## Patrimonial Perceptions of Local Communities and Forest Management: Case of the Monogaga Protected Forest, Côte d'Ivoire

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It is often assumed that forests can contribute to poverty reduction. To achieve this objective, different approaches to improve the governance and management of forests have been explored, including community forestry and other participatory arrangements for forest management. Sometimes conflicting approaches to land classification and land use by state forest authorities and local people can undermine the potential for forests to meet local needs and contribute to livelihoods and poverty reduction. In Côte d'Ivoire (Ivory Coast), parks, reserves, and protected forests are considered as national natural patrimony (heritage) to be conserved. Their management seldom involves the local communities who live around or inside them in a participatory approach. In the case of Monogaga, Sodefor (Société de Développement des Forêts), the official manager, decided to co-manage the forest with the Wanne people who live in the forest. After a period of conflict, the official manager, Sodefor, intended to apply a new management plan. But before doing this, the manager wished to understand why the Wanne people do not consider the forest as a heritage to conserve and transfer to their children. The present study addressed this question.

Local communities recognized several spatial units in the Monogaga Forest: gbadu (swamp areas), kporo ("black" forest), teteklwoa (old fallow), and piti (young fallow). Lineage heads control and guarantee respect of the access rules to these units. Sodefor divided the forest into two zones. Each of them corresponds to a precise designation: one for agriculture and another for conservation. Based on the access rules of both managers (the local people and Sodefor) to the different units and their resources, the study showed disagreement between the perceptions of Sodefor concerning the organization of activities and those of Wanne farmers.

For Sodefor, the forest ecosystems constitute a national heritage to conserve. For farmers land is inalienable and some of its resources constitute the heritage (or inheritance) of the lineage. In the latter case, the use of land and resources obeys complex access rules. These traditional access rules to land and resources are still used in Monogaga. In its new management plan, Sodefor should include the lineage heads, who play an important role in these systems, in the structures of negotiations. Sodefor should take into account local communities' perceptions of forests.

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#### Introduction

Like most African countries, Côte d'Ivoire has not escaped from international thrusts to establish natural resources as permanent heritage (Cormier-Salem and Roussel 2002). Here like elsewhere, the movement to conserve natural heritage is a response to the dynamics of degradation and abuse, deforestation, and loss of biodiversity.

In Côte d'Ivoire there are two United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserves, which have the status of world natural and cultural heritage. The country also counts nine National parks and many Reserves. Nearly 25% of the country has the status of (inter)national heritage.

Establishing natural heritage is not a new phenomenon in Côte d'Ivoire. During the colonial period, between 1925 and 1945, 66 reserves were created (Ibo 2000) and all corresponded with forest ecosystems. This early passion for the forest justifies itself perfectly in the context of colonial exploitation, when the forest resources of Côte d'Ivoire decreased quickly. According to the colonizers, this decline was attributable to indigenous populations wasting the resource. The establishment of natural heritage leads stepwise to livelihood changes among local populations. In giving up timber exploitation, local populations have transformed themselves into cocoa growers (Verdeaux and Alpha 1999).

In the choice and the delimitation of protected areas, the State of Côte d'Ivoire depended on environmental nongovernment organizations (NGOs) such as the World Wide Fund For Nature for Comoé Park located in the northeast and the World Conservation Union (IUCN) for Taï National Park in the southwest. Thus, several forests of southwest Côte d'Ivoire have been protected. They form a part of the *Guinean West African Hotspot*, which encompasses all the vestiges of the old Western Guineo-Congolian forests, among them the Monogaga Protected Forest (MPF).

The losers in the process of forest heritage creation in Côte d'Ivoire have been the local people. During colonial times and also at the beginning of independence, populations were often moved before the classifications and when they were finalized, they were seen to impose access restrictions, which generated multiple and sometimes very violent conflicts. Local populations lost their rights of access to space and resources and sometimes the rights to essential traditional sites: thus the Mount Niénokoué sacred mountain of the Oubi people is now inaccessible for worship rituals because it is included in the Taï National Park (Adou Yao et al. 2005).

Because local people were not associated with the establishment of the protected areas, currently, most of them encroach as hunters (Caspary et al. 2001) who technically become poachers, and the forests are also infiltrated by farmers, in particular the growers of cacao trees. In 1996, the area of farms that had "infiltrated" parks and reserves was estimated at 630,119 hectares (considering only classified forests, FOSA [2001]). In most protected forests of Côte d'Ivoire, farmers and hunters continue their daily activities as if these forests were not heritage sites to be conserved. In the case of the MPF, the Wanne people protect only some parts, and not the entire forest.

Faced by this phenomenon, managers are asking themselves why local people do not consider parks, reserves, and protected forests as heritage areas to be conserved. To try addressing this question, through the case of the MPF, this study will show forest categorizations by the Wanne people and Sodefor, the official manager of the forest. Then, it will analyze the access rules to each unit described. The discussion will try to show why Wanne farmers do not consider the forest to be natural heritage.

## **Materials and Methods**

#### The Study Area

The MPF is located in southwestern Côte d'Ivoire (Figure 1). The forest was classified in 1973. It covers an area of 40,000 hectares, spanning two districts (Sassandra and San Pedro departments). The landscape of Monogaga is uniform and less than 130 meters above sea level (Béné et al. 1995; Chatelain and Piguet 1999).

The forest is low-altitude rain forests (Guillaumet 1967; Guillaumet and Adjanohoun 1971). It is characterized by several types of vegetation: old growth forests, mangroves, secondary forests, littoral bush, plantations, and farms (Adou Yao and Roussel 2007). The flora is diverse: *Eremospatha macrocarpa* and *Diospyros mannii*, in low-lying areas; *Diospyros* spp. and *Mapania* spp. in the interfluvial zones; plants on hydromorphic soils, and coastal formations. Several Upper Guinea endemic species (*Anthonotha sassandraensis*, *Trichoscypha baldwinii*) and threatened, rare, and endangered species (*Gilbertiodendron splendidum, Placodiscus attenuatus*) can be found in the MPF (Adou Yao 2005).

The indigenous people of the MPF are the Wanne and the Bakwe who belong to the Kru group. Nonindigenous people are settlers who arrived at different times in the past from other regions in Côte d'Ivoire (e.g. the Bawle, Anyi, and Guro). The term "foreigners" describes migrants from other countries.

Among the local people, this study focused on the Wanne, because they are the first inhabitants of the forest and numerically the most important (11 among 14 of the forest villages). They have lived in the region since the fourteenth century (Schwartz 1993). Rice planters, lagoon and river fisherfolk, they are also intrepid sailors who once embarked on European ships (the famous Kroumen). Since the 1970s, and contact with immigrant settlers, they have begun to plant coffee and cocoa, and more recently oil palm and rubber trees.



## Figure 1: Location of Monogaga Classified Forest in Southwestern Côte d'Ivoire

#### **Data Collection**

The collection of data on how managers (Sodefor and the Wanne) categorized the forest for their daily activities was done in two steps.

We interviewed the chief of Sodefor (MPF) and his foresters in their office in San Pedro. Then we consulted all of the literature on all projects that took place in the MPF. We finally entered the forest with them while they were conducting their activities. The objectives were to identify the different units of their subdivision and the activities that take place in each of these units.

The collection of local knowledge for this study relied on individuals with a comprehensive knowledge of the environment. The key informants held specific knowledge on the indigenous classification of the local environment and on various uses of resources (forests, land, cropping). The chiefs of lands, village chiefs, lineage heads, and other senior citizens (men and women) in each village constituted the key informants. In total, in each village, 12 to 15 informants were involved in the discussion, mostly either born or residing for very long time in the studied areas. Several techniques for gathering indigenous knowledge on the environment exist and were employed (Schoonmaker 1994; May 1997). The discussions took place during group interviews, open interviews, and participant observation. In each village, we had meetings of one or two hours with the key informants, after which we moved to the forest for participant and field observation. This technique is central to the ethnographic process and anthropological fieldwork (Nabanoga 2005). We engaged in the daily farming activities of the villagers. We watched what farmers did and recorded what they said and asked questions about their own actions and the behavior of others. The purpose of this technique, in this study, was to produce comprehensive accounts (May 1997) of different practices and uses of forests units and their resources by local farmers.

#### **Data Analysis**

The data analysis on the recognition of spatial units by Sodefor and the Wanne, the practices and the access rules for each of them and their resources was qualitative. We combined the transcription of texts of interviews, group discussions, and participant observations of various activities in the landscape. We analyzed ethnographically to interpret Sodefor and Wanne activities, underlying ideas about the forest, its spatial units, management practices, their resource management, and the access rules of lands in these units.

#### Results

#### Sodefor's Subdivision of the Monogaga Protected Forest

In 1978, faced with diminishing forest cover, the Ivorian Government divided forest area into two management sectors (Sodefor 1994; Ibo 2000). These were the Rural Domain where agricultural activities and forestry operations are undertaken by actors from civil society, and the Permanent Domain of the State, made up of national parks, nature reserves, and protected forests. In the latter domain, Sodefor manages all classified forests.

In the MFP, Sodefor has delineated areas for each of the major activities that the company is supposed to conduct (Figure 2) in its management plan. These areas are called "series" (Sodefor 1994). There are two series: The protection series where all exploitation is banned and the agricultural series where farmers are allowed to grow crops (Sodefor 1995).

The conception and implementation of the plan were built on consultation with representatives of the villagers appointed to the Commission Paysans-Forêt (CPF) or Farmers–Forest Committee (FFC), for the purpose of setting up co-management of the forest.

6°16'12"W 6°29'24"W MONOGAGA CLASSIFIED FOREST 4°57'0"N Sassandra idn Mo Idouaou Z4 4 Kpote Biological Carref **Z**3 4°50'24"N 72 dro Pont Brime LEGEND 0 Zones of the agrcicultural series Kounouko Monogaga **Reconstitution Group** Biological Reser Popoko **Biological Reserve** Roads and tracks ATLANTIC OCEAN Rivers, lakes et lagoons Kablak Villages

Figure 2: The Monogaga Forest as Subdivided by Sodefor in Its Management Plan for 1995

The choice of locations depends on very complex criteria that take into account environmental characteristics (proximity to the main road, nature and fertility of soils) as well as earlier occupancy and certain rules of access to landownership that existed before the forest was protected (Sodefor 1995). Thus indigenous farmers retain control over the allocation of land to settlers although Sodefor is entitled to give its opinion.

In its land-use plan Sodefor subdivided the protection series into different areas called "groups":

- The "full protection group," also called a "biological reserve" (see Figure 2) is located on the coastline: it is a 2-kilometer-wide band that includes the original village settlements that in fact have not yet been totally abandoned
- Areas that are considered to be degraded comprise the "reconstitution group," also known as the "reforestation group," often formerly planted crop fields or plantations
- The last group, called the "reserved natural forest" (Traoré and Zoh 2003) is made up of all the other sections of the protected Monogaga area that are neither used for agriculture nor replanted by Sodefor, and that are outside of the agricultural series and the full protection group. These plots are the equivalent of the "production" series found in other protected forests in Côte d'Ivoire. This group does not exist in the land-use plan for the MPF. Here the tree cover is currently so poor in valuable timber species that professionals judge that logging operations are not worthwhile.

### Wanne Forest Units and Their Criteria

Table 1 lists the main land or forests units recognized by the Wanne people in the MPF. The identification of these units is based first on distinction between low and upper lands. Some vegetal criteria are taken into account as well.

Spatial Units	Vegetation Cover Criteria	Indicator Species
Kporo	Old growth forest; never cultivated or	Dialium aubrevillei (kokosega
"Black" forest	ago; indigenous vegetation.	tu), Tieghemella heckelii (bitu tu), Milicia excelsa & M. regia
		(gege), Diospyros sanza- minika (kake)
Teteklwoa	Fallow older than 15 years and	Elaeis guineensis (Baadjo),
Old fallow or secondary	younger than 50 years. Understorey	Rauwolfia vomitoria (neko
lolest	buikier (denser) than <b>kporo</b> .	(bedue) Snathodea
		campanulata (bawa tu)
Piti	From the end of the crop harvest until	Piti wake, Pitiatie
Young secondary forest	15 years old; several herbs and crop	
	seedlings	
Gbadu Glo	Flooded permanently, presence of	Raphia hookeri (nîmlî), R.
Swamp Raphia	Raphia paims.	paima-pinus (duo)
Gbadu	Temporarily or not flooded.	
	characteristic species.	
Kase or Za	Permanently flooded, presence of	Rhizophora racemosa,
Mangroves	mangroves.	Avicennia germinans, and
		Conocarpus erectus
Ge Dial de ge	Areas cultivated for food crops.	Several food crop species
units or farms		(soklo) rice (seka)
farms		
čečra de ge	Areas cultivated for cash crops.	Cacao tree ( <i>coco</i> )
Cash crop		Coffee tree (cofe)
plantation		
Dji gbu bru	Bulky bush vegetation bordering the	Pandanus candelabrum,
Littoral bush	Sea.	Phoenix reclinata
Sacred groves	corresponding to the other categories	Can be trees, rocks, rivers
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Tabla	4. *	Tha	Main	Cnotial	I Inite e	Dooo	anizad	hv/ \//a	nna Earm	ara in	tha N	MDE
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The results show that, globally, criteria for vegetation cover and characteristic species are jointly used in the indigenous area classes of the MPF. Sometimes, it is the relative abundance and size of species and not the unique occurrence in a unit that is used as indicator. For example, in old growth forests and old secondary forests, species like *Tieghemella heckelii* and *Diospyros sanza-minika* are associated with both units but are found more commonly in old growth forest than in old secondary forest. Specifically, some other criteria are used to separate some subdivisions of main classes. Thus, inundation is a criterion used for distinction between swamps areas (*gbadu* and *glz*). Ages are the identifiers of noncultivated forest (old growth, secondary forests). Agricultural units are separated by the nature of the crops cultivated like *didi de ge/ čečra de ge*. The Wanne never subdivide two units: littoral bush and sacred groves (*dji gbu bru, djro plz*). For instance, even when the sacred object is a rock, the surrounding forest patch is considered as the entire sacred grove.

#### Access Rules to the Indigenous Area Units

The main criteria are the access rules to the units and their resources. To identify which area constitutes an inheritance for local people, we recorded the access rules to each unit identified in Table 2.

For the Wanne peasants, access rules are important criteria for accessing units for cultivation and to protect their resources. These rules are the main conditions to determine what, in the forest, is considered as heritage to hand over to future generations. According to these rules, in a territory, some units are considered as lineage rights (*kporo, Gbadu, Dji gbu bru,* and *Djro plz*), an inheritance of all the inhabitants of a village (*Glz* and *kase* or *za*), or individual heritage such as *Tetklwoa, Piti,* and *Ge.* Thus, for cultivation, lineage members and migrants do not follow the same path. The former do not need permission while the latter need to conclude an agreement with the land chief (the *tutu kzni*), who is most of the time the lineage head too. However in most cases, harvesting and hunting are allowed for all village inhabitants.

Spat	ial Units	Access Rules	Owners	
Kporo		One should be a lineage member to	Lineage/sublineage. Managed	
"Black" fore	st	cultivate.	by the chief of lands.	
		A migrant should ask the chief of lands		
		for cultivation authorization via the chief		
		of the village or the tutor.		
		Harvesting and hunting allowed for all		
		inhabitants.		
Teteklwoa		Migrant or otherwise should address the	The last farmer who occupied	
Old fallow	or secondary	farmer who has cultivated the area	the area has priority of usage	
forest		before.	(and his descendants).	
		Harvesting and hunting allowed for all		
		inhabitants.		
Piti		Migrant or otherwise should address the	The last farmer who occupied	
Young seco	ndary forest	farmer who has cultivated the area	the area has priority of usage	
		before.	(and his descendants).	
		Harvesting allowed for all inhabitants for		
	1	spontaneous plant species.		
Gbadu	<b>GI</b> o	Hunting, fishing, and harvesting allowed	All inhabitants of the village	
Swamp	Raphia	for all inhabitants of the village. Wine	(indigenous and migrants).	
areas	swamps	production reserved for indigenous		
		people only.		
		Harvesting and hunting allowed for all		
		inhabitants.		
	Gbadu	One should be a lineage member to	Lineage/sublineage. Managed	
		cultivate.	by the chief of lands.	
		A migrant should ask the chief of lands		
		for cultivation authorization via the chief		
		of the village or the tutor.		
		Harvesting and hunting allowed for all		
		inhabitants.		
Kase or Za		Harvesting and hunting allowed for all	All inhabitants of the village	
Mangroves	<b>D</b> : // /		(indigenous and migrants).	
Ge	Didi de ge	The farm cannot be transferred	First to the farmer and his	
Cultivated	Food crop	automatically to children. For harvesting	descendants and the lineage	
units or	tarms	and hunting, one should ask permission	or sublineage.	
tarms		from the owner.		

#### Table 2: Access Rules to Indigenous Land Units

	<b>čečra de ge</b> Cash crop plantations	The plantation can be transferred to children. For harvesting and hunting, one should ask permission from the owner.	The farmer and his family.		
<i>Dji gbu bru</i> Littoral bush	1	Authorization needed for cultivation. Harvesting and hunting allowed for all inhabitants.	Lineage/sublineage. Managed by the chief of lands.		
<i>Djro pl</i> ว Sacred grov	es	No cultivation, hunting, and harvesting. Some harvesting of medicinal plants that are collected only by the priest of the sacred grove. It is forbidden to enter without authorization.	Lineage and sublineage priests.		

## Discussion

#### The Monogaga Forest, a Heritage to be Protected and Regenerated

Sodefor's program of conservation and management in the MPF has given rise to a vast and complex reorganization of the territory, separating areas devoted to agriculture and forestry production, from areas reserved for conservation. This reorganization has generated certain changes in social organization: villages have been reshaped, FFC commissions created. These two traits are found in almost all externally driven processes for the constitution of natural heritage, which include those that followed the decision to protect the MPF (processes for which the models, incentives, and actors are for the most part found outside of the local circle). In this context, Cormier-Salem et al. (2002) and Bassett (2002) investigated the territorial reorganization that accompanied the installation of conservation sites in the vicinity of the Comoé Park in northern Côte d'Ivoire. These processes run counter to villagers' perceptions and practices, triggering discontent and conflict. The MPF is no exception.

#### The Forest—a Heritage of the Local Population?

"I would like to know why the villagers do not want to transmit the forest to their children," the Section Head of the MPF confided to us in a moment of discouragement. He was expressing his worry and bewilderment at the difficulty encountered when trying to obtain acceptance of and compliance with protection objectives. Clearing of trees continues, and the number of new settlers who are given land to work by indigenous inhabitants is far from diminishing; indeed it doubled between 1992 and 2002 (Traoré and Zoh 2003).

Indeed, it would seem that the densest and darkest forest cover is not what Wanne farmers like best. When farmers are asked what type of land (*tutu*) constitutes a desirable family inheritance, they indicate swamp lowlands that are suitable for growing rice, as well as cassava, maize, and vegetables. Plots of this kind are always among the most valued, because they enable a family to grow the subsistence crops that are indispensable to its daily diet: rice and vegetables that are produced by the joint efforts of men and women.

For Wanne farmers, outside these humid swamps areas, the quality of a plot of land in the farmers' eyes depends first of all on the nature of its vegetation. This determines the amount of work to be done to prepare it for planting. Recent grassy fallow lands (called *piti*) are much sought after, because they ensure immediate income with relatively little work. They are not suitable for plantations, however, in particular coffee and cocoa plantations that at the outset require the shade of thick tree cover and soil fertility that exist only when the land has lain fallow for a long period, at least 15 years.

At present the crops that provide the best income are these cash crops. An inheritance that includes coffee and cocoa plantations in full production is of course highly valued. Plots that offer thick shade cover are also appreciated, because new plantations can be created. But farmers prefer old fallow lands, *teteklwoa*, to *kporo* or "black" forest plots, areas that have never been cultivated, or that no one remembers as having ever been cultivated. To hear the farmers recall, during their development over the long period of rest from crop planting, more than 15 years ago, the soil of old fallow fields recovers a degree of fertility equivalent to that of the black forest floor. When they are planted again these fields require less intensive preparation than the *kporo* plots; the woody strata are less dense, and there are fewer big trees, which are hard to fell. Old fallow fields are also much appreciated because the people who last cultivated them have individual priority of utilization on these areas. Replanting them does not trigger the cumbersome process of allocation of land that has never been cultivated, which is held in common by the lineage group. It is also relatively easy, on these individual plots, to set up a guest–host arrangement with a settler, and contract out the agricultural work without having to submit to the exigencies of the land chiefs.

Within the various nested territories of lineage or of lineage subgroups, there are areas that cannot be turned over to individuals. Some lands have the status of common property: to have access to the resources they offer it suffices to be a member of the lineage group or to live in the village. As an example, raffia swamps (*Glz*), are exploited by the community as a whole, for the materials (palm leaves and rachis) that are necessary for building villagers' homes and making the precious palm wine (*banji*). While all villagers, even the settlers who have arrived most recently, can harvest palm leaves, only indigenous villagers have the right to draw the palm wine.

Other lands are strictly reserved for subgroups, but are not open to everybody: they are dedicated to the worship of tutelary divinities (*djro*), and generally date from the time of the group's arrival at the village location. Each lineage subgroup has its *djro pl2* and each plot is entrusted to a priest who carries out rituals and sacrificial ceremonies, harvests medicinal plants, gathers wild fruit and dead wood, and prepares the area for ceremonies. Some woody species that are needed for the ceremonies may be planted, such as the "monkey's dinner-bell" tree, *Hura crepitans* L. Hunting and cultivating are forbidden, but in some villages collection is permitted.

Currently, the access rules are mostly followed by the indigenous people. But increasingly, some members of the community in different protected areas have started transgressing the rules. With the ingress of migrants some of the Wanne sell parts of *kporo*, *gbadu*, and *kase*, even *djro plz*. This has created several conflicts inside the community.

Local people do not respect Sodefor boundaries. For them, the forest is theirs and they do not need Sodefor to manage it. To demonstrate this, they have created reforestation groups for the protected series. They burn and cut Sodefor trees. They argue that they cannot raise or take care of trees for free for Sodefor.

The entire forest does not constitute a heritage for all local people. Some parts can be considered as inheritance according to lineage and lineage subgroups (*kporo, gbadu*). In other protected areas, the same situation exists. The entire Taï does not constitute a heritage for the Oubi and the Guere people. Only the sacred mountain Niénokoué represents an inheritance that should be transferred to future generations (Adou Yao 2005). In the Ehotilé Islands National Park, the entire site constitutes a cultural heritage. To be classified, the local community argued that it was their ancestors' home. But this does not stop them from exerting pressure on this park.

## Conclusion

Based on the access rules of both managers (local people and Sodefor) for different units and their resources, the study has shown the different perceptions of Sodefor and Wanne farmers concerning their organization of activities. For Sodefor, the forest ecosystems constitute a national heritage to conserve but involve land rights and access to resources.

For farmers, it appears that land is inalienable and constitutes, with some of its resources (raphia swamp, *kporo*), lineage inheritance. The use of land and resources obeys complex access rules. A lineage member can cultivate on *gbadu* and *kporo*. He simply informs the lineage head. But for fallows, he should ask the last farmer who cultivated the area before him. Hunting and collecting are allowed for everyone, even immigrants. Other areas like young fallows, farms, and plantations are individual inheritances. To obtain land to cultivate and collect resources from is subject to the permission of the individual owner. These traditional access rules to land and resources are still used in the MPF. In its new management plan, Sodefor should include the lineage heads, who play an important role in these systems, in the structures of negotiations. Harmonization of the conflicting approaches with land classification and land use would help to make better links between forest management, livelihoods, and poverty reduction.

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