the cause for environmental change that opened the forests to quick-growing plants such as the oil palm. The oil palm tree, today an essential element to daily life in Bénin for food, drink, cooking fuel, shade, construction, etc., is a highly adaptive species that is one of the first to occupy an opening in dense forest (Salzmann & Hoelzmann, 2005, p. 197). The extent to which the tree's different parts are incorporated into daily life supports the idea that people would have followed the oil palm. Because of this species' propagation patterns, scientists designate it as a 'pioneer' plant –one that quickly inhabits open space.

The natural environment is better understood with the geographic details of the Dahomey Gap as discussed above. People can and do cause great change on the natural landscape, but this change can be negative and positive; at least the initial deforestation of Bénin was caused by intense weather fluctuations over thousands of years. Indeed, two proficient scholars James Fairhead and Melissa Leach (1996; 1998; 2002) publish repeatedly about the misconstrual of deforestation in West Africa. Enlightened with the knowledge that the Beninese have not wreaked extensive desertification of their land in the past 100 years, the current objectives of national forestry and conservation policy are regarded in a different light. From this point of view, the presence of forests within the Dahomey Gap questions the effectiveness of current policy that removes people from their land, accusing them of severe forest destruction.

The content of the following section considers the religious and political fluctuations of Bénin before, during, and after colonization. This section draws upon the history given by the Athiémé residents in 2007 in coordination with CLAC. Combined with academic literature of the history of Bénin, this section creates a broader point to view sacred forests. Although the usages

of the indigenous trees as sites of worship, construction materials, and medicinal and food resources are consistent over time, their connotation has changed with the political weather.

I refer to the speakers by their respectful titles, often the name of their work. This includes CERPA, or the Regional Center for Agricultural Promotion, PADMOC, or the Mono and Couffo State Rural Development Project Support, the *chef féticheur* or Vodoun religious authority for the Mono State, and the videographer.

Bénin has been known by a number of titles: The French Colony of Dahomey, the People's Republic of Dahomey, and the Republic of Dahomey. With the adoption of democracy, the nation changed its name to the Republic of Bénin, named after the great historic kingdom of today's Benin City, Nigeria, in order to promote national unity. For simplicity, I maintain the use of "Bénin" and "Beninese" throughout this work, regardless of the time period under discussion.

I arrived in Athiémé as a naïve and eager Peace Corps Volunteer. Although familiar with general concepts of Beninese life, I lacked the depth and details such as those available in this work. Text-book education and then-common knowledge of equatorial forest systems in Africa prepared me for human-caused deforestation in Bénin. I was fascinated by the Reforestation Project because of the propagation of native tree species and the medicinal plants and spiritual sites for planting –apparently a cure for deforestation. This project motivated my graduate level studies once returned to the States; however, when studied in context through peer-reviewed academic work, sacred forests became less a panacea for natural resource conservation.

Sacred forests in history

Athiémé was once a bustling colonial regional capital, evidenced by a train's railroad bed, storied-buildings of colonial architecture and significantly more infrastructure than other villages within miles. An entire neighborhood behind the mayoral office consisted of colonial-era homes, and was called "yovocomé", which means "white people neighborhood." I lived in the French colonial doctor's home, complete with carriage house and servants' quarters, two bathrooms (though far degraded), a well, and three running water spigots. Athiémé benefited from a functioning water tower, electricity, and numerous structures. A rural island of 'western' amenities, the town projected a phantasmal image of having greatly fallen.

Access to Athiémé was via a three-mile stretch of dirt road, surrounded by agricultural activity, and the Mono River by dug-out canoe, or *pirogue* –a bridge that existed during the colonial period had long ago crumbled. Newer construction, built around the colonial remains, was both in worked-earth and cement. Like preceding Volunteers in Athiémé, I sensed dismay at the apparent loss portrayed in this image; yet that emotion morphs to curiosity and even admirable hope when informed of the events long preceding my acquaintance with the town and the people.

Pre-colonial

And our forefathers, our grandparents, had the capacity of geomancy [form of divination], that is to say, the *fâ* that is thrown. [Speaks from point of view of the forefathers] But where does the divinity live? ... they look, they look, they say [speaking for forefathers] the divinity lives in this forest, from this point. This forest becomes venerated, sacred. –CERPA (Addendum B)

Athiémé was founded by a refugee from intertribal wars in the Kingdom of Dahomey in the 17th century. His name was Adity Donou, and he came from Toffo, near the Kingdom of Allada. His nephew, Akoubalaty, arrived some time later from Aklakou, Togo. Donou

established *Adanlokpé*, or “where the anger stops” in Kotafon, in reference to the unrest and pursuit of people for the slave trade.

The history provided by Athiémé residents relates that this riverside location was a refuge for human as well as animal life; the people of Athiémé thrived on the produce provided from the riparian forest, fish from the river, and rich flood-plain soil. Select portions of the forest were used for training Vodoun practitioners in the languages and rites of the divinities. According to this history, Adity Donou, Akoubalaty, their families and followers lived in a society organized by clan. A head of family directed each clan, and a chief led the town with his council (Athiémé was not a kingdom).

People did not own land; instead, land was distributed amongst the population through clan and village/kingdom hierarchies. Neef describes the land tenure and field rotation practices before colonial, western thought changed them. He says that land is considered ancestral heritage and was not sold, but distributed to people according to the land priest, or *chef de terre* (1994, pp. 146-147). The cultivated land was on a fallow rotation schedule; that is, after a time of agricultural production, the field would be left bare for a number of years, each year regaining nutrients from the pioneering species that quickly took over open soil. This was generally practiced on a seven-year cycle. The fallow fields would be cleared by fire before their next turn in cultivation (Neef & Heidhues, 1994, p. 147).

The scholars G. Stride and C. Ifeka report a history nearly parallel to that of Athiémé. The establishment of the Adja people, from Tado, Togo, begins with Agassu, the progenitor of the mystical coupling between a Tado princess and a panther (Stride & Ifeka, 1971, p. 276). Agassu left Tado because of political reasons and established his followers into the great kingdom of Allada (known at the time of the European arrival as Great Ardra). The historian J.D.

Fage attributes the split within Allada and the origins of the Dahomey from a familial dispute (1969, p. 103). The cause for dispute, Fage surmises, could have been on the subject of the degree of warmth with which to receive the Europeans. The losers would have been those who did not encourage international trade; these dissenters established the Dahomey Kingdom in Abomey to the north (ibid.). Allada remained the great kingdom of the region, and was the point of contact with the Europeans.

Fage (1969) relates that Dahomey eventually fought and gained control of the kingdom of Allada by 1734 (seven-year discrepancy with de-Souza's date, p. 7), temporarily halting the trade in slaves. War captives were an integral element of the indigenous social hierarchy, and King Agaja from Abomey could not agree to the sale of the majority of Dahomey's economic and military members. The momentary stop in slave trade was further supported by the European half of the commerce, who had previously dealt with the king of Allada, and could not easily transition to the newly imposed empire. Without the lucrative slave trade, however, Dahomey could not acquire highly desirable European goods (china, cloth, etc., as in the museum at Abomey). By 1740, the Dahomey King Tegbesu governed a kingdom swimming in slave trade economy (Fage, 1969, p. 103).

The refugees from the Dahomey take-over of Allada settled in Little Ardra, what is now Porto Novo, Bénin. At that time, this settlement was considered part of the Oyo Kingdom (Fage, 1969, p. 104). The Oyo to the east continued to exact allegiance tolls throughout these years of political change between Allada and Dahomey. The familial disputes and frequent violence between the nations ended ultimately in the late 19th century because the people of Little Ardra welcomed the French military strength. This agreement at Little Ardra essentially provided a point of entry for the French occupation of the land.

According to both the residents' history of Athiémé and the members of the Reforestation tour, the riparian vegetation that had attracted the town's founders disappeared in connection to the foreigners' appearance. By the time the French entered Athiémé via the Mono River, the slave trade had been abolished through the Anglo-Netherlands treaty, although the United States continued in trade until 1865 (Fage, 1969). Therefore the French were not entering as slave traders, but as well-intentioned missionaries ignorant of the profound religious practices in Vodoun.

The missionaries in Athiémé acquired land for a church built along the river where the Mono floods to this day. This land may have been offered to the missionaries in hopes that the spiritual power of Vodoun would discourage their presence (see Chinua Achebe's *Things Fall Apart*), or perhaps was simply acquired by the French as they encroached upon indigenous authority. The Catholic mission has persisted, however, and the institution still offers health care and formal education in Athiémé. Athiémé residents, from the time previous to independence, recall the relentless training in those schools to adopt French lifestyles, such as speaking French and practicing Catholicism, most obviously. This forced change on Vodoun and its practice. As of 2008 when I completed my Peace Corps contract, there was no sacred grove for the town of Athiémé, although *legbas*, often considered spiritual protection for a location, remained in some corners. (A map of Athiémé with locations and photos of the *legbas* is available in addendum C.)

Christianity was not the first religion to forcibly influence the indigenous religious practices. The coming of Islam to the region of Bornu by the 11th century had a profound effect on the traditional religions. In the UNESCO publication of the General History of Africa, Fasi (1988) reports that the complete attempt to convert the Hausa region to Islam included "...razing to the ground the sacred woods of animists, and building mosques in their place (p. 47)." The

spread of Islam continued by calm and by force through the 19th century, constantly in quest of purifying African Muslims of their “traditionalistic” worship. Bornu, in today’s Nigeria, is not very near Athiémé. The Muslim community in southwest Bénin did not enter into dialogue about the destruction of forests in front of me; yet the urgent separation of Islam from indigenous religion is prevalent in the history of Islam in Africa and could have affected Vodoun in Athiémé in some way (also, see Juhé-Beaulaton 2006).

A simplistic version of pre-colonial society related to sacred forests could be portrayed as this: a system that provided food, construction materials, and medicinal plants to any member of society that sought the proper channels for access to those resources. This would have accommodated all members of society, especially women who would have worked their husband’s, father’s, or brother’s fields. Women’s auxiliary position in agricultural roles would have been somewhat compensated by their ability to access other land such as sacred groves. This would have been particularly important during the dry season, when crop stockpiles had dwindled (Akouehou, 2003).

Colonial

Bénin became an official colony of France in June of 1894, but Athiémé saw French missionary populations well before then. Between 1885 and 1891, foreigners discovered Athiémé and met Akolèno, the chief of Athiémé in those times. Interestingly, the name of the town is not also the name of the original neighborhood because of the arrival of the French: Adity Donou first settled in the area, and his nephew Akoubalaty followed him, settling in the *samba* trees (*athié*) nearer the Mono River. When the French arrived via the river, they encountered the nephew first, who claimed to live in the *samba* trees –*Athiémé*. After this initial meeting, the outsiders came to know Donou in Adanlokpé, but by then the place was

recognized by the French as Athiémé, and has since been the burr in the boots of the residents of the Adanlokpé neighborhood.

The foreigners gained permanent position in Athiémé society after aiding Athiémé residents in repelling a strong Fon invasion in 1891. Without the help of the foreigners, the population of the Mono region would have become part of the Kingdom of Dahomey as prisoners destined for slavery. The foreigners' critical assistance allowed them to be established first as residents, changing the mode of house construction from worked-earth in round to buildings of cement in square. Footpaths were widened and reinforced to accommodate vehicles. The French then grew to call themselves chiefs of post and commandants of the Mono region and state by 1943. Important commerce such as CFAO², J. Fabre, Valla and Richard, Cica, John Holt, and John Walden preoccupied the entire population. A railroad was constructed between Athiémé and Grand Popo, on the ocean, to facilitate the transport of such merchandise at the beginning of the 20th century (as indicated on the map in addendum C).

Because of the fallow field rotation schedule, land was covered in different amounts of brush than others, some appearing totally unoccupied to foreigners. Despite its appearance, the land far beyond the village center was not considered useless. In the same way that Adity Donou arrived in Athiémé, the spirits' domains could be entered when necessary, and specialists in divine language could begin to negotiate with the yet-unfamiliar gods. This allowed people access to that land without payment or contract between humans.

Figure 1, below, represents in simplified form the structure of a village and the spiritual entities. The typical construction of a village or society centers on the human habitation, as in

² Since 1887, Compagnie Française de l'Afrique Occidentale, or the West African French Company, is still in existence but not in Athiémé.

level 1. Level 2 consists of fallow and cultivated fields, and other areas not encountered on a daily basis as in the village. The third level represents land still considered within the people's known region, but rarely visited by regular members of the population. Level 3 would be reserved for special religious use, such as religious training in divinities' languages and rituals, or as Adity Donou demonstrated, for establishing a community in need. Through proper negotiation, this land could also be used in expanding the size of the community for more agricultural or residential land.

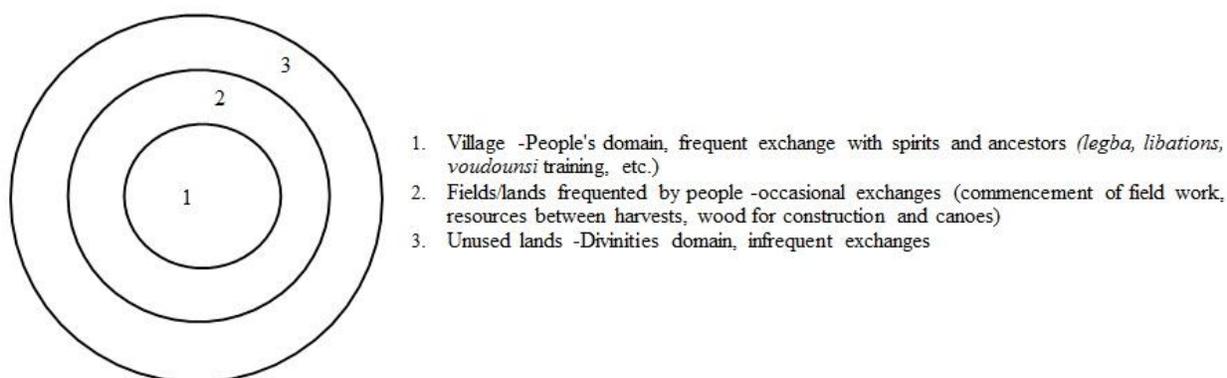


Figure 1. Levels of spiritual interaction in towns and villages in relation to outlying areas. (Drawn by Erika Kraus, some concepts reiterated in Sharpe 1998)

The Colonial Service of Agriculture and Forests in French West Africa began in 1900 (Ribot, 2001). The federal regulation of the land altered how the general public had access to communal land. From this point on, the colonialists and their forest service had rights to the commercial wood of "high value," reserving the right to harvest en masse the highly valuable construction wood for exportation and colonial financial gain (ibid; p. 5). The local population was accorded usufruct rights, only capable of taking needed items on a subsistence basis without visibly altering the land. The indigenes were ex-communicated from using the resources for their own benefit. Places where people had previously been able to extract needed resources through means of negotiation were now strictly off-limits.

Observations from the pre-colonial and colonial era have influenced subsequent studies in biological sciences such as botany, forestry, and especially the effects of deforestation. James Fairhead and Melissa Leach (1998) analyzed some French records of the Beninese landscape from the early 1900s. Using the reports from Chevalier and Aubréville from 1909 and 1937, respectively, Fairhead and Leach (1998) bring forth the biases of the data sources typically used to support current deforestation theories.

The scholars employ a map from 1893 that details the vegetative cover of southern Bénin. The majority of the land indicated in this map is oil palm brush, followed by agricultural land, and then forest islands. Just after the turn of the 20th century, Chevalier in 1909, and Aubréville in 1937, indicated nearly the same amount of forest cover in the same places visited. They both say that these noted forested areas are all that remained of extensive dense forests due to human-caused deforestation. Fairhead and Leach point out that according to the sources from the map of 1893 to the record of Aubréville in 1937, a time period of 40 years, the vegetation had remained mostly intact (1998, p. 100).

Chevalier and Aubréville both profess opinions that at least 100 years previous to their observations there had been extensive dense forest. They attribute the loss of this forest cover to the ignorance of autochthones. Part of their judgment is nearly accurate –the land, in recent *geologic* history during the Holocene, had been covered in forest. The nature of the climatic phenomenon of the Dahomey Gap explains how such expansion and retraction of dense tropical forest was influenced over thousands of years. Chevalier and Aubréville accredit too much of the change to anthropologic pressure –in this they are inaccurate.

Post-Colonial

...it's the revolution that cut the trees without thought in the sacred forests, because they wanted to ridicule, or give a different connotation to the sacred forests. So they destroyed it. –Videographer

In its colonial glory of the 1900s, the Athiémé region had 100,000 inhabitants; today's count is about 20,000 people. Athiémé was named for the white wood of the *samba* trees that covered the Mono River basin; yet few of them remain. This change in scenery has affected the occupations of the residents; the riparian forest that previously provided game and fish aplenty now lacks the trees and habitat for those animals. The animal with the most protection is the python because of its sanctified position in the *dan* sect of Vodoun (see p. 35).

The Nangbeto Dam on the Mono River, completed as a partnership between Bénin and Togo in 1987, caused significant change in the nature of the river. The turbines require a large quantity of water; for this reason, the technology interferes with the length of the period of the floods, and the force and amount of water available during the dry season. Along with these changes, the dam blocks the passage of migrating fish and other hydrophilic creatures. These changes in habitat have handicapped the previous lifestyle satisfied by hunting, fishing, and some agriculture.

Men and women have public positions in schools, local government, and the *gendarmes*, or local militia. Other people work in non-governmental organizations or in services such as hairstyling or as a seamstress or tailor. Men make some money as moto-taxi drivers, the most common means of transportation nowadays, while other men drive car- or mini-bus taxis or trucks for hauling merchandise. Some work in commerce; although the major commercial businesses from Athiémé's heyday are gone, there are small shops for basic foodstuffs and stationary supplies, resold from the major trade centers of Cotonou, Bénin, and Lomé, Togo. The

only trace of the train that once conducted goods along this same route is the rail line bed as an oft-frequented dirt road, a “back way” to the beach in Grand Popo.

Languages contribute to the unique atmosphere of Athiémé. In general, agricultural-based communities rely on native languages because they are removed from the commercial, “modern” lifestyle. The presence of oft-spoken French indicates a community that has a population of western-educated people, typically men and school children. Despite its rural location, Athiémé residents readily used French on many levels of society, with Guin, Kotafon, Fon, Adja, and Waatchi as the common native languages in the region.

Athiémé lost its position as capital of the Mono/Couffo region and state in 1960 to Lokossa, about seven kilometers north, because of a fire in the mayoral building that destroyed governmental records. The periodic floods that cut off access to Athiémé also contributed to the displacement of the capital. The remaining administration in Athiémé is that of the *commune*, or county level, one of 77 others throughout the nation of Bénin.

CERPA states that the elders of the community divined the presence of divinities in the wooded groves; therefore the protection from the trees was both spiritual and physical. In the Bassila region, the elders communicated with the spirits of the forest when in need (Siebert, 2008). These Vodoun rites and rituals, whose origins date back centuries, link the human with the spiritual populations and inspire great confidence from the general public. The authority of the Vodoun leaders has been castigated and undermined throughout Beninese political history in efforts to assert foreign power. The French Catholic Missionaries played an important role beginning in the late 19th century, but the Beninese independent government also contributed to the destruction of natural resources.

Bénin became independent in August, 1960. Until the rise to power of the Marxist dictator Mathieu Kérékou in 1972, the nation suffered many years of political instability and numerous coup d'états (although the nation avoided the violence that has tormented many other African nations). Many nations on the continent of Africa adopted Marxism at the time of their independence, most of which was during the 1950s and the 'Western' world's Cold War. After more than ten years of inconsistent national leadership, communism was likely adopted to quickly provide structure and discipline. Also, international recognition for the independent nation of Bénin came from the Communist party of France (pers. comm.) There are many possible reasons for Marxism and subsequent discussions on the gains and losses of such rule, but this work will not delve that deeply into politics. However, Kérékou's evolving relationship between his state power and the political power of local religious leaders throughout the country can be traced through the sacred groves.

Marxism in general is averse to any kind of religious activity because in theory, religion does not propel the socio-economic development of a nation (Tall, 1995). In 1976, Kérékou elicited a nation-wide ordinance that forbade traditional distribution of land and impeded the functioning of all religious organizations, especially any form of sorcery, as Vodoun was generally described (Tall, 1995, p. 197). Catholic institutions that provided the highest quality French education were drastically reduced in social activity. Marxist rule in Bénin sought to centralize power in the dictator, usurping the leadership from local, traditional people.

Utilizing timbered lands served Kérékou's needs for power through economic gain and fear. The colonial practice of exporting wood continued after independence, and the sacred groves were destroyed in order to demoralize the people who participated in that form of worship. Tall compares this period in the history of Bénin as a time similar to the Spanish

Inquisition, wherein a slight annoyance with a neighbor could produce a full-scale witch hunt (1995, p. 197). This “witch hunt” extended beyond politicians to anyone stereotypically associated with sorcery, including women and the elderly (Kraus & Reid, 2010, p. 22). This stressful political and spiritual atmosphere manifested with a 1977 coup d’état attempt, which further encouraged Kérékou to persist in exterminating native religious authority.

In 1982, the Beninese personage of Bernard Gantin was installed as a Catholic Cardinal in Rome, which placed the oppression of Catholicism in Bénin directly under the eye of the Holy See. Pope John Paul II visited Bénin in the mid-80s. By this time, Kérékou had relaxed his stranglehold on religious activity, evidenced by supplicating the religious leaders during a severe drought—he requested the Vodoun chief at Ouidah to pray for rain (Tall, 1995, p. 198). By 1981, Bénin transitioned in relative political calm (without bloodshed) to democracy.

Nicéphore Soglo was elected to lead the Republic of Bénin. Under his presidency, an annual Vodoun holiday on 10 January was instated, revitalizing the indigenous religion. Ouidah, the prized port of the 18th century slave trade, was developed as the central site for Vodoun in Bénin. Once, when ill without apparent cause on a trip outside of Bénin, Soglo suggested the power of Vodoun as the source of his ailment (Tall, 1995). By recognizing his belief in the power of Vodoun while abroad, Soglo affirmed the strength of indigenous religious leadership. Vodoun has since resurged as a viable means of worship and a pervasive element in Beninese society. As a Volunteer until 2008, I heard many accounts of politicians attesting to their political power, or degrading another’s, by referencing a consultation with a Vodoun priest.

The touring members of Reforestation agreed that the expansive forest of Athiémé was cut before 1960, which is before independence. However, the videographer states that the forests

containing trees hundreds' of years old had been cleared by the "revolution" that sought to demoralize the Vodoun faith. This causes confusion because the Marxist government of the mid-1970s routed any aspect of Vodoun authority as a challenge to Kérékou's dictatorial rule, but the colonists profited from the trees through exportation. Did the videographer reference the colonists, who cut the trees before they left? Or the unstable first twelve years of independence when the Beninese government was in desperate need of cash (Juhé-Beaulaton, 2006)? Or the Marxist-era efforts to remove any possible challengers to absolute power? I failed to follow that statement with a question to clarify his meaning. The important note, though, is that of the major operators of previous deforestation, the local population is apparently not included.

Current

That's what we in Africa have, that's what we have that is truly *authentically* [speaker's emphasis] autochthonous. That's why we speak of endogenousity (sic) of the sacred forest. Do you see? It's not imported. -CERPA

Rather than clans, Athiémé now has four neighborhoods: Athiémégan, where Akouabalaty lived, Adanlokpé, where Adity Donou inhabited, and Gbedji, the region previously used as shelters for the fields. These were established with the arrivals of the founders, but a fourth neighborhood, Angiwedji, developed later and is in the study of sacred groves. In each neighborhood, there is a mixture cement and worked-earth. Most of the roads in Athiémé are dirt, with footpaths between homes and familial compounds. The main road is paved in brick for a half-mile through the town, but is limited to this stretch –from the turn-off at the highway to the town itself, a distance of three kilometers, the road is surfaced in gravel.

The town and *commune* of Athiémé are cosmopolitan in ethnic diversity, but there are four predominant groups. These are the Kotafon from Toffo, the Watchi from Houantchin, Togo, the Adja-talla (Adja) from Tado, Togo, and the Guin from Ghana. Although each group has its

own language, Kotafon prevails. The Kotafon tend to be traditional agriculturalists who work the arable, fertile lands; the Watchi are usually specialists in fishing, with supplementary cultivation. The Adja work the black and clay-filled soils, and also fish and work in small commerce. The Guin first arrived from the west with the foreigners, and because they were more acquainted with the foreigner's lifestyles, they gave the impression of being more 'civilized' than the others and occupied posts as *fonctionnaires*, or public employees.

There are five primary and two secondary schools, one of each is private. The public secondary school regularly achieves some of the best test scores of the Mono, and has trained notable Beninese such as the author and playwright Jean Pliya and Doctor Emile Derlui Zinsou. The Catholic Church hosts hundreds of faithful, and many protestant churches are located in the neighborhoods.

Christianity has gained a stronghold in Athiémé, both as Catholic and protestant; however, there is strong religious diversity. Vodoun remains pervasive –the *tolegba* resides in Athiémégan and other *legbas* are visible throughout the town. Some *voudounsi*, or people of Vodoun, perform ceremonies or dance through the town in their signifying clothing, usually on market day. Islam is also present and practiced by a small portion of the population. The neighborhood containing the mosque is called “zongo”. In three years' time, I did not hear of any major rift between the religious communities.

An indication of the inclusive religious atmosphere in Bénin is that many Catholic parishioners were familiar with Christian and Vodoun beliefs –one woman professed heartfelt faith in Catholicism, yet kept a Vodoun talisman pinned on her lintel for spiritual protection. Political Beninese leadership and a general accepting atmosphere of Vodoun restrict the Catholic

and Muslim communities from unleashing their disdain of indigenous beliefs. The conflict, therefore, is not as much from a direct agenda against sacred forests as it is a manifestation of weakened social unity.

In Athiémé, the Vodoun religious authority has been undermined by the first Catholic Missionaries, the colonial government, and again during the Marxist era in the 1980s. CERPA, states his final and somewhat flippant phrase that Vodoun isn't imported – "*c'est pas importé, quoi*," he said. His expressive body language and vocal fluctuations convey his sense of independence and pride in the endemic practices associated with sacred groves. He emphasizes the power encountered in Vodoun is handed down through generations, from the elders' knowledge of the spiritual power in the wilderness.

In more recent history, especially since the independence of Bénin, the effects of Christianity and Islam are less ubiquitous. Christians and Muslims have a reputation for ignoring and even directly defying the local religion by not performing the necessary rituals to extract material from the forests. The Church does not have authority to destroy what is not Catholic in the community, but the religious at the Catholic Mission deliberately disregarded some Vodoun taboos, which could often conflict with their nursing and community work beyond the convents' walls. One religious Sister stated that she would not concern herself with removing her shoes to enter a Vodoun domain. This atmosphere may point fingers to particular groups of people, but research shows that a general distancing from traditional values is more the source of disrespect toward sacred groves than any specific religion.

Banana (2008, p. 202) states that human diversity weakens the traditional system of management. In a community already in regular interaction with the spiritual entities found

outside the village domain, immigrants and foreign behaviors are more often blamed for disrespecting the local rules. Byers' (2001) study reported on this subject from a survey of a population in Zimbabwe.

Byers' (2001) survey found that three-quarters of the participating population claimed Christian/traditional beliefs, and half of the same population identified the Christians as the people most likely to disrespect traditional rules. Nearly 86% of the survey respondents agreed that respecting sacred forests was important. Clearly, most of the surveyed population considered themselves Christian and supporting respect for traditional rules, yet at the same time blamed their neighbor for ignoring the rules. Because of the variety of religions professed in the communities surrounding the forest, more even than was surveyed in Byers' study, the continued presence of sacred groves in the area indicates that non-indigenous religions as catalyst for destruction is inaccurate.

Zimbabwe is a distance from Bénin, but the hypothesis is supported by studies near this work's focus. In Burkina Faso, Sabine Luning discusses the inheritance of rituals in sacred areas. The Maane population claims that maintaining traditional knowledge is difficult because humans adapt, and even forget as the information passes generationally (2007, p. 92). The community desires to preserve their heritage, composed largely of the rituals and not necessarily the land itself, but is challenged to do so because of the continual shifting of the social environment (see Structuration p. 31). These changes affect the methods of nature conservation, as well. For the Maane population, loss of moral and environmental values and traditions are manifestations of the same problem—a distraction from, or neglect of, a traditional way of life (Luning, 2007, p. 100). Maintaining knowledge that preserves a “traditional way of life” becomes more difficult

when ‘Western’ education and development programs, as examples, attempt to modify the lives of West African people.

An over-all distancing of the community from established local rules and religions is more the cause of abuse of natural resources than any specific religion. This distance could be due to the presence of intolerant religions, or by the translation of practice over generations. The study by Byers reasserts that local, traditional involvement is very important in preserving forests that are considered sacred (2001, p. 209). These traditional rules and regulations, when strongly respected by the majority of the community as in his study area in Zimbabwe, impresses the same reverence upon immigrants and other people unfamiliar with the spiritually important area. (This in the same way I learned to respect sacred groves as a Volunteer in Athiémé.)

The study of human ecology in Zimbabwe affirms that the remaining stands of forest in the region are located in areas under close observation and regulation of traditional religious and community leaders (Byers, Conliff, & Hudak, 2001, p. 209). This is supported elsewhere: the community associated with the Malshegu in northern Ghana has established strong practices that regulate natural resources.

As the only forest in the area that retains significant space and reverence to provide for spiritual needs, there is strict obeisance to the regulations that protect it. The Malshegu forest is encircled by buffer zones, devolving from spirit lands to a fire ring, and lastly to a swath where the only activity permitted is grazing cattle (Dorm-Adzobu, Ampadu-Agyei, & Veit, 1991, p. 16). Outside of these limits, the community can develop the land as necessary (inverting the typical village structure from Figure 1). The uncontested management of the sacred space is important considering that fuel wood and other resources are available but untouched within

those boundaries. The extraction of goods such as wild game, fruits, or downed wood must coincide with traditional ceremonies (Dorm-Adzobu, Ampadu-Agyei, & Veit, 1991). The forest resources are protected because of the strong reverence of the area.

Another possible example of these qualities is the Celestial Christian Church. This church began in the 1940s and is a popular religion today. It appears to be a combination of Catholic and Vodoun practices, perhaps incorporating a ‘modern’ form of worship such as Catholicism, without the occasional expensive demands of sacrifices for Vodoun ceremonies. An example: the Celestial Christian Church utilizes a Catholic crucifix, but places it on the ground for chicken sacrifice and pours libations of red palm oil and fermented palm wine over it (pers. observation). This could demonstrate a reconciliation of lifestyles without forgoing indigenous thought.

The setting of the video for the Reforestation Project in Athiémé speaks to the current political atmosphere surrounding sacred forests in Bénin. The supposed severe deforestation and rapidly degrading environmental conditions in Africa create many opportunities for international development actors (Fairhead & Leach, 2002). In Athiémé, the reforestation project was funded, initiated, and collaborated with international, national, non-governmental and governmental development actors.

The Reforestation Project was funded through the Peace Corps Partnership, which means that donors in the United States financed the project through an official coordination between me and Peace Corps Headquarters in Washington, D.C. The project cost approximately US\$1,500, mostly for supplies for the tree nursery and the celebration at the culmination of the project (including paying for the video recording). These funds bought materials and made possible an event that attracted attention to the activities of the non-governmental organization.

The president of As.P.E.L. decided which tree species to plant, where to collect seeds, when to plant and how to care for the saplings. My role as Peace Corps Volunteer was technical support if possible, but mainly financially and publicly –I was the only “yovo,” or white person, residing in town, so the general public was always aware of my activities. The president of the organization gained financially and materially via donated funds, and professionally because of the attention garnered as an internationally funded event.

The president’s advantage in this situation is not simply opportunistic. His passion for trees and enthusiasm for the environment long precedes Peace Corps’ involvement. But this particular project’s setting can demonstrate the political image associated with deforestation and conservation. The celebration for the successful completion of the project was focused on Tree Day, 1 June, an annual national holiday intended for public, community tree-planting activities. The representatives of environmental organizations from government and non-government alike were invited to participate. The chosen day and the diverse set of people involved deliberately positioned the Reforestation Project in the field of development. The benefits were not limited to the forests or the religious specialists who are most connected to the places; they extended to a financial and professional boon for the NGO, and as a positive report for Athiémé’s mayoral council to the superiors in Lokossa and beyond.

Environmental development issues in West African countries are important. Human-caused destruction of natural resources is bound to occur with such dramatic changes in lifestyles and increases in population with the focused work in health and living standards. The most unfortunate contribution of development is the confusion of self-perception of the individuals in the community and the ‘natural’ ecology of the landscape. Knowledge of the climate fluctuation that created the Dahomey Gap breaches the question of the quantity of forest cover in Bénin

from biased observers; moreover, the history unsettles decades' worth of assumed knowledge about the actions of local populations.

The un-doing of forests is doubtless. Great forests once covered the land that is now Bénin, much of their loss attributable to climatic shifts. But climate change in the Holocene is not a scapegoat; people have a noticeable effect on their natural landscape. As the population in Bénin grows and demands electricity and potable water, the land and its resources are quickly consumed in the construction of infrastructure and power generation. The ultimate objective of this work is not to accuse or pardon; rather, it is to understand how sacred forests are created and maintained in Beninese society, how the forest cover that remains outside of government regulation contributes to conservation, and if these sacred sites could or should become part of national policy.

Structuration Theory

...but the people who cut it had to ask permission from the *fétiche*, otherwise they would die in the field.

–Zinsou

...if you are sterile and you need a child, if you go to the *iroko* with a person initiated [in the practice] who can ask your request, he'll [the initiated] ask for you and you'll make promises, and you'll have it. –Videographer

But to go [to the forest] to pick [a coconut], if you attempt it, you'll lose the way. You'll not find the way out. –CERPA

Sacred forests are points of intersection where the living and deceased members of the community can interact. Members of the non-living community can be a person's mother who passed away the day previous, any person deceased however long ago in the family, or any being created by God and sent to earth as an intermediary. The interactions between the human and spiritual realms of the known world preserve social order and mediate needs of individuals and communities, provide resources for human consumption such as wild game, food, and medicine, unify the community, and represent a connection to ancestors. Sacred forests are complex and tightly interconnected elements of West African communities. Sheridan says:

Sacred forests typically serve as historical markers and sites for initiation, burial, and sacrifice in societies based on horticulture and agriculture... [and] embed the present in the past by asserting and legitimizing the continuity of a particular organization of society, so sacred groves often have a socially conservative character (2008, p. 20).

The 'conservative character' of sacred forests is a cyclical process that can be described with the theory of structuration. Anthony Giddens describes structuration as the dynamics through which social actors shape, and are shaped by, social institutions (Sheridan, 2008, p. 19; Stones, 2005). Structuration demands a mutual emphasis on the social institutions and the agency of the people who work within those structures. An over-emphasis on either component –the agent or the

institution –lends too much power to one or the other when defining how people interact in society (Stones, 2005).

The relationship between people and sacred groves exemplifies such a recursive process. People sanctify certain locations of the natural landscape through rituals and ceremonies, then utilize the physical and metaphysical resources available in the space. The people –adepts and suppliants –are the actors who shape the social institutions, or processes, that define how they interact with the forests. The processes, in turn, shape the actors by defining the qualities and circumstances that make a reverent approach, and thus the context for satisfying the person's needs.

An explicit example of structuration is the reputation of the grove at Condji-Ougba in the Reforestation Project. Reportedly, the deity who resides here mortally strikes un-confessed adulteresses who dare to enter. This negative reinforcement of feminine behavior maintains the respect and honor due the powerful spirits residing in the forest, and effectively communicates that adulteresses are not socially acceptable.

Ute Siebert's (2008) study is a more elaborate example of structuration. This author conducted various interviews to collect data on the sacred groves in five villages near the northern town of Bassila. Two of the communities studied were deliberately created in the 1700s inside dense forest islands for protection, in part because of the aggressive Fon from Dahomey. The outside stress was mitigated by the dense vegetation; this continued through colonization. Siebert (2008) reports that the elderly people interviewed for the study recalled watching colonists, ignorant of the habitation in the forest, simply pass by the village. After independence the bursting population, especially the youth, demanded agricultural land from the community's elders to be able to make a living in their natal home. The guiding elders were thus forced to

reconsider the forest's presence, eventually negotiating with the spirit and relocating its residence. The elders were at least satisfied that the youth acknowledged the spirit's presence, and the spirit was placated by means of the rituals to appease and respect. The youth, likewise, were satisfied because they were able to build their own lives (Siebert, 2008, pp. 169-171).

This situation speaks to the theory of structuration in that the social institution of the protector-forest was modified, but only through proper channels. The agents and the institution had equal responsibility in the changes to the forest: the people performed the proper rites and rituals that allowed for a harmonious change that affected the forest, as well as the entire population of the village. Although the forest cover was decreased, the regulations surrounding the treatment of the spirit were enforced; the institution was applied in a way that suited the agents' needs. The spirit was still present and playing a role in the decisions made by people in the village.

Zinsou's words at the beginning of this section underscore this relationship. He states that the tree whose stump is visible in the foreground of the video was not cut on a whim. Whoever felled that tree must necessarily have asked permission and performed the appropriate ceremonies, or else have been punished later. As with the forest at Condi-Ougba, the spiritual presence in the woods affects the behavior of the people who live around it; also, the people's behavior can modify the effect of the spirits on their lives. As Giddens attests, both the agent and the society construct and re-construct typical ways of interacting.

The theory of structuration complements the philosophy of the region because of the feedback between the society and the individuals. As in Figure 2, below, that depicts the cycle of community membership, the adults are responsible for appeasing the spirits, some of whom are

their ancestors. Duly acknowledging the spiritual members of community perpetuates a harmony that provides for people's needs, be they fertility, bodily or mental health, or the use of natural resources such as medicine or construction wood.

The process of determining a tree as sacred is long and inductive. As people seeking spiritual intervention are appeased, the spiritual entity within the tree gains a reputation that inspires a mixture of awesome fear and respect. Specialists are necessary to minimize the possibility of upsetting the deity, as well as to sufficiently honor the providence of the god. People are conscious of the benefits of the beings sent by God without necessarily being specialized in a particular sect of Vodoun. In general, any given person gives thanks for the providence of fertility and healthy living, and memorializes generations of near and distant parentage through libation and ceremony. These common gracious acts indicate how the Beninese people include the living and previously-living in their concept of community, and the importance of relationships in extended and immediate familial lineages.

A forest that is considered sacred indicates a high level of living, human interaction. The trees in these forests are part of larger stories of geography and history; they also manifest much of the Beninese philosophical structure. Not every individual in Bénin requests an adept for instruction on the necessary sacrifices to be performed in the sacred woods. However, qualities such as social harmony and an age-respecting hierarchy are apparent throughout the nation. The following section on Vodoun attempts to describe how such qualities are transmitted in practice.

Vodoun of Sacred Forests

To make a sacred forest...he spoke of *dan*... This is a divinity that *encompasses* [speaker's emphasis] the village. And our forefathers, our grandparents, had the capacity of geomancy, that is to say, the *fâ* [divination method] that is thrown. -CERPA

Vodoun, as referred to in this study, is not the same practice as *voodoo* or *hoodoo*. This is important to note because *Vodoun* is the indigenous religion to Bénin; the religion's voyages throughout the world via trade has caused the translations and assimilations that have become *voodoo*. *Vodoun* in Bénin is a religion that names a creator-god, *Mawu-Lissa*, and a number of divinities that support the work of *Mawu-Lissa*. This religion is often categorized as animism; the best description of *Vodoun*'s worship is to say that a spirit of life is recognized in all beings, human or otherwise. A hierarchy within the belief system acknowledges human life is higher than other animals and plants, etc.

As described by the residents of Athiémé, *Vodoun* was the ubiquitous religion in pre-colonial life. Some sects of *Vodoun* supplicated the *fétiches*, or divinities, of *Hébisso*, the divinity of thunder, *Sakpata*, or the earth divinity, *Ogou*, the god of iron, *Dan*, the divinity of the python, or *Tohossou*, the god of the misshapen anomalies, or a combination of these. Each divinity was considered an intermediary to *Mawu-Lissa*, with its own spoken and drummed languages people could learn for spiritual communication.

The adepts, or persons trained in a particular *Vodoun* sect, were called *assujettis* or *voudounsi*. Training happened in the convents, or schools, located in a particular region of the forest considered sacred because of that use. In these convents, trainees to a certain *fétiche* learned the spoken language and practices special to that cult, including the rhythms of the *fétiche* drum that spoke with the divinity. The different sects were further distinguishable by symbols, clothing, and worship practices. Those who were not part of a *fétiche* were called *ahès*,

perhaps similar to an atheist, or simply outsiders who were yet unfamiliar with the local Vodoun sects. The chiefs of the *fétiches* surveyed and directed the religious practices of their particular sect, and anyone associated with a *fétiche* was called *hounon* –this included the adepts, the men and women *féticheurs* (people who cared for the *fétiche*), and the general faithful of the Vodoun cult.

An example of an application of Vodoun is through field work. Before any cultivation activity, the chief *féticheurs* would consult the *mânes*, or oracles, and receive signs as to the specific actions necessary to have a successful harvest. This information included the manner in which to perform a certain sacrifice and how the drums should play. Another example is the *legba*, manifested in a statue at the entrance to habitation as protection. The Athiémégan neighborhood of Athiémé, where Akoubalaty lived, housed the *tolegba* of the entire town.

According to Monsia (2003), *legbas* play a variety of roles in Vodoun, from protection of a site to messenger between gods, as well as assimilating characteristics of the four main elements of the earth (air, water, fire, earth) through which trained specialists, *assujettis*, can communicate with *Mawu-Lissa*. The *legba* in Athiémégan serves to protect the neighborhood residents against bad influences. In sacred forests, the *legba* guards against entry of evil spirits. Represented in statuettes often composed of a concrete mound with eyes, a small mouth, and a phallus, the *legba* is the first to receive libation during ceremonies (Monsia, 2003, pp. 40-41).

The faith of this religion was also constituted by a system of healing. A healer knew which words to say to a *fétiche* to provoke a signal indicating the illness. After knowing what type of illness the person had, the healer drew from his knowledge taught in the convents to

prescribe sacrifices, methods, or advice relevant to the sick. Some components of diagnoses would be similar to the *fâ* divination method, further discussed later and in addendum D.

Vodoun is the indigenous religion; as in most cultures, the language reflects the speakers' conception of the world, manifested in what would be called "religion." Therefore, Vodoun is best understood in a Gbe language such as Guin, Kotafon, Fon, Adja, etc. With French, the speakers' must translate their religion to a language that does not perceive the world in quite the same way, which compromises their ability to convey the philosophy of Vodoun, and vice versa. Beninese who profess Islam or Christianity most likely rely on a Gbe language (mostly in the south) at least in familial and rural exchanges. In doing so, they recall Vodoun in some way. The adaptive ability of Beninese religions was present well before Western religions. Nicolau-Parés (2005) explains that the divinities in the practice of Vodoun were prominent regionally before the greatest effects of international slave trade. As people migrated and communicated, the divinities were mobilized, as well, ritually creating religious sites with multiple gods. Vodoun in Bénin has a strong history of adapting to the social environment.

Conversation was in Kotafon while touring the sacred groves, then translated and summarized into French for me. At one point, while regarding an altar in the forest at Zounhoué, I interrupted this general flow and asked two questions "in French, if you don't mind." I asked what makes a forest sacred, and if they could still be created today. These questions sparked insightful responses by all members of the touring group. Their interpretations of the conception of sacred groves are discussed below.

The Sanctity of the Forests

The trees are respected. –G. Zinsou.

Such as the *iroko*, for example, as soon as you need something, the tree will give it to you.

-Videographer

...you walk, you see a coconut tree, and you say, “hey, I’m kind of hungry,” a coconut will fall... -

CERPA

I saw an altar replete with evidence of numerous and recent ceremonies in the midst of each group of trees in the project, with one exception at Dedekpoé (discussed in Biodiversity, beginning p. 51). The indicators for such activity were spilled red palm oil from the oil palm tree, chicken feathers, and other objects such as coins and cloth. I was allowed to enter the forests as a foreigner because my intentions were not religious. Also, I was accompanied by numerous locals who could advise me on proper behavior.

For indigenes, typical entrance to the groves is in accordance with the market day (every five days) and restricted to those people who were requesting or conducting religious ceremonies. Entry is also limited by the sexual state of the suppliant –a woman cannot be menstruating and neither man nor woman can have had sexual intercourse within a certain delay of time before entering the forest. The religious leaders who conducted ceremonies had been trained in the practices specific to that deity; non-initiates must request the services of the adepts in order to approach the spirits in the forests.

The forest at Zounhoué was on the outskirts of the village on the grounds of the *chef féticheur* for the entire region. The *chef*'s participation was necessary to validate and conduct the project. He planted his trees in his personal consultation forest which was not available to us, as well as in his botanical gardens, which were available. Instead of entering his grove where he had planted most of his trees, we toured a connected sacred site that was not for his personal use, and his botanical garden. The following exchange took place at this connected grove, at the delimitation of the sacred zone. To pass into this zone, I would have needed to remove my shoes;

none of the group did so because no one had any religious intent. Instead we remained on the edge. Zinsou translated and summarized the response to my questions from the *chef féticheur*³ (here translated to English):

Trees aren't cut just any way... Even if you enter [the forest] to fell a tree, someone will intercede and ask what you're about to do, even if you don't see that person. It's something very sacred. This is evidenced by the fact that there is control around the perimeters. [The control] is so effective that although here we see a tree stump from a cutting, but the people who cut it had to ask permission from the *fétiche*, otherwise they would die in the field. The trees are respected. The *fétiches* authorize the cutting of trees.

Zinsou thus begins with an explanation that provokes but does not clarify any questions. At the time, I was accustomed to references to the *fétiche* and supernatural power that resided throughout nature from the tree to the river, but upon review for this work, Zinsou's words open the way for explicit questioning. This translation touches on Vodoun concepts of nearness of the spiritual entities, a limit to the sacred zone, and ceremonies that authorize use of resources within that zone.

According to Zinsou from a discussion outside of the Reforestation Project, the 'sacred' of the forest comes from the invisible nature of the voice that restricts unauthorized behavior. Zinsou translated the Guin and Kotafon terms for the sacred forests: *vodouzou* or *zogbé* in Guin and *houzou* in Kotafon. He said that these are sacred terms, possibly meaning the words for the sites in the language of the divinities in which the adepts are fluent. The words in both languages, according to Zinsou, signify another word, *nouvonvon* or *noussissi*, apparently shared

³ Les arbres ne sont pas coupés comme ça... même si tu rentres pour couper, quelqu'un vas t'interpeller pour demander ce que tu es en train de faire, même si tu ne le vois pas (la personne). C'est un truc vraiment sacré. Du faite qu'il y a du contrôle, aux alentours ; si bien que les gens ont coupé, mais ils ont dû demander au fétiche, sinon il meurt dans le champ. Ce sont les arbres respectés. Les fétiches autorisent le coupage des arbres.

between the languages, which mean “what must be feared.” His interpretation, and the sentiment of the other speakers, is that the sites are unique in the landscape because of the spiritual essence, or power that resides there. This essence must be interacted with in proper form as directed by adepts, and un-initiated people should fear the deities’ strength with which they are not trained to effectively communicate.

Since the ancestors created the forests in question, I then asked if a sacred grove could still be established today. The *chef* responded that yes, a forest can be created “as long as it is *more* sacred than the other (speaker’s emphasis)”. He also corrects the terminology: rather than *fétiche* in the altar, it is the divinity represented there. Unfortunately, I did not pursue the *chef*’s response to understand what he meant by “*more* sacred...” Instead, I asked how it was accomplished. The videographer, while recording behind the camera, responded⁴:

⁴ Kraus : On le trouve dans un endroit, quelque chose spirituel... on entre l’endroit et on le sent, ou on le dit ? C’est comme ça qu’on voit une forêt sacrée ? Ou on peut le mettre dedans ?

Videographe : La forêt est sacré à partir du moment où, les bois dans notre tradition ici sont vénéré... tel que l’iroko par exemple, dès que tu as besoin de quelque chose, il peut te donner. Si tu as besoin d’enfant, si tu es stérile et que tu as besoin d’enfant (sic), si tu vas vers l’iroko à travers les initiés qui peuvent demander ça, ils vont te demander ça et tu vas faire les promesses, et tu auras ça. C’est à partir de là que les forêts ont commencé par être sacrés, a été préserver, protéger au temps de nos aïeux. Ce n’est pas que tu peux te lever seulement et dire que la forêt est sacrée. Non. C’est à dire qu’il y a des endroits où c’est comme ça dès des siècles passés, nous, on n’a pas vu, c’est la révolution qui a fait couper les arbres en désordre dans les forêts sacrées, parce qu’ils ont voulu ridiculiser, ou bien donner autre étiquette au sacrement de la forêt. Donc ils ont détruit. C’est pour ça que vous n’aviez pas vu des arbres de deux cents ans ou de mille ans ici actuellement. Parce que nous, on en a vu.

Et des arbres même qui parlent. Ce qu’il disait il ne voulait pas bien expliqué. Si tu viens ici c’est les arbres qui te parlent, ce n’est pas l’homme qui te parle. Parce que les arbres là sont sacrés. C’est ça. C’est-à-dire c’est les choses un peu mystiques qu’on ne peut pas expliquer à... ..viens ici sans que tu ne sois initié parce que, le développement aujourd’hui a permis qu’on puisse expliquer les choses et que tous ceux qui sont là qu’ils ne comprennent pas, puissent savoir ce qu’on veut dire exactement. C’est des mystères (sic). C’est ça. Merci.

Kraus: So you find a place, something spiritual in it... you enter some place and you sense it, or do you just say it? Is that how a sacred forest is made? Or do you place it within the site?

Videographer: The forest is sacred at the moment when, the woods in our tradition here are venerated... Such as the *iroko*, for example, as soon as you need something, the tree will give it to you. If you need a child, if you are sterile and you need a child, if you go to the *iroko* with a person initiated [in the practice] who can ask your request, he'll [the initiated] ask for you and you'll make promises, and you'll have it. It's at that moment that the forests are considered sacred, are preserved and protected from the time of our forefathers. It's not that you can just get up and say that a forest is sacred. No. That is to say, there are places where, since centuries previous, we haven't seen [during this particular trip], it's the revolution that cut the trees without thought in the sacred forests, because they wanted to ridicule, or give a different connotation to the sacred forests. So they destroyed it. That's why you don't see 200 year-old trees, or 1,000 year-old trees here now. Because we've seen some [in the speakers' lifetime].

And the trees themselves speak. He was telling you that but didn't explain well [referring to Zinsou's speech]. If you come here, it's the trees who speak to you, it's not a person who speaks. Because the trees are sacred. That's it. That is to say, it's a bit of a mystical thing that you can't explain... you come here without being initiated [into the spirit's means of communication] because the development today has permitted that these things be explained, and all those who don't understand, they can know what we mean to say exactly. It's a mystery. That's what it is. Thank you.

The videographer responded eagerly, as if he had been awaiting the opportunity to assist the American and Beninese to understand each other better. His major points were that the trees are sacred –yet it is not the tree, it is the being that inhabits the tree. Another of his points was that people who are adept at the method of worship and communication of the deities in the forests are necessary as intermediaries for a suppliant, along with promises on the part of the person requesting. The videographer says that a sacred forest cannot just be made on a whim, on

an individual's decision in a moment –no, it's not done that way. A forest is made sacred by way of the trees that satisfy the people's demands. He emphasizes that the non-human voices, the 'sacred' of the forest, is a mystical thing that cannot be easily explained to people outside of the religion.

The videographer deliberates about how a forest comes to be considered sacred. Although it's clear that the regions imbued with spiritual activity are not haphazard, he begins without a specific characteristic that distinguishes a sacred tree from a regular tree. He says that trees are venerated –but not just any tree. He settles on the example of an Iroko, a tree renowned in southern Bénin for its magnificent height –up to 50 meters, or over 150 feet –and the trees' 'legs,' or column-like shapes at its base to support the tree's girth. These notable trees, he confirms, are capable of providing for a person's needs with the help of an adept. That an adept is trained in the trees' mystical language means that the 'sacred' of that tree had already been recognized, thus not fully answering how a forest *becomes* sacred. The videographer furthers some of the topics that Zinsou touched upon in more narrative form. He speaks of the mystery of the trees, the need to use proper channels to interact with the forest and the resources there, and the politics that brought change to the woods as discussed in the History section (p. 11).

The videographer speaks of the adept to assist people in properly making a request of the deity, and CERPA warns of the danger of abusing the generosity of the spirit. The videographer informs me that to attain the ends I seek, I must apply to someone who has gained the particular knowledge of spiritual communication, someone capable of interpreting and directing the proper actions needed to achieve the request. The promises he mentions could also be called sacrifices; in either case, the person making the request demonstrates his/her commitment to their desire and belief in the spirit by exhibiting the extra effort a promise or sacrifice requires.

The next speaker is the representative from CERPA. He extends the Videographer's depiction of the forest and brings forward more points for discussion in doing so. Compared to the Videographer, whom I cannot see on the video and who was otherwise preoccupied holding the camera, CERPA uses body language that emphasizes his spoken word. I attempt to include the most expressive moments⁵.

That's to say... In fact, there's another volume to your question. To make a sacred forest, the president has already spoken of that [Zinsou's speech], he spoke of *dan*. That's what they were explaining to you. This is a divinity that *encompasses* [speaker's emphasis] the village. And our forefathers, our grandparents, had the capacity of geomancy [form of divination], that is to say, the *fâ* [divination method] that is thrown. [Speaks from point of view of the forefathers] But where does the divinity live? [Beneath the moon? Words not clear], they look, they look, they say [speaking for forefathers] the divinity lives in this forest, from this point. This forest becomes venerated, sacred. That's how [sacred forests] have come to be present kind of everywhere. But to get up and say, [speaking as another] well, can we make this a sacred forest? That's not possible. [Words not clear]... it's

⁵ C'est pour dire que... au faite, il y a un autre volume de ta question. Pour en faire une forêt sacrée, le président a déjà parlé de ça, parler de *dan*. C'est ce qu'on t'expliquait. C'est une divinité qui encadre le village. Et, nos ailleurs, nos grands-parents a le bien de la géomancie, c'est-à-dire le *fâ* qu'on jette. Mais cette divinité habite où ? Et, de fil à la lune [words not clear], on cherche, on cherche, on dit, la divinité habite dans cette forêt, à partir de là. Cette forêt devient vénérée, elle est sacrée. C'est comme ça qu'il est un peu partout. Mais se lever pour dire bon, est-ce qu'on peut en faire une forêt sacrée, ce n'est pas possible. Si entretemps... [words not clear]... puisque l'essence endogène. Cette sociologie [words not clear] est endogène... c'est ça que nous en Afrique c'est ça, c'est ce que nous avons de vraiment authentique d'autochtone. C'est pour ça qu'on parle d''endogènitè' (sic) de la forêt sacrée. Est-ce que vous voyez ? Donc ce n'est pas importé, quoi. C'est comme ça.

Et les arbres qui parlent, bon, c'est vrai. Si la chose, ... vous allez dans l'Ouémé un jour... après le fleuve Ouémé, vous entrez dans une forêt où, comme le président a déjà dit, vous prenez, prenez, vous voyez le cocotier, vous dites mais, j'ai un peu faim, un coco tombe, automatiquement. Mais vous ne sortez pas de la forêt. Vous prenez votre coupe-coupe pour manger, vous buvez, vous laissez. Mais pour aller cueillir, si vous tentez, vous perdez la voie. Vous ne trouvez plus la voie pour sortir. Mais dites seulement, j'ai un peu soif, enh, un coco tombe automatiquement. Jusqu'aujourd'hui, cela, c'est clair dans... Est-ce que vous voyez ? Ok. Bien, c'est comme ça.

endogenous. This [words not clear] is endogenous. That's what we in Africa have, that's what we have that is truly *authentically* [speaker's emphasis] autochthonous. That's why we speak of 'endogenousity (sic)' of the sacred forest. Do you see? It's not imported. That's how it is.

And the trees that speak, well, it's true. If the thing... if you go near the Ouémé one day, past the River Ouémé, you'll enter a forest where, like the president said [referring to Zinsou's mention of taking without asking], you walk, you walk, you see a coconut tree, and you say, "Hey, I'm kind of hungry," a coconut will fall [vocally reinforced by others present] automatically. But you don't leave the forest [said with warning]. You take your machete, you eat, you drink, you leave the coconut right there. But to go [to the forest] to pick [a coconut], if you attempt it, you'll lose the way. You'll not find the way out. But if you just say, "Huh, I'm kind of thirsty," a coconut will fall automatically. Even still today, it's clearly the way it works. Do you see? Ok, good, that's how it is.

He clarifies that the forefathers divined the presence of the spirit within the forest by using *fâ* divination, a practice for interpreting unspoken words, or for resolving problems without an otherwise apparent solution. This completes the videographer's description of the sacred trees in that the forests become sacred when the forefathers, who are practiced in the interpretation of spiritual communication, divine the location of the spirit's residence.

CERPA additionally says that the speaking trees are related to the *Dan*, the Vodoun, of the forest. The *Dan* is the deity of the village and, as in his example, provides for the people's needs. His narration is composed of specific settings that describe the creation of sacred groves. These settings include the ancestors and their use of divination to locate the divinity's sacred place, a person whose needs are satisfied in a sacred grove in accordance with accepted behaviors for the spirits, and his perception of the forests in relation to the non-Beninese world – that it is not imported.

The three speakers together construct an idea of why these trees, and not others, are sanctified. Zinsou did not distinguish the voice heard in the forest from that of a person's, but the videographer clearly states that the speaker is not human. The videographer says the trees speak; CERPA explains that through *fâ* divination, the elders discovered the divinities living in this particular group of trees. CERPA implies that the people deduced a spiritual protection because of the successful physical guard of the trees. The first step in forming a proper relationship with the spiritual forces is to know where to meet them –in the sacred forest. Sanctified woods are special locations in the landscape because of the infusion of a god-like deity with the trees.

These trees can serve individuals, such as the *chef féticheur* in his personal forest. Kouame Kokou (2008), a Togolese scholar who studies the biodiversity of sacred groves in Togo within the Dahomey Gap, further explains the relationship between sacred forests and Vodoun. He states that a sacred tree is linked life-long to an adept. The tree is a symbol for that person and his or her family. This particular deity/tree is supplicated by the person or family to ask for help or success when confronted with difficulty, as well as approached for giving thanks (Kokou & Kokutse, Conservation de la biodiversité dans les forêts sacrées littorales du Togo, 2007).

An important observation of the interpretations of sacred groves is that the group members, composed of specialists from various fields and non-specialists from the general public, were all confident in contributing to the development of the explanation. This attests to the degree to which the sacred groves are part of the common knowledge in the Athiémé region. Evidence of this is when the group members vocalize their agreement with CERPA's statement, above, that a coconut will fall when a person is in need. Not every individual may frequent the groves, but most people know about them.

CERPA exemplifies the importance of using available resources while being cautious to not abuse them. He assures me that the forest will provide when needed, but will thwart ignoble intentions. In light of his previous information about the *dan*, I know that the trees provide for the needs of people not only because they are trees, but also because the divinity that “encompasses the village” resides in those woods. To maintain a healthy relationship wherein the spirit is helpful toward people, the people must respect and acknowledge the spirit’s generosity.

The *fâ* in CERPA’s speech is part of the practice of Vodoun, a method of divination used by trained adepts. Monsia (2003) briefly describes the practice as a means to find sign of the Vodoun divinities. Having voluntarily experienced a *fâ* consultation, I can relate that the practice was enlightening on a couple of levels. Through methodic and practiced tossing of small beaded chains, the *féticheur* was able to generally depict my then-current anxieties and behaviors. At first, I was somewhat unimpressed because of the lack of details; but on second thought I attributed to him more skill because what he did know was more than hearsay. Whether the *fâ* consultation provided him the material or not, I must at least credit him with a great ability for observing people. (A full rendition of the experience is provided in addendum D.)

The interaction between people and spiritual entities that link deceased members to their living family is quotidian. As a trainee in my host family’s home, I was introduced to deceased parents and grandparents who were still present in the familial compound via a tomb in their living room. Family compounds were constructed in a grouped manner, so that people of the same family line lived as neighbors on a relatively small piece of land. As important family members passed away, their home became their resting place. (Less notable family members were buried near the prevailing important deceased person of the lineage.) Although this building

would no longer be inhabited by the living family, the space was open to them. Young children would play and students would study around the calm of the grave site. (See Vansina 1990).

The above example begins a discussion of the philosophy of Vodoun. With the help of some ideas from John S. Mbiti (1969), the following image facilitates the conception of the life cycle in Bénin in general and Vodoun.

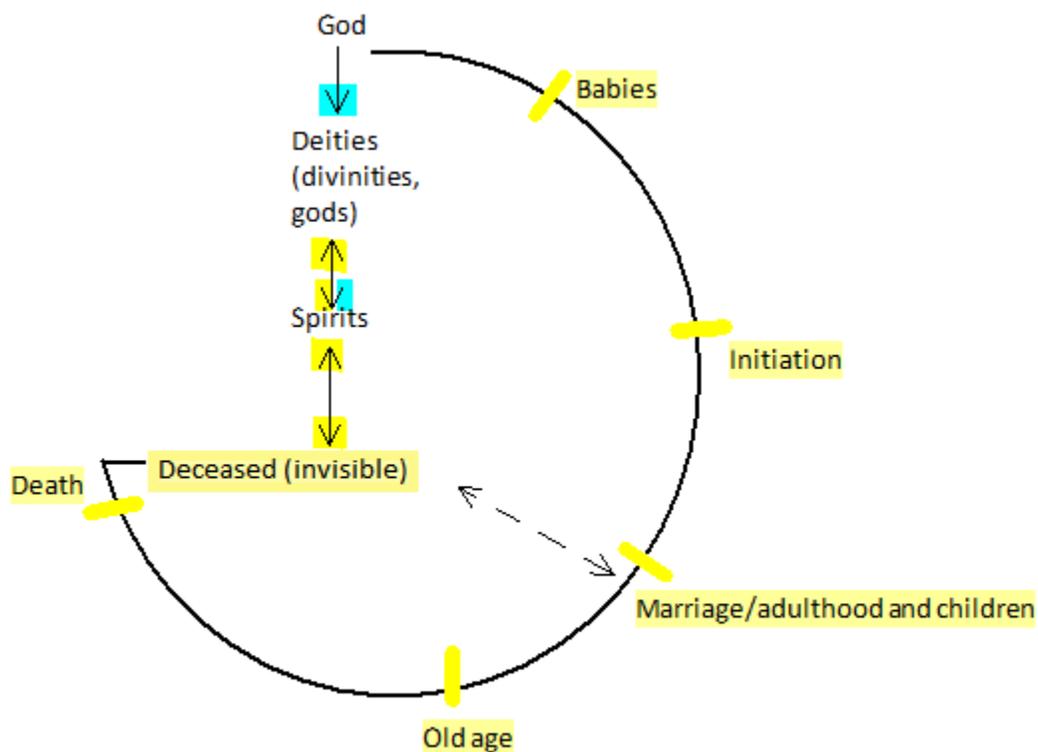


Figure 2. Cycle of community membership. (Figure drawn by Erika Kraus, based on lectures from Dr. Peter Ukpokodu (2011) and text of John S. Mbiti (1989).

Figure 2 depicts the cycle of community membership in African philosophy. Life starts with God, shown at the top of the circle. God is the source of all life, and from whom parents receive babies and children. Ideally, community members cycle as the figure pictures it: the children grow up, participating in initiation rites that form men and women. Young adults make

their contribution to the community by producing children and further the family lineage, caring for and educating their children, as well as honoring their forefathers.

The ancestors approach God in death by becoming more like the spirits God sends to earth. Community membership is represented in cyclical form because, as in the example provided by the videographer, if a young woman wants a child she will consult the spirits. Her child will then not only come from God, but her wish would have been made to the ancestors, who are nearer to and can better communicate with God. Bearing a child is men's and women's contribution to the family line. She, the woman requesting a child, pays respect to the ancestral spirits by making a promise to them for a child; the child arrives and becomes part of the family line; the woman gives thanks for the providence, ages, and passes away. She is then respected by her descendants and likewise capable of communicating to God for their wishes. This is an age-respecting hierarchy, as seen in the youth of Bassila (Siebert, 2008) (see Structuration section, p. 31).

Having attained old age through the highly-desired process of becoming a parent and grand-parent, the elderly guide the youth in maintaining social standards and values. In death, a person becomes part of the spiritual world. The list in the middle of the circle in the figure depicts the hierarchy of spiritual beings. The dashed arrows indicate the communication and reciprocal relationship enacted in libations, sacrifices, and rituals performed by religious leaders. The spirits of the forest, such as the *Dan*, are located in the cycle of community membership at the position of the deceased.

Other than the visible reminder of a tomb, libation is another manner of recalling ancestors. *Sodabi* is strong liquor distilled from the oil palm tree sap, and the Beninese are very

proud of its potency. An aperitif, as well as a digestive and a couple in between, could quickly influence a person not familiar with the home brew. To avoid directly refusing more invitations to drink, I was taught to pour my part on the ground, claiming, “*pour les ancêtres*”, or “for the ancestors.” This practice of libation for the deceased could be employed in any given drinking situation, and was repeated ritually during ceremonies. Its intention was to acknowledge the invisible members of the community. *Sodabi* was a very available commodity and was offered as common courtesy to guests in a home. By pouring a libation, I garnered much respect and acclaim as a foreigner well-assimilated to Bénin. (I was usually then offered a refill for myself.)

There are numerous ethnicities in Bénin, many of whom in the north are not related to the Gbe and Adja origins as in the south; yet the practice of remembering the dead was nation-wide. The national television airs minutes’ worth of obituaries, and not only of people who have recently passed away. The obituaries announced the one-year, two-year, five-year, etc., anniversaries of family member’s deaths. I often traveled to ceremonies of these anniversaries, remembering the deceased with food and drink. The televised obituaries are another example that demonstrates the concept of deceased members persisting in societal activities. This example, along with the burial site and the *sodabi* libations, demonstrate the connectivity in the cycle of community membership, as depicted in Figure 2 (p. 47), in Bénin.

The speakers in this video leave open the question of how the ancestors are related to the spirits in the forest. However, an experience apart from the project recorded in the video provides some insight. While biking through the Athiémé countryside one day, I noticed a tree resembling a red-bud tree, common in Kansas. A member of As.P.E.L. explained that this tree, named *ticheti* in *Kotafon*, could substitute for body in a funeral. For example, if I passed away far from home, the wood of the *ticheti* would represent me in the ceremony for my death. This

tree was not specifically named as a species in the Reforestation project, but it does demonstrate the spiritual capacity of trees in relation to human life.

Consistent through the men's explanations of the workings of the sacred forest is the due respect and acknowledgement of the spirit's presence. As long as the living members of the community honor the spiritual part of the community, through the specialists in communication and by not being greedy, the spiritual entities will care for the people. The *sodabi* libations "to the ancestors" demonstrate the link between the deceased and the spiritual community. Maintaining the communication between the supernatural –the deceased members of the community and spiritual entities –and the earthly world creates a system that is mutually beneficial. The proximity of the dead to God places them in closer communication to God. The living pray with the help of these intermediaries, and 'make promises', as in the words of the videographer above, in search of solution to their problems, or for blessings and good fortune.

The manifestation of a spiritual place, where living members of community can physically encounter the non-living, reinforces the importance of family lineage. Family elders who have passed away are specifically called in to action as intermediaries by their descendants, and as non-vocal participants in society. People of this philosophy are connected to their family and extended community because of the presence of the invisible members; the people are connected to God through the activity of the spiritual world in living society. The reciprocal relationship between the people who rely on the produce of the woods and the spirits who reside there depict the theory of Structuration and manifest the complex social interactions in Beninese society. As a manifestation of this cycle of community membership, the sacred groves inadvertently harbor rich biodiversity.

Studies in Biodiversity

The riparian forest along the Mono River provided abundant game, while fish jumped into fishermen's nets. The commerce at this time, in the late 17th century, was based on oil palm tree products, corn, cassava (or manioc), and meat and fish. – Athiémé history (Addendum A)

The data I have deduced from my experiences in Athiémé are insufficient for a complete portrayal of the biodiversity of the area. However, empirical work of studies conducted elsewhere in the Dahomey Gap, notably (but not limited to) a number of sacred and riparian groves from Kouame Kokou (2007, 2008) in Togo and the Lama Forest from Peter Nagel (2004) support the argument that these relatively small sites in Athiémé are worth studying for forestry conservation. The present work's niche is preparation for forestry study in small patches of wooded areas not under governmental management. Questions in the field of forestry have yet to be addressed in a field laboratory environment and will be further discussed.

The five forests in the *arrondissement* of Athiémé received 500 trees of eight species. The communities of the forests of Angiwedji, Dedekpoé, and Goudon planted the saplings in a manner that expanded or filled-in the forest cover. The grove in Condji-Ougba was not increased according to sight judgment, and half of the planting site at Zounhoué was unavailable for observation. The other half, the botanical garden where the *chef féticheur* had planted some of the trees, was available and had increased in cover.

Zinsou was essential to the project in knowing which species would be most appreciated because of their rarity and their medicinal benefits. He was admired for having cultivated saplings specifically intended for sacred groves, and especially for the *lingué* tree –the only mature *lingué* was found in a village outside of the Reforestation Project area. Some of the plant species from Reforestation are also named in the species lists of Kokou (2007) and Nagel (2004), such as *Azelia africana* and *Khaya senegalensis*. The species not mentioned in other scholars'

works could suggest that the Athiémé population appreciated different species in the sacred areas, which could depend on customs of the divinities of the forests, or indicate other habitats with different species.

I conducted a follow-up tour one year later after a periodic flood of the Mono River in 2008. The amount of surviving trees appeared to be related to the site's proximity to the Mono River's flood basin; some of the trees remained, although the majority had washed away. Despite the flood, the fact that trees remained at each site at least speaks for the viability of the land, if not the green thumbs of the planters. The responsible party at each site appeared to have protected the saplings as well as possible from the hoes of agriculture and the fires of the dry season. No more trees were planted in a similar project while I resided in Athiémé. This follow-up tour was not recorded on video, but I reference the trip for some evidential support in the body of this work. As shown in addendum E, only 13% of the trees survived the flood of 2007.

At Angiwedji, the first forest in the video of the forest tour, Zinsou listed the tree species for the representatives of PADMOC and CERPA⁶. The man called PADMOC appears to

⁶ *English*: Zinsou: Khaya, saucissonnier, samba, antiaris, these are the types that we have here.

PADMOC: So I was asking which plants are here, what species have you planted here?

Zinsou: We have Caicedrat, samba, lingué, iroko, and antiaris.

PADMOC: And you have iroko also.

Zinsou: Yes, as well as terminalia superba.

PADMOC: To regulate the sacred forest.

CERPA: They did baobab.

Zinsou: Well, that is to say, they [the Angiwedji community] state their intentions by planting trees that they use the stems of for sorcerers.

CERPA: Oh! Right. So it's a cultural thing.

French: Zinsou : Khaya, saucissonnier, samba, antiaris, c'est les essences que nous avons ici
 PADMOC : donc je demandais quelles sont des plantes que... en terre ici espèces vous avez plantés ici...?

Zinsou: Ici nous avons caicedrat, samba, lingué, iroko, et antiaris,

comprehend the project's objective via this list of species. The man referred to as CERPA notes the presence of Baobab. The Baobab is not considered an indigenous tree this far south in Bénin⁷, but is included in the repertoire of herbal medicine. With its great girth and height, it has been assimilated to the types of trees with great capacity for spiritual communication⁸. CERPA mentions this species because Zinsou had emphasized the indigenous nature of the reforestation project, yet included the supposedly foreign baobab. Zinsou's response further explains to CERPA that the project was more than trees as a project that underscored the religious ambiance of the sites⁹.

Kouame Kokou is a Togolese scholar based from the university in Lomé, Togo, whose studies value the richness of sacred forests and recognize the anthropogenic connections to wooded sites. Kokou's research domain is relevant to this study in Athiémé because of the long relationship between the two places. As mentioned in the introductory chapter, the Guin in Athiémé originated in Tado, Togo. During the colonial era, a rail line connected Athiémé with farther reaches of the West African coast, including Lomé, Togo. The Mono River that forms the

PADMOC : et vous avez mis les iroko aussi

Zinsou : oui, et aussi le terminalia superba

PADMOC : pour réguler la forêt sacrée

CERPA : Ils ont fait le baobab

Zinsou : Bon, c'est-à-dire ils ont dit leurs intentions en tant que des arbres qui fait des tiges aux sorciers.

CERPA : ah ! Justement. Donc c'est un truc culturel

⁷ In fact, the map from 1893 in the study by Fairhead and Leach (1998) explicitly notes Baobabs in the landscape, especially near human habitation. Baobabs are also commonly found in places with high water tables. The Baobab is regarded as sacred in Hausaland in the Sahel (pers. comm.: Dr. Beverly Mack).

⁸ Baobabs are often roosts for owls. Owls are usually considered the animal equivalent of a witch. An owl roosting in or near a person's home arouses suspicion of witchcraft, which is a manifestation of the supernatural in earthly form.

⁹ Zinsou says they make use of the stems (*tiges*) of the Baobab for the *fétiche*. This possibly means that the wood is useful in the construction of an altar for a divinity, or perhaps for a sacrifice.

border between Togo and Bénin in the district of Athiémé is regularly crossed –the Gbedji neighborhood in Athiémé outgrew its space, so some families moved across the Mono River into Togo. For a number of years, those families have crossed the Mono by *pirogues* to deliver school children, market-goers, and farmers to their fields on the Bénin side.

As discussed in the geography of the region, Togo shares many physical and social attributes with Bénin. Kokou (2007, 2008) presents quantified research that sacred forests, not included in the national domain of classified forests, are important reserves for rare and declining endemic species. Kokou (2007) surveyed nine different sacred groves in southern Togo of varying sizes and collected plants from them that had not been officially listed as living in Togo previous to his research. He found that the forests' vegetation is important in biodiversity conservation, but that these sites are degrading quickly because of a lack of attention from the central government, as well as a neglect of the traditional authority that manages the sacred sites (2007).

In the survey of nine different sacred groves, Kokou (2007) catalogued 218 species of plants, 177 of which were considered rare in littoral forests, and five are only found in sacred groves in littoral habitats. Another five of the 218 species noted were only found in sacred groves and nowhere else in the nation. Kokou's consistent research focus in sacred groves of Togo produces scientific data, such as the species lists mentioned here, that emphasize the importance of sacred groves in ecological conservation.

Kokou (2008) surveys sacred groves' floral diversity. Kokou affirms that the fragments of forest considered sacred are not penetrated by savannah plant species. This aligns with the information presented by Fairhead and Leach (1998) from pre- and early colonial observations.

The colonial-era persons such as Chevalier and Aubréville distinctly report that the forest stands are not intermixed with savannah species. Kokou's information could agree with Fairhead and Leach (1998) who argue that the forest species have emerged through ecological succession from a savannah-type ecosystem; or, his information could reinforce the deforestation discourse based on observations such as Chevalier and Aubréville that regulates the general Togolese (and Beninese) public in their interactions with the forest resources. Kokou's (2008) understanding of the change in forest cover is unclear. However, his focus on the biodiversity richness of the sacred forests is similar to my own priorities for further study.

Zinsou knew which species were most difficult to propagate and were the rarest. He then planted those specific trees in the nursery and provided them free of charge to the nearby communities for their groves. Kokou found that some plant species in the sacred forests are exclusively found there, and not in government regulated lands (2008, p. 163). This could be due to the human interaction within the sacred groves, a relationship that allows people to sculpt the forest to meet their needs. This is similar to how the Reforestation Project of Athiéme advertised for participation, and the actual planting in Dedekpoé.

The forest at Dedekpoé is an exception because this site had no altar present at all. The community decided, in conjunction with the primary school, to plant a forest. A flood ditch on the site hosted some trees, and it was along this ditch that we planted. Despite the absence of a "forest," the Reforestation Project leaders and touring members were encouraged at this site because the care of the saplings was under farmers, school children, and the village government, all of whom seemed prepared to work for favorable growing conditions. Teachers and administration referenced a nearby site with developed trees to attest to the likelihood of success.

The flood ditch was a convenient spot for planting, but greatly decreased the number of surviving trees after the flood of 2007. But planting a forest at Dedekpoé, where the community chose to start at square one for developing a reserved plot of land, is an exceptional note of interest. The stereotype of sacred forests as pristine, unchanged portions of native biodiversity is very apparently contradicted here, where the people decided to just plant a forest. If all 500 trees had survived, in twenty or fifty years' time the plantation might have given the impression of a forest fragment as did the groves observed by Chevalier and Aubréville in the early 1900s.

Peter Nagel's research (2004) took place in the Lama Forest, a classified forest reserve in central Bénin. His report demonstrates the biodiversity of the forest islands and accidentally elucidates the necessity of understanding the forests in context of their political and religious situation. A critique of his work demonstrates why the inter-disciplinary approach to conservation policy and biodiversity studies suggested in this work is necessary.

Nagel et al. posit that tree plantations surrounding sacred forests are buffer zones, migration corridors, and habitat that facilitate the development of the "natural" forest, the primary vegetation whose presence he credits to the Holocene's humid years as described in the introductory section (2004, p. 125). The Lama Forest's "natural" zone is located interior to the surrounding teak plantations.

Nagel et al. (2004) list a variety of floral and faunal species that are either endemic to the Lama Forest or use the wooded space as the far western edge of their territory in the eastern Guinéan forest block. These species include the trees *Azelia africana* and the *Khaya senegalensis* (two of the eight species from As.P.E.L.'s Reforestation Project). There are also an assemblage of butterflies, beetles, and small mammals such as Maxwell's duiker and the red-

bellied monkey, the flagship species of the Lama Forest. There are birds such as the white-crested hornbill, and reptiles including a newly-listed species of chameleon (Nagel, Sinsin, & Peveling, 2004, pp. 131-133).

In his discussion of the species richness, he mentions an extremely rare kind of beetle (Carabidae: Paussini; seven different types of the myrmecophilous ant nest beetle were sampled in his study) that was found in the central, “natural” forest, and a few of that species in the buffering teak plantations (2004, p. 131). He reiterates that the greatest species diversity was determined to be in that very *noyau central*, the “natural” forest (ibid.). Nagel et al. determine from their findings of beetle diversity that the buffering teak play an important role in biodiversity conservation (2004, p. 131). These buffer zones preserve the greater diversity of the interior, “natural” forest by receiving the brunt of human use (Nagel, Sinsin, & Peveling, 2004).

In the introduction to Nagel et al.’s (2004) published document, an accurate depiction of the climatic effects of the Dahomey Gap establish the presence of the forest islands; yet he claims that their destruction, resulting in their present fragmented status, is due to human pressures. The heart of the forest, called the *noyau central* that scientists consider “natural,” is also the region of the forest where the Holli people of eastern Benin origin lived until 1988, when a resettlement plan displaced them. He accredits the highest species richness to the “natural” forest –the very same place from which the Holli people were removed in 1988.

The following is a paragraph quoted directly from Nagel (2004, p. 128):

Of the different ethnic groups living at Lama Forest, only the Holli tribe –immigrants from eastern Bénin –is specialized in the cultivation of black cotton soil. Until their resettlement in 1988, about 1,200 families practiced small-scale shifting agriculture within the *Noyau central*. During the preceding five years, the mean annual deforestation

was 400ha, compared to an overall annual loss of natural forest of 300ha from 1946-1988. The former Holli land use system is reflected in the present structure of the *Noyau central* which is composed of a mosaic of fallow land of different age and successional stage, secondary forest and patches of primary forest.

Nearly every word in the above quote provides a platform for a contradictory or exploratory conversation on deforestation in the Lama Forest, and in Bénin overall, by drawing upon the historical information presented in a previous chapter (p. 11).

The political context of the dates mentioned in the above paragraph from Nagel et al. (2004) must be related to the history discussed in the previous section. Mathieu Kérékou had taken control of the country in 1972 as a Marxist leader, quickly suppressing religious activity of any kind. In 1976, he not only authorized, but ordered the destruction of the Vodoun religious sites because of their threat to his political leadership. The Holli, according to Nagel's (2004) information, *increased* in immigration in 1972. Nagel (2004) calculated the greatest deforestation rate during 1982-1987 (five years previous to the resettlement project), the tail-end of the intense "witch-hunt" years of Kérékou's quest to demoralize Vodoun and traditional leaders. (Although the religious oppression might have been relaxed in areas under the public eye such as the sacred grove at Ouidah, a UNESCO Heritage site and the newly-minted capital of Vodoun in Bénin, the physical and moral destruction might have continued in more rural areas such as the Lama Forest.)

During the very same years that Bénin underwent a series of coup d'états during an instable transition between colonialism and independence (between 1960 and 1972), Nagel (2004) notes the greatest deforestation. The colonial practice of exporting wood considered exotic was likely continued recklessly because of the nation's desperate need for cash, having

lost the financial support of France, the colonial mother country. The rate of deforestation must be studied while knowing that the standard forest cover is based on observations of touring French in the early 20th century, who were biased against the local people. The deforestation of the Lama Forest cannot be exclusively due to indigenous people's ignorance. Many factors have affected the change in forest cover since the Holocene period extrinsic to the local populations' rate of use of the woods.

Through Nagel et al.'s (2004) publication, the local people are simply presumed to have been the reason for the loss of forest cover since 1946, when the French colonists classified the Lama Forest. After classification according to Ribot (2001), the colonial policy restricted the local population to usufruct rights. A broader range of study that includes the religious and political history of Bénin expands forest conservation to the point that scientists must re-consider the effects of the indigenous people's presence, as well as the status of the vegetation reportedly in steep decline. Scientists readily acknowledge the climatic causes of the Dahomey Gap and the uniqueness of the floral and faunal diversity therein, but continue to castigate the local population.

In light of the brief introduction to the complex Vodoun religion, philosophical patterns, and history of the forests in the preceding chapters, Nagel et al.'s (2004) work maligns the population who relies on the natural resources of the forest. Nagel et al. (2004) discredit the Holli people in their incomplete study of the history of their relationship with the Lama Forest. Granted, the study does not focus on the history; but for that very reason, these scholars handicap their ability to accurately represent data about ecological processes between teak and "natural" forest.

The publications discussed above by Nagel et al. (2004) and Kokou (2007; 2008) highlight two important aspects of sacred forests: the insufficiently explored impacts of the forests on the regional biodiversity and over-all conservation, and the undue disrepute of the local population. Although Kokou (2008) recognizes the destructive effects of the withdrawal from indigenous systems as part of the forests' threats, he relies on the deforestation statistics supplied from the Food and Agricultural Organization of the United Nations (FAO). Much of the statistics in the FAO documents are inaccurate, per the studies by Fairhead and Leach (1998), because they employ the biased points of view against the local inhabitants in the early years of European advance. Sacred forests in the Dahomey Gap, especially southern Bénin and Togo, are ideal reserves for vegetation and animal biodiversity, but their management relies on the communities who sanctify them. Therefore the policy that desires to protect the sacred woods' natural resources should incorporate the associated religious authorities in earnest.

Further contributing to the rich biodiversity found in sacred groves comes from northern Ghana. Jan Decher (1996) conducted research on the biodiversity of small mammals in the forest fragments, including cane rats, bushbucks, duikers, and fruit bats. These animals act as predators, seed dispersers, and prey in the complex ecosystem within forests. Decher (1996) impresses the richness of these wooded areas by describing their roles as seed banks for flora and habitat for small mammals (Decher, 1996, p. 1012). He considers the groves as 'stepping stones' (1996, p. 1020) in the ecological hypothesis of source-sink ecosystem dynamics. This hypothesis states that species diversity can be dependent upon and related between varying sizes of tracts of land. In this case, a larger, continuous forest would act as a source for the small sacred groves, which are sinks for floral and faunal diversity.

Most of the peer-reviewed literature concerning the scientific measurement of sacred groves, as well as anthropological and religious literature, assume destructive effects of humankind on their surrounding natural environment. This work's greatest achievement would be to turn forestry and scientific research from the desperate point of view of salvaging the remaining fragments to an approach that respects the adaptability of the people who sanctify the groves. Humans have a very important role in both the destruction and construction of the natural world. Both effects should be considered in context of the people who compose the social institutions that shape sacred groves. This recursive process must be understood on the terms of the indigenous people and endemic values before effectively preserving natural resources in sacred groves.

Conclusion

European written records since the mid-1700s affirm Beninese oral history that the population has long relied on pockets of forest vegetation for their physical and spiritual fulfillment. These practices have withstood centuries of abuse, including the colonial forestry administration at the turn of the 20th century, followed by the then-newly independent Beninese government in the 1960s. The presence of sacred groves in the Beninese landscape, despite the many sources of human pressure, challenges the assumption that wooded areas are quickly disappearing. Instead, sacred groves are a means by which the local population contributes to the preservation of natural resources.

The present work about sacred forests in Athiémé, Bénin, contributes to the literature and points of views in the field of forestry and international conservation. A general introduction to Bénin gives an overview of the region in question, followed by descriptions of the literature in history, theory, and religion supporting first-hand knowledge from Peace Corps experiences. Those chapters' subjects extrapolate the intangible elements of sacred groves. This cumulative knowledge, applied to scientific studies of sacred forests and their contribution to ecological conservation, indicates the direction of further study. The application of scientific data should filter through the cultural context for a best fit *in situ*. Further studies in Forestry in Bénin should focus on the vegetation present, and how the mosaic of savannah and forest fit ecological mathematical models of patch dynamics and source-sink theories. The breadth of interdisciplinary knowledge reconfigures the practice of forestry in international settings.

Structuration Theory encapsulates the recursive process between sacred forests and the communities who sanctify them. By adhering to the rituals taught by their parents and grandparents, the current community maintains the sacred groves, indirectly preserving the

inherent biodiversity of the areas. When the social structure is weakened, the principles that affect individuals' priorities change the appearance of the systems that embody those principles. People who live near the trees rely on them for physical protection and/or nutrition; in turn, the familiarity allows for Vodoun leaders to interact with the spiritual entities present. With a general fear of offending spirits, the public relies on specialists' ritual communication to use the groves' resources, thus modifying their behavior and indirectly managing the wooded location.

For example, foreigners have occupied the town of Athiémé since the end of the 19th century. The increasing French priorities weakened the indigenous ones to the extent that no sacred grove remains in the town of Athiémé, despite the presence of such a grove in all of the nearby towns in the *arrondissement*. There are, however, *legbas* in discrete places in Athiémé, and the manner in which CERPA spoke of sacred groves signifies the underlying, and perhaps resurfacing, faith in traditional values inculcated through Vodoun practices.

The conceptualization of the domain for spiritual entities is represented in Figure 1 (p. 17). Inside the village center (level 1), the spiritual world is familiar and regularly encountered. People often pour libation and host ceremonies in their honor. Farther from the village center at level 2, the spirits are less often interacted with and are less familiar. At level 3, well beyond the regular interaction of people's daily lives, the spirits are considered whimsical and capricious. Specialists in spiritual communication are necessary to read the signs the gods speak through in order to utilize any of the space in that domain (level 3).

Sacred groves are important places for the Beninese to fulfill spiritual obligations and learn the languages of the deities. Some Beninese would be more likely than others to make promises or sacrifices at the altars of Vodoun deities. But as a Peace Corps Volunteer, most

Beninese professing Islam, Catholicism, or no particular religion at all could nonetheless relate some familiarity with Vodoun practices. The groves are reserves that represent and re-create the social values endemic to Beninese society, and the philosophy that creates and perpetuates the use of such methods is pervasive. Regardless of whether a Beninese person frequents the groves him- or herself, he or she is likely to be familiar with what the area means.

A resurgence of Vodoun faith practices, especially in highly westernized areas such as Athiémé, could indicate the general population's desire to establish themselves apart from the imposing Western world. In a "developing" nation such as Bénin, policies intended to reduce impoverishment in all aspects of Beninese life –education, environment, sanitation, etc. – undoubtedly emit the cultural tones of the nation where they are created. An emphasis on indigenous priorities such as those in Vodoun could strengthen the social systems that manage sacred forests, in turn preserving natural resources without great effort from international development institutions. This does not imply a "return to the native," but is a suggestion toward decreasing international pressure on local populations.

The philosophy of Vodoun emphasizes the cycle of community membership Figure 2 (p. 47). This means that people are cognizant of their perpetuation of the family line, and the effects of their behavior on the harmony within the family and the broader community. Adults can become trained in spiritual communication, which facilitates people's supplication to the deities for spiritual direction and assurance, as well as for giving thanks. As long as the deities are satisfied with the attention and generosity of the community, then they are willing to work with people to accommodate their needs.

This work directly affects further study on the sacred groves of Athiémé. To better speak to all parties concerned in forest conservation, this work needs to encompass the measured biological contribution of the five wooded areas in the Reforestation Project. Research in the field of forestry is capable of responding to questions pertaining to each forest's flora and fauna and the effect one forest's species composition might have on another –is such shared biodiversity significant, or even possible? From what size of forest cover, at least? And at what distance? Delving into this research could reveal unique and important contributions to the study of patch dynamics in ecological models.

With interdisciplinary study of sacred groves, from religious studies to forestry, creating conservation policy should become better adapted to West African and Beninese situations. Deforestation read from the ground up, rather than from an outsider's observations, reveals a plethora of other explanations for the change in forest cover in Bénin. The Dahomey Gap and oil palm propagation, war refugees, and spiritual and physical needs of the human population are placed in relation to each other that provoke a scholar to reconsider the current methods of developing conservation policy. To be certain, growing population and changes in lifestyle significantly affect land use. There should be no suggestion toward reverting to pre-colonial clan rule; yet the philosophy of social harmony and God-like presence in forested areas prevail in Bénin, and can be incorporated in such a way as to have a positive effect on the application of development activity in any domain, especially natural resource conservation.

At the beginning of the Reforestation Project, I thought that I had solved the entire problem of deforestation in Bénin; in the end, I realized how little I knew. Initial ideas based on pre-colonial and colonial-era sources might mistake to an important degree the dynamics of people and the ecological situation. This mistake indicates that sacred forests present ideal means

to preserve native, virgin habitat via pre-existing and widely accepted management systems. Research offers more complex social structures and profound histories concerning sacred forests, revealing long-standing practices of modification by the humans who create them. Sacred forests have a variety of social functions, coincidentally preserving biodiversity and natural habitat to some extent. Even though ecological protection is an indirect consequence of the human design of a sacred forest, the resources are capable of supporting biodiversity. The intersection of science and society is of primary concern in West African sacred forests for international, national, and local objectives to preserve livelihoods dependent upon the natural resources, and conserve the resources susceptible to human consumption.

Sacred forests in Bénin are possibly a boon to culturally sensitive environmental policy and the conservation of biodiversity. An earnest attempt to incorporate sacred forests into national and international policy demands a thorough review of their cause for existence. Even though environmental degradation anywhere in the world cannot be ignored, not just any or every tree can be protected by national law. The manipulation of the natural environment as seen in sacred forests shows that people in West Africa relate to the natural environment through processes relevant to their social ecosystems. These forests cannot become part of environmental management on the basis of their trees alone.

The directional question is not about whether the forests are disappearing or appearing; rather, I ask what are these forests contributing? Ecological study quantifies the endemic and rare plant species harbored in sacred groves and the small mammals that take shelter there, increasing the groves' worth in terms of biodiversity. These forests are present for more reasons than the natural resources: social and religious systems are embedded within. Further scientific study

must recognize and work within this structure. With the confluence of knowledge, sacred groves can be appreciated for their trees and everything else they contain.

Addenda

Addendum A: History of Athiémé

On the west coast of Africa in south-west Bénin, there is a region called the Mono. The Mono River, a principal source for the population, begins in the north in the region of the Atacora on Mount Alédjo, and empties into the Atlantic Ocean 490 kilometers south. There are many villages and towns along this river, but there is one that sounds important –the town of Athiémé.

In the native language, *Atihewémé* means “in the white woods”. People were at ease here in the ‘white woods’ beside the Mono River, because they found everything they needed. The forest that covered the Mono River valley was rich in game for hunters. Fishermen found fish in the river, and the fertile land rendered cultivators satisfied. The entire population ate their fill. Field work began in the rainy season, when cultivators planted corn and cassava. During this wet season, the vegetation of Athiémé was abundantly green. This vegetation consisted of trees, particularly the *samba* that was known for its white wood, the *fromagiers*, *irokos*, *baobabs*, *caïcédrats*, and many others. Animals were aplenty in this area: rats and *agoutis* (bush rat), antilopes, monkeys, deer, wild boar, squirrels, crocodiles, lizards, many kinds of snakes, and hippopotamus. The birds were partridges, Guniea fowl, toucans, *courbeaux*, hawks, weavers, and millet-eaters.

The first to arrive in this area were Adity Donou and his nephew, Akoubalaty. Donou came from Toffo, near Allada, in the 17th century to flee the intertribal wars of the Fon of Dahomey. His nephew came of Aklakou in Togo, some time after his uncle. The population of Athiémé grew in clans. The three principal clans were Adanlokpé where Donou lived, and which means ‘that the anger stops’, referring to the anger of the wars that he fled. Gbedji, which means “in the brush,” was the section for the shelters kept near the fields, and Athiémégan where Akoubalaty lived. Each clan had a chief of family that directed the men, women, youth, and children. Athiémé did not have a king, but a chief that governed with his council. The commerce of the period was mainly red oil, palm oil, corn, and cassava, supplemented by meat and fish. Some of the market exchange was done with money –cauris and centings and kadegas –but also by exchange. For example, buyers and sellers would negotiate a quantity of fish for a quantity of tomatoes of the same value.

People communicated through different oral methods between clans and between villages. Some messages were transmitted through the cries of an animal horn. A *gon-gonneur*, town crier, would announce messages by spoken voice after having attracted attention by tapping on the metal of his *gon*. A variety of drum rhythms communicated diverse messages: the chief could invite people to him through his speaking drum, another rhythm announced a death, or meetings, or gatherings. For a very important message, the chief would send a courier with the *kpovissi*, an embellished baton that verified the authenticity of the chief’s message. The population travelled by foot between homes on narrow paths. The chief was carried in a hammock, and everyone crossed the river by dug-out canoe.

The drums also served in leisure activities such as dance and music. This was often beneath a full moon, when the elders told tales. The people organized games for their distraction, including *jeu de quille*, a game played on a cross-hatch design on the ground. Each point of crossing lines has a nut or piece of gravel. Two teams face each other while tossing pieces onto the game board to knock out the other team’s pieces within a time given for playing. Other games included *awamé*, known today as dominos (or mancala), *zangbato*, and hide and seek.

In old times before the arrival of foreigners, there was one religion: vodoun. There were many sects that worshiped a variety of *fétiches*, such as *Hêbisso*, the divinity of thunder, *sakpata*, or the earth divinity, *Ogou*, the god of iron, *Dan*, the divinity of the python, and *Tohossou*, the god of the god-monster (?). The array of divinities all pay tribute to one God. The chiefs of the *fétiches* surveyed and directed the religious practices of their particular sect. Everybody who was part of a *fétiche* was called *hounon* –this included the adepts, the *féticheurs* men and women, and the participants of the vodoun cult. The *assujettis* or *voudounsi* were taught in the convents, or schools, located in a particular region of the forest

considered sacred because of that use. It was here in these convents were pretenders to leadership status for that certain *fétiche* learned language and practices special to that cult. Each *fétiche* had its own drum with languages coded by rhythm, all of which were memorized by the adepts, the initiated. The different sects were further distinguishable by symbols, clothing, and worship practices. Those who were not part of a *fétiche* were called the *Ahès*. Perhaps these people were like the atheists of today, or maybe this was the name given to foreigners, non-initiated in the region's particular sect of vodoun.

An example of how vodoun works can be demonstrated through field work. Before beginning, the chief *féticheurs* would consult the *mânes*, or oracles, and according to the indications given by this oracle, the *chef féticheur* knew the specific manner in which to do a certain sacrifice, how the drums should play, all of which was done in order to have a successful season. Another example is the *legba*, manifested in a statue at the entrance to habitation for protection. The Athiémégan neighborhood houses the *tolegba*, the home of the *legba* (*to* means 'home' in Guin), of the entire town of Athiémé. The faith of this religion is also constituted by a system of healing. A healer knows which words to say to a *fétiche* that invokes the *fétiche* to give sign of what is necessary to know the illness. After knowing what type of illness the person has, the healer draws from his knowledge taught in the convents to know which sacrifices, methods, or advice is required to provide to the sick.

Between 1885 and 1891, foreigners discovered Athiémé. They first met Akolèno, the chief of Athiémé in those times. The foreigners brought their lifestyle to Athiémé, which modified the daily lives of the autochthones. House construction changed from worked earth in circle to buildings of cement in square. The path, previously only supporting foot traffic, were widened and reinforced in order to accommodate vehicles.

The Fon invasion of 1891 is a turning point of Athiémé history and especially so in terms of the local population's relationship with the foreigners. The Fon invasion was too strong for the Athiémé forces alone, and without the help of the foreigners, the entire Mono region would have become part of the Kingdom of Dahomey. If that had happened, the entire Athiémé population would have become Fon prisoners and sent off to be slaves. However, successfully aiding in repulsing the Fon attack, the foreigners found a permanent place in the Mono. The foreigners successively established themselves as residents, chiefs of post, commandants of the Mono region and then state, and chiefs of both the region and the state in 1943. Important commerce such as CFAO, J. Fabre, Valla and Richard, Cica, John Holt, and John Walden preoccupied the entire population. A railroad was constructed between Athiémé and Grand Popo, on the ocean, to facilitate the transport of such merchandise at the beginning of the 20th century.

Today, a person newly arrived in Athiémé wouldn't know that this village was built for hunting and had become an important commercial and government center. In its glory, Athiémé had 100,000 inhabitants; today's count is about 20,000 people. If this newly arrived person understood the language of *Guin*, he/she would wonder why the name of the town implied a wood of white, for very few *samba* trees remain.

Many aspects of nature have changed. The lack of trees also means a lack of habitat for animals. Although some animals remain, the diversity has been lost such as had been before. It is an extraordinary event for someone to see a deer these days. Nearly the only animal that is not killed is the python because of its reverence in vodoun. The nature of the Mono River has changed in many aspects after the installation of the Nangbeto dam in Togo. After this dam was in place, the flood periods and the force of the water was greatly decreased, and in times of drought the river is even lower because of the retained water for the generation of electricity. In normal times, the river's current is quicker and straighter than before the dam, which has also affected the river basin. The dam does not permit the passage of migrating fish that live in the deepest holes, now the lake created by the dam, and consequently cannot pass through the concrete barrier. Obviously, without these animals the previous lifestyle that was satisfied by hunting and fishing and some agriculture is no longer feasible. Modifications are required in order to meet family's daily needs, such as adding jobs or completely changing occupations.

Today men and women have public positions such as professions in public schools, at the mayor's office, the customs agents, or the local militia. Other people work in non-governmental organizations,

others in services such as hairstyling or as a seamstress or tailor. Men make some money as moto-taxi drivers, the most common means of transportation nowadays, while other men drive car or van taxis or rent trucks for hauling merchandise. Yet other people work in commerce; although the major commercial businesses are gone from Athiémé's commercial heyday, there remain small shops for basic foodstuffs and stationary supplies resold from the major trade centers of Cotonou and Lomé, Togo.

The farmers harvest plenty of corn and cassava when the rains are sufficient, and not flooding the fields. In general, every family has a field of corn, but some harvest for their personal use, and others harvest for sale and for personal use.

Athiémé lost the position of capital of the region and state in 1960 because of a fire in the mayoral building that destroyed governmental records, as well as the periodic floods that prohibited entrance to the town. The remaining administration in Athiémé is that of the commune level, one of 77 others throughout the nation of Bénin. The commune is similar to an American county, and Athiémé's is divided into five arrondissements, or townships, each of which has a government-elected leader. Each village has a chief, except for the town of Athiémé which sends delegates from each neighborhood to the commune's mayor's council. The mayoral administration numbers 11 members, from which the mayor's position is elected.

The communication has evolved with the time. What was done by animal horn in the day is now transmitted by cell phone. Written letters are mailed by the postal service. News passes on the radio and television. Local and/or urgent messages are communicated by the town crier, the *gon-gonneur*, who passes through every corner of the town to alert the population to the news.

Politics and sports are the main attractions in Athiémé, without which the town is usually very tranquil. Sports are a very popular distraction for the town of Athiémé and the surrounding areas, either as participants or fans. There is soccer (football), basketball, track-and-field, and handball. Games also include the customary games listed above such as *quille* and the dances and drumming. Musical talents now incorporate choreographed moves to modern music, as well as traditional. Story-telling remains a popular pastime, and a truly skilled person knows how to capture the audience. In town, people regularly play *pétanque*, dominos (mancala), or card games. Children attend school during the day, and after chores at home, can watch movies on small screens in simply constructed shelters. The Reading and Cultural Activities Center (CLAC) supplies the equipment for many of those games, and also provides Monopoly, UNO, and other traditional games. The reading room has research books, novels, and newspapers and news magazines, as well as literature.

Christianity has gained a stronghold in Athiémé, both as Catholic and protestant; however, vodoun is still very present in the area. The *tolegba* remains in Athiémégan, and another *legba* is visible at the town's market area, in the center of Athiémé. Certain sects of vodoun are apparent in Athiémé, especially when the people perform ceremonies or dance through the town in their significant clothing. These ceremonies often take place on market day, similar to the Christian's Sunday. Islam is also present and practiced by a small portion of the population. The neighborhood containing the mosque is called "zongo".

What was once called "clan" is now "neighborhood", and Athiémé has four. Three are the previously mentioned Athiémégan, Adanlokpé, and Gbedji, with the addition of Angiwedji. In each neighborhood, there is a mix of architecture, some homes in cement and others in worked earth. Athiémé's roads are still reinforced gravel.

The town is cosmopolitan with many ethnicities present, but there are four main groups that predominate. These are the Kotafon from Toffo, the Watchi from Houantchin, Togo, the Guin from Ghana, and the Adja-talla (Aja) from Tado, Togo. Each ethnicity has its own language, but Kotafon prevails in most places. Each ethnicity can be distinguished by its general preoccupation: the Kotafon are traditional agriculturalists who work the arable, fertile lands; the Watchi are specialists in fishing, with supplementary cultivation. The Guin first arrived from the east with the foreigners, which gave the impression of being more 'civilized' than the others. The Guin were more acquainted with the foreigners' way of life. The Adja (Aja) work the black and clay-filled soils, and also fish and work in small commerce with an open and sharing spirit.

Athiémé is full of potential. The town awaits the population to take charge of its development. A bridge has been requested over the Mono River; the absence of this structure handicaps Athiémé's growth, especially since this crossing, still done by dug-out canoe, is frequented by commercial traffic between Togo and Bénin (the customs are more flexible here). With a bridge, Athiémé would no longer be restricted by river traffic, and could greatly facilitate and regulate Ghana-Togo-Bénin-Nigeria commerce. The description of the town suggests a possibility of tourism, which would be another means of improving economy and at the same time valuing the nature of the region, such as ecotourism along the river. There are five primary schools, one of which is private, and two secondary schools, one of which is private. The public secondary school regularly achieves some of the best test scores of the Mono, and has trained some important people from Bénin, notably Jean Pliya and Doctor Emile Derlui Zinsou. The people are well-disposed to work together and bring needed change to Athiémé. Athiémé is a unique place in Bénin. Its past and its potentialities together promote a great future.

**Pâte*, the staple food of southern Bénin made of corn, is not sold in Athiémé today, which is remarkable because in all other localities, *pâte* is always readily available. This is because one day, as Akoubalaty was returning famished from his fields, he asked for some *pâte* from a woman who sold the food. When she demanded he pay, Akoubalaty was so affronted that he should be expected to pay for food in the village he founded that he refused that it be sold forevermore in his town. He said that neither he nor his descendants would ever pay for such a basic necessity in the own home. Consequently, the autochthones today request *pâte* from women in the market by saying, "prepare some food for me," rather than sell, when they need to eat out of home.

Addendum B: Video contents

The total video is over an hour. Much of the footage is of people walking through vegetation and making speeches related to Tree Day, all of which is either set to music by the editor, or was filmed with music playing. Those speeches are mostly unheard because of loud music in the background; also, none of the speakers focus on the particular situation of the sacred groves. Other parts of the video contain spontaneous dialogue about these planting sites. The video is not perfect, but the most revealing moments are comprehensible. The following parts are the author's translations and transcriptions of the *Kotafon*-French and French-French exchanges between the Volunteer, Zinsou (president of As.P.E.L.), and the invited members of the touring group including the *chef féticheur* (religious leader) of the Mono state, two representatives of two separate environmental protection organizations, and the local militia (*gendarmes*) and Forestry administration.

Angiwedji

In Angiwedji, the forest followed the curve of the river and was joined with the riparian trees, yet was easily distinguished because it was located in the village itself. An altar was housed in a building visible from a path at one of the entrances. The altar included a structure representing the deity that resided in the grove. This village was a thoroughfare for Togo-Bénin market traffic, with a bare dirt landing for crossing the Mono River by *pirogue*. This was the largest forest in our project plan based on sight judgments.

The plantings in Angiwedji were located in an open field adjacent to the altar seen from the road. This open section of forest was not apparent previously because it had been covered in tall grasses. The 500 trees the people of Angiwedji planted effectively increased the area of the sacred forest by at least half a hectare (the area was not measured exactly). This site, nearest the river, was the hardest hit by the Mono River flood of 2007. Of the 500 saplings planted, only four were counted in the 2008 follow-up survey.

Zounhoué

The first stop on the second tour was at the forests of the village called Zounhoué. This forest was on the outskirts of Zounhoué on the grounds of the *chef féticheur* for the entire region, whose participation was necessary to validate and conduct the project. He planted his trees in his personal consultation forest which was not available to us, as well as in his botanical gardens. Instead of entering his grove where he had planted most of his trees, we toured a connected sacred site that was not for his personal use, and his botanical garden. Although the private forest remained unavailable, the tour of surviving trees in 2008 recorded fourteen saplings in the botanical garden. The following cross-cultural exchange took place at this connected grove, at the delimitation of the sacred zone. To pass into this zone, I would have needed to remove my shoes; none of the group did so, instead remaining on the edge. No one had any religious intention, so none entered. The members discussed while regarding the vodoun, here sheltered in concrete.

Goudon

A second forest near the village of Goudon was notable because of the surrounding agriculture –the trees were by far the tallest things around. This forest was the most removed from any human habitation. However, because the leader concerned was active in creating fire breaks before clearing fields, this grove appeared to be one of the best maintained. The altar at this site was at the base of a towering *iroko* tree –to attain this spot, I followed foot trails beneath other such towering trees, surrounded by six-foot and higher grass. I calculated the highest survival rate in this forest –the most distant from the Mono River flood plain – with 112 surviving trees in 2008.

Condji-Ougba

A third forest at Condji-Ougba was amidst the village located along the asphalt highway. This forest purported an important reputation of having a spiritual force strong enough to strike a woman dead if that woman had not confessed to marital infidelity. No one in the project group entered this forest, but we could easily see the altar that was at the center of the grove. The statue of the *vodun* was shrouded by cloths draped over a stick-built frame. Planting here was difficult because the village had completely surrounded the forest, leaving very little room for appropriate plantation. For that reason, many trees had been planted near the well on the edge of the village. Despite the village's relative distance from the flood

basin, the tight planting might have affected the survival rate more here than a surplus of water: seventy trees were counted here.

Dedekpoé

The fifth forest at Dedekpoé is the exception mentioned at the beginning of this section. This site had no trees or altar present at all. The community decided, in conjunction with the primary school, to plant a forest. A flood ditch on the site hosted some trees, and it was along this ditch that we planted. Despite the absence of established trees, the project leaders were encouraged at this site because the care of the saplings was under the care of farmers, school children, and the village government, all of whom seemed prepared to work for favorable growing conditions. Teachers and administration at the school were responsible for planting and maintaining the saplings, and referenced a nearby site with developed trees to attest to the likelihood of success.

The flood ditch was a convenient spot for planting, but greatly decreased the number of surviving trees. I counted sixty trees at Dedekpoé; this is more than Angiwedji, which is located directly on the Mono River. The current at Angiwedji would have been much more destructive than at Dedekpoé, where flood over-flow mostly pooled, without a strong current.

The combination of information from the different people provides multiple frames for the study of sacred groves. The mystery of the trees invokes a discussion of philosophy; the communication with invisible –deceased –members of community is also relevant in philosophy. The reciprocal relationship between the people who rely on the produce of the woods and the spirits who *y resident*, who reside there, depict a sociological theory called “structuration”, and the changes inflicted on the sacred forests follow the political atmosphere of the nation of Bénin.

Addendum C: Schematic plan of Athiémé and Reforestation Project forests

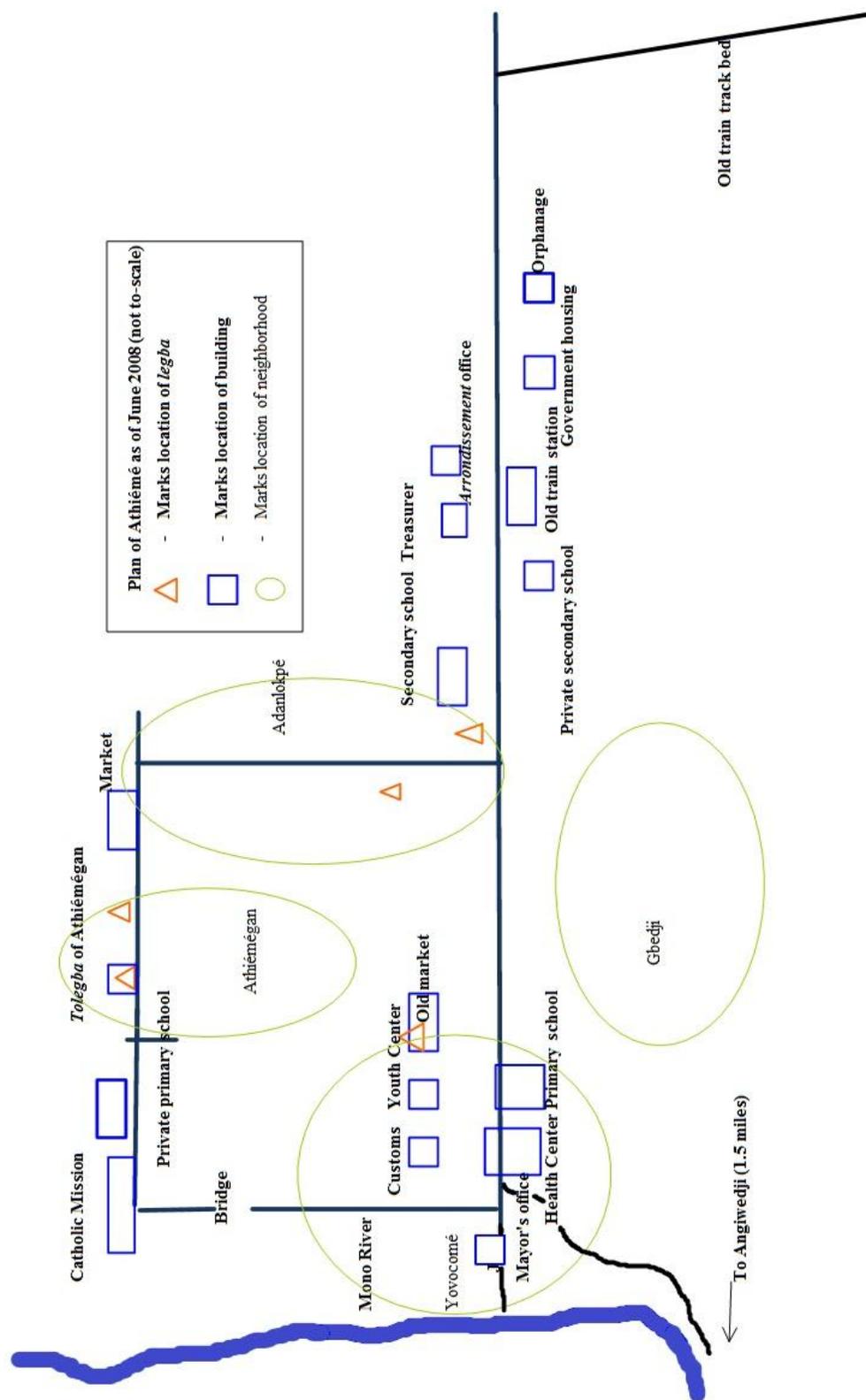


Figure 3. Plan of Athiémé, town center

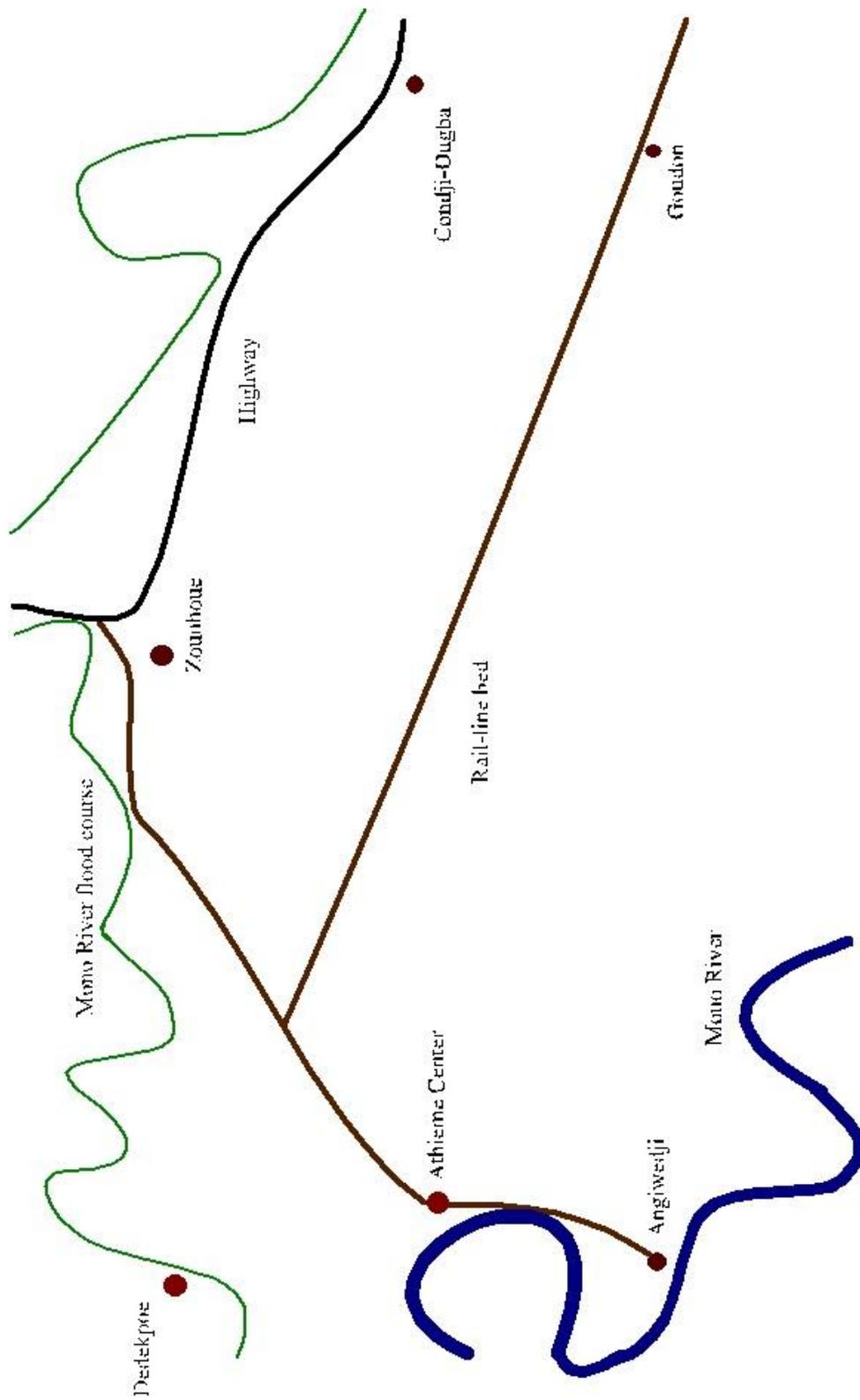


Figure 4. Plan of Athiémé Reforestation Project forests.

Addendum D: *fâ* consultation

I held 200 FCFA [about \$.40US] in my hand with a small dried seed from the anti-prostate plant [a medicinal plant often used to infuse with *sodabi*, and reported to prevent prostate cancer], said to the mixture silently, “How will things turn out?”, and then put the money and seed into the shell next to the *féticheur*. He asked for my name, and then began the ceremony. He first held three chains with some kind of half-of-a-seed, like a nut’s casing, linked equidistant from each other along the small chain. He danced the three chains all together around the money and seed I had set down, and gently folded the chains over the question mixture, all the while speaking what seemed to be the language of the *fétiche*. He then ran his hand through a jumbled pile of small shells, anti-prostate seeds, small bones, and other odds and ends. I saw a spark plug in there, too. [This assembly of items could represent materials associated with different divinities.] All the while he was speaking, or chanting I could say. At the end of this, he selected a small handful of pieces from the pile and set them aside. He again took up the three chains. The first one he tossed at once and left alone until the very end of the ceremony. The second and third chains he tossed out alternately, one after the other, still chanting, eventually leaving the second one still and continuing for a while with the third only. He then had my friend translate [who had accompanied for this reason] from Guin to French: the *féticheur* wasn’t quite sure what I needed, what the response was getting at, which makes sense because I didn’t have a specific question, anyway. I was supposed to buy vegetables of some sort, lettuce, cabbage, potatoes, etc, [popularly considered “white people” food] to have a ceremony that would help me to know the future. The *féticheur* would have put these vegetables in the Mono River, and then I would have bathed in that water while concentrating on my questions of the future.

He forewarned me that I would have stomach aches in the near future, due to a person or to people poisoning me, not to kill but to get me to stay in Athiémé. He said I am very open with people, but I need to be careful of with whom I am eating, with whom I am in general. To avoid these bellyaches I need to buy a pullet, rub it on my belly until it dies, and then give it to the *féticheur* to do a ceremony with. He said, specifically, that I had come to do something in particular, some work, in Athiémé, but that this person or persons who love me were like trying to get around me and make me stay. At this point he asked if he’d answered my question. Mostly he had, considering how vague the question was to begin with. As he closed, again tossing the chains a couple of times, he added that if I wanted, I could buy a pigeon, write all my desires for the future, and then ceremoniously release the pigeon. He reiterated that I need to be careful of my company, to take care to not eat with just anybody. He stated that I am very open and consider everyone as I do myself, but that I am very nervous (and this evening, really most evenings, that observation is very true). And then we left.

I am impressed and not impressed by the ceremony. He said a lot about of what I was thinking, as vague as my question was, and a lot about myself for not knowing me too personally, and mostly hearing about me rather than speaking. But, then again, he didn’t say anything too out of range for knowing the people with whom I am often, and for being able to read a person. But I suppose those are skills themselves, to be that observant.

Addendum E: chart of surviving trees.

Table 1: Number of Surviving Trees in June 2008 from Reforestation Project of 1 June 2007 in Five Sacred Forests in the Commune of Athiémé, Mono, Bénin

Tree species	Forest location	Angiwedji	Dedekpoe	Goudon	Condji-Ougba	Chef Feticheur Zounhoue	Total
Baobab (<i>Adansonia digitata</i>) (non-native)		0	0	21	0	0	21
Somba (<i>Triplochyton scleroxylon</i>)		0	11	6	8	0	25
Terminalia (<i>Terminalia superba</i>)		0	0	3	0	0	3
Caïlcidrat (<i>Khaya senegalensis</i>)		3	18	15	9	0	45
Saucissonier (<i>Kigelia Africana</i>)		0	6	27	37	14	84
Lingue, ou Haricots acajou (<i>Azelia africana</i>)		0	2	1	1	0	4
Iroko (<i>Chlorophora excelsa</i>)		0	19	34	13	0	66
Faux Iroko (<i>Antiaris africana</i>)		0	0	5	2	0	7
Unidentified		1	4	0	0	0	5
Total		4	60	112	70	14	260
Total		260, 13% survival rate					

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