Socio-anthropological factors as sources of desecration of Grébouo 1 sacred grove (Southwestern Côte d'Ivoire)

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Abstract

This study investigates the threats affecting Grébouo 1 forest grove (GFG) and their socio-anthropological drivers. Sociological surveys consisting of semi-structured interviews and individual discussions among communities' elders and households in four nearest villages surrounding GFG. The taboos implied a ban on damaging or disrespecting the area. Disrespect included burning, hunting, cutting, and polluting the area through defecating, urinating, or sexual activities. Natives are the community that mostly (88%) collect plant resources inside GFG compared to Ivorian and West African migrants (respectively 5 and 11%). For all the respondents GFG is a place of supply (92% of the respondents) and secondly a holly place (5% of the respondents). The rarefaction of forest resources in GFG region poses threats to the grove since the traditional believes ruling its management are no longer respected. The preservation of this grove necessitates the reconciliation between traditional believes, economic needs and nature conservation.

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Key words: Grébouo 1, Sacred groves, Desecration, Traditional values, Social representation.

Introduction

Sacred groves also known as church forests, fetish forests and sacred forests, are areas of vegetation preserved through local taboos and sanctions that express ecological and spiritual values (Agyepong et al., 1999). Available literature reveals that sacred groves are a global phenomenon (Gupta, 1980) with high similarity in the cultural and ecological dimensions of their management in Africa (Campbell 2004), Asia (Malhotra et al., 2001), Europe (Lucas 1968), Latin America (Acha, 2003) and Australia (Elias, 2003).

This traditional conservation practices in the form of nature worship have played an important role in protection and conservation of biodiversity (Bhagwat and Rutte, 2006). Recent work shows that many rare and endemic species are found only in sacred groves (Dudley et al., 2009).

In turn, these forests provide essential ecosystem services that include both the material provisions (timber and non-timber forest products), non-material (spiritual value, cultural value), and support services (nutrient cycling, water storage, carbon storage, pollination) (Bhagwat, 2009; Powledge, 2006).

Because of their importance, both the UNESCO-MAB biosphere reserve concept (UNESCO, 1996) and the World Heritage Convention (UNESCO, 1972) clearly recognize the importance of sacred sites/groves and place them into the context of sustainable development.

In Côte d'Ivoire, more than 6702 sacred forests covering an extent of 37000 hectares were listed (Gomé 2003). With the continuing decline of the forest cover of Côte d'Ivoire, the importance of forests groves is to be reinforced. Indeed, with an estimated sixteen million hectares of high canopy forest at the outset of the 20th century, the forest cover of Côte d'Ivoire has declined to four million ha and is declining due to an annual deforestation rate of approximately 1% (Léonard and Ibo, 1994; Brou et al., 1999; Achard et al., 2002; Tutu and Akol, 2009). Côte d'Ivoire's remaining forest is highly fragmented, consisting largely of nominally protected national parks and forest reserves, i.e. "protected areas" (PAs), continuously on decline because of encroachment for agriculture purpose. The failure of the traditional conservation systems of PA highlights the importance of sacred groves as alternative.

Despite of their protection by the religious prohibitions sacred forests are facing strong anthropogenic pressures because of the decreasing of local resources and the loss of

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traditional values, posing threat to several threatened taxa (Kokou, 1998; Garcia et al., 2006; Gonedelé Bi et al., 2014).

Since the forest grove of Grébouo 1 is the only forest fragment that subsisted in a region predominated by cocoa and oil palm-based agro-forestry, it provides an ideal situation to test the adaptation of this forest to cultural and anthropogenic pressures.

Previous survey in GFG in 2013 indicated poaching pressure and illegal logging as an important threat to the forest survival (Gonedelé Bi et al., 2013). Local community protection of the sacred groves was evidently warning. It was hypothesized that the decline in effective protection of the sacred groves was due to the fact that their cultural roles and values in local people's lives had diminished and could pose severe threat to the survival of GFG in a very near future.

The objectives of this study were to identify: (i) the traditional cultural values for which the native population conserved the sacred groves; (ii) the effectiveness of sacred groves relative to traditional believes and (iii) Societal attributes responsible for the persistence and non respect of the taboos relates to GFG.

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Material and methods

Study site

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Grébouo 1 (UTM coordinates: N 0793849; W 0626724) is a remote village in the Department of Soubré, southwestern Côte d'Ivoire, approximately 45 km from the town of Soubré and 100 km from Gagnoa (Figure 1). The forest which is approximately 16 ha in size, is immediately adjacent to the village. GFG owes its existence to the beliefs, culture and history of the local people consisting of Bété ethnic group. Communities and village elders act as guardians of the sacred site and cutting of trees or destruction of vegetation is prohibited. Traditional believes have been an important component of the preservation of the forest grove.

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The study included all the villages located at less than 5 km of GSG. They are: Grébouo 1, Dioulabougou, Monèkro and Srakakoffikro. These villages belong to the administrative unit of Okrouyo located at approximately 35 km of Soubré which is the administrative center of the Department. A historical bond exists between the villages of Dioulabougou, Monèkro, Srakakoffikro and Grébouo 1. In fact, the populations living in the first three villages mentioned were installed by the natives of Grébouo1who sold or lend them their land for agriculture purpose. The villages of Dioulabougou, Monèkro and Srakakoffikro are

characterized by the fact that their sociolinguistic component groups are only immigrants and foreigners. Among these populations, according to a demographic order of importance, we list Baoulés, Malians and Burkinabes. The economy of the area is dominated by agriculture, leading to the complete replacement of the forest ecosystems by cocoa, rubber and oil palm plantations. The immigrants and foreign populations hold the largest plantations of cocoa, oil palm tree and rubber and play an important economic role in the zone.

Data collection

The sociological survey consisting of semi-structured interviews and individual discussions, group discussions with key informants; and social observation were conducted between August to October 2012 in the four nearest villages (<5 km) surrounding GFG (Grébouo 1, Dioulabougou, Srakakoffikro, Monèkro). Both qualitative and quantitative data were collected. In total, 117 households were interviewed. These include 24 households in Grébouo 1, 34 in Dioulabougou, 33 in Srakakoffikro and 25 in Monèkro. The linguistic composition of the target population is: natives (Bété), Ivorian immigrants (Baoulés, Agni, Malinké, Wobè, Tagbanan, Sénoufo) and West African immigrants (Burkinabes, Malians, Ghanaians, Nigerians, Beninese).

The interviews were conducted in the best understood language by individual respondents i.e. French, Bété, Baoulé or Dioula. The study involved the heads of household in the four villages. This category of actors is selected to collect reliable information on the desecration of the sacred forest of Grébouo1.

Respondents were selected based on their willing to participate and on their potential to contribute relevant knowledge. This included elder men and women likely to be knowledgeable about the groves and associated practices, and a mixture of Christians and traditional worshippers.

Persistence and loss of cultural values plus their respective possible explanations were summarized for each respondent and later compiled for the whole group.

Statistical analyses were carried out using SPSS 17.0 (software package for Windows; SPSS Inc., Chicago, USA; SPSS, 2009). We used the Spearman rank correlation coefficient (two tails) to test correlation trends between geographical distance and the frequency of taboos transgression. Ki-deux test was also used to test the difference between: (1) the level of education of natives and the migrants and (2) the perception that have different communities on the role of GFG.

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Results

Sample Characteristics

Among the 117 households interviewed, the large majority of respondents was male (75.22% male and 24.78% female) with lower educational backgrounds. Most of households (86.32%) were farmers.

The majority of respondents were Christian (43.59%) or Muslim (34.19%). These two religions are by far followed by Animist (10.26%). At the community level, natives or Ivorian migrants are in majority Christian (75% and 80% respectively), whereas West African migrants are in majority Muslim (89.47%).

Most of the respondents (83%) have no education level or are of poor educational level. Only 1 respondent (1%) has been at university and 19 (16%) have been at secondary school. There were no significant difference between the level of education of natives and Ivorian migrants ($\chi 2$ = .858, df = 3, p = .836). Ivorian, whether natives or Ivorian migrants have significantly higher levels of education than West African migrants (Natives vs. West African migrants: $\chi 2$ = 41.768, df = 4, p < .0001; Ivorian migrants vs. African migrants: $\chi 2$ = 63.90, df = 3, p < .0001).

Taboos related to the forest grove

The respect and protection of the Grébouo 1 forest grove originates from the reverence of the Iroko tree (*Chlorophora excelsa*) for its social function as a protector and giver of fecundity and also for the fear to animals living in the forest that are considered as ancestral spirits.

The taboos implied a ban on damaging or disrespecting the area (Table 1). Disrespect included burning, cutting, and polluting the area through defecating, urinating, or sexual activities. The taboo also includes restriction of entrance in the forest to foreigners, unless they are allowed by traditional authorities.

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Harvest of goods in the forest grove is highly restricted. It is also taboo for menstruating or pregnant women to enter the grove and also women with baby.

If either case applies, the sacrifice will proceed, but she will wait on the fringe of the grove while the others sacrifice on her behalf. Enforcement of the taboos is the responsibility of the

traditional authorities that rule the grove. If forest damage is found, a clan meeting is called to establish guilt and sanctions, following institutionalized procedures.

Two sets of sanctions for violating the prohibitions established by the taboo were identified: i) supernatural sanctions where ancestral or other spirits bring misfortune, disease, or death on the culprit and/or the clan or the community, and ii) physical sanctions, a penalty of zebu or sheep, the number decided by traditional authorities.

The penalty is paid to the traditional authorities, who then sacrifice the animals to appease the spirits and protect against punishment from the spirits.

Desecretion of Grébouo 1 forest grove

When asking respondents whether they poach inside the forest, Ivorian migrants were the community with the higher hunting activity (25%) inside the grove, whereas natives and West African migrants' respondents in their low proportion hunt inside the forest (3% and 8% respectively) (Figure 2). Natives are in their large proportion (88%), the community that mostly collect plants from the forest grove compared to Ivorian and West African migrants (5 and 11% respectively) (Figure 3). Among the plants collected, trees, bamboos and lianas come first with respectively 25%, 20% and 18%. They are followed by leaves and medicinal plants (15 and 11% respectively).

When asking respondents whether they defecate inside the grove, more than half of the natives (54%) said yes. A very low proportion of Ivorian migrants and West African migrants (4% and 3%) defecate inside the grove (Figure 4).

A relation between the proximity of the location of the respondents and their activity inside the forest grove was established. There were no significant correlation between the distance separating the location of the respondents and poaching activity inside the grove ($r = 1$, $p = .083$). No significant correlation was also found between the distance separating the location of the respondents and the activity of collecting plants inside the grove ($r = .949$, $p = .167$) or between the geographic distance and defecating inside the grove ($r = -.8$, $p = .08$).

Perception of the respondents on the forest grove

The first perception that all the respondents (natives, Ivorian migrants and West African migrants) have to the GFG is a place of supply (92% of the respondents) and, secondly, a holly place (5% of the respondents) (Figure 5), both of which were significantly different ($\chi 2 = 8.768$, df = 2, p = .0125).

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There were no significant difference between the perception of natives and that of Ivorian migrants on the GFG ($\chi 2$ = 2.687, df = 2, p = .261). No significant differences were also observed between the perception of natives and West African migrants ($\chi 2$ = 3.556, df = 2, p = .169) and between Ivorian migrants and West African migrants ($\chi 2$ = 12.174, df = 2, p = .169).

Discussion

Sample Characteristics

The large majority of the head of households interviewed was male (75.22% male and 24.78% female) with lower educational backgrounds (83%) and with farming as their major activity (86.32%). Christian (43.59%) and Muslim (34.19%) are the religions that predominate.

The sex biais structure of the sampled population could be explained by the social organization of the households interviewed which are dominated by male who have the right to lend the land. The basic social unit of the native Bété ethnic group and other migrants is the patrilineage and thus explains the predominance of men in the sample. The proportion of women in our sample is composed of widows with children in care.

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Taboos related to the forest grove

The rationale supporting the protection of GFG is spiritual reasons rather than ecologic or economic. These believes coupled with the system of heavy sanctioning for transgression of the taboos have been strong enough in the past to make people obey the regulations. They believe that Iroko tree and certain wildlife species are Gods or representatives of Gods protecting these plants and animals' and their habitats from any kind of threats (hunting, encroachment …) and offer spiritual protection for the entire community. Like other traditional conservation approaches, GFG is protected, conserved and maintained through a combination of taboos, prohibitions, beliefs and restrictions (Akowuah et al., 1975; Fargey 1991; Dorm Adzorbu et al., 1991; Ntiamoa-Baidu et al., 1992; Anane, 1997; Chandrakanth et al., 2004).

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Traditionally, such species are strictly protected. In some cases even touching the species is forbidden. Similar example is the Buabeng-Fiema Monkey Sanctuary in Ghana where the grove protects black and white African Colobus (*Colobus polykomos*) and Lowe's Mona monkeys (*Cercopithecus campbelli*) which are sacred to the local people (Akowuah et al., 1975; Fargey, 1991; Ntiamoa-Baidu et al., 1992) and are then strictly protected.

With regards to GFG, the entry into a sacred grove or sanctuary is strictly limited, but in other areas they may be exploited or their use restricted to certain forest resources (Falconer, 1992). Although not explicitly directed towards conservation of biodiversity or ecosystem services, the taboo forests still provide considerable ecological benefits. In the context of natural resources management, they enhance biodiversity conservation and minimize the continuous use of natural resources (Ntiamoa-Baidu, 1995; Abayie Boateng, 1998).

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Desecretion of Grébouo 1 forest grove

Religious and cultural importance of the species is a factor promoting the protection of GFG. However, the religious believes and taboos that were central to the protection of GFG are being eroded over the years due to various reasons and thus the present status of the grove is rather precarious.

The importance of the sociologically recognized plants and animal which have linkage with the deities of the groves or other religious practices in maintaining the ecological balance was addressed by previous studies (Rodgers, 1994; Singh et al., 1998; Saj et al., 2006; Baker et al., 2009).

Believes and taboos are the constructive tools for conserving GFG, and erosion of believes and taboos has led to the deterioration of this grove as reported elsewhere (Vartak and Gadgil, 1981; Tiwari et al., 1998; Tiwari et al., 1999; Chandrakanth et al., 2004; Khan et al., 2008; Wild and McLeod, 2008; Ormsby and Bhagwat, 2010).

The threats to effective conservation of GFG identified in this study are similar to the treats facing conservation of sacred groves elsewhere in the world (Schaaf, 2003; Schaaf and Rossler, 2010; Chandrakanth et al., 2004; Khan, Khumbongmayum and Tripathi, 2008; Wild and McLeod, 2008).

There are several key threats that have led to the reduction in size or lack of protection of GFG. Various anthropogenic pressures due to developmental activities, exploitation of resources and increase in human population have increased the threats to GFG. Indeed, this

grove is the only forest patches in the region and represents a kind of island in a see of agro-industrial plantation composed of cocoa, rubber and palm oil plantation. The rarefaction of forest resources in the area increases the threats to GFG. Indeed, local buildings are made of lianas and trees. Woods are also used for cooking by women. The only nearest place where such items are affordable is the GFG.

Our data also indicates that the natives questioned, defecate in their large majority inside GFG. Indeed the village of Grébouo 1and its grove are girdled by vast plantations of oil palm trees and cocoa. With the lack of toilets in the village, the proximity of GFG seems to be an ideal and safe place from any glance. Parallel to our work, Tsialiva and Rasolomanana (2012) mention current practices of human defecation in the sacred site of the Mount Passot (forest) in Madagascar.

All these reasons may explain why natives that are supposed to protect the grove are those who disrespect it. This is allegated by a West Africa migrant: "*It used to be sacred and one could not do that inside. But today, the Iroko where the genius used to sleep, they (Natives) have it cut down. They even defecate inside. We too defecate inside when we walk by"*.".

In addition, the increase of human population coupled with the erosion of traditional believes due to strong immigration in the area, accelerated the decline of forest resources. Immigrants often do not share the same cultural and spiritual values that local people have concerning the sacred grove. In some cases, this has led to further desecration of sacred groves leading to poaching inside the forest grove by immigrants. Previous studies in Côte d'Ivoire (Tahoux-Touao, 2004) and in other West African regions (Kokou, Adjossou, and Hamberger, 2005) have reported hunting inside forest groves.

Traditional ways of resource management are becoming nonfunctional due to direct conflict between ever increasing human population and limited natural resources (Sinha and Maikhuri, 1998; Kokou et al., 1999; Khurana, 1998). Unfortunately, it has been concluded in several studies (Fargey, 1991; Dorm Adorbu et al., 1991; Ntiamoa-Baidu, 1995; Gyasi, 1996; Hagan, 1998; Schaaf, 2003; Khumbongmayum et al., 2004) that the erosion of traditional believes threaten sacred groves and sanctuaries.

The breakdown of believes that protect these areas has been attributed to religion and the immigration of people who may have no respect for local traditions, and to a lack of modern legislation to reinforce traditional rules (Fargey, 1991; Falconer, 1992; Ntiamoa-Baidu, 1995). Myths and believes associated with the sacred groves which used to be followed strictly in earlier days have been eroded during the last few decades and the groves no longer enjoy the same status and privilege as they used to in the past (Khumbongmayum et Tripathi, 2004).

Perception of the respondents on the forest grove

GFG is perceived by the surrounding population as a supply place of natural resources. They depend on the grove to meet their vital domestic necessities, such as fuel wood, trees, bamboos, vegetables, medicinal plants etc.

Our data indicate that economic forces are influencing the traditional communities to discard the community-oriented protection to these groves as already reported by previous studies (Saxena et al., 1998; Singh et al., 1998).

The social representations of the sacred forest by the immigrants and foreigners are related to those of the natives. Indeed, the non-compliance with the rules of management of GFG by the natives modified the attitudes and behavior of the migrants with regard to this forest. This is allegated by a Boukary a West African immigrant of Dioulabougou *"They (the natives) say that this forest is sacred, however, they do not respect it themselves. We see them; they cut wood, bamboos, lianas inside the grove, how can we respect their habits? It is because of that that we cut wood, leaves inside the grove "*.

It makes clear that the action of the surrounding populations on the resources of GFG is the consequence of the representations they have of it.

The perceptions that have natives of Grébouo 1 on their grove indicates that there is a need to reconcile myths and believes to economic needs and nature conservation. Until the surrounding population of GFG will depend on the biological resources of the grove, they will continue to violate the belief related to the grove, hence posing threats to the forest grove. Unless viable option is provided to these people for sustaining their economic condition, any step for the conservation of the sacred groves will not be successful.

Conclusion

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GFG is the only remaining forest patches in the Grébouo 1 region in the otherwise intensively used landscape on which, the natives Bété and other migrant population depend for their primary needs. This pose threats to the grove since the traditional believes ruling the management of this holy place is no longer respected. The preservation of this grove necessitates the reconciliation between traditional believes – economic needs – nature conservation. In order to counter the current threats posed to GFG due to religious and cultural changes as well as by natural resource pressures, a renewal of community traditions is needed. Local residents must continue to be involved in forest management. This may come

through revival of past ceremonies related to a grove, or through awareness campaigns and education programmes highlighting the ecological and spiritual benefits of the forests. Ivorian authorities and international conservation policy should support traditional institutions of sacred forest management. Further studies need to be initiated in GFG and other groves in Côte d'Ivoire to determine the biological diversity in these forest patches and highlight their ecological and conservative values.

Acknowledgements

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Figures

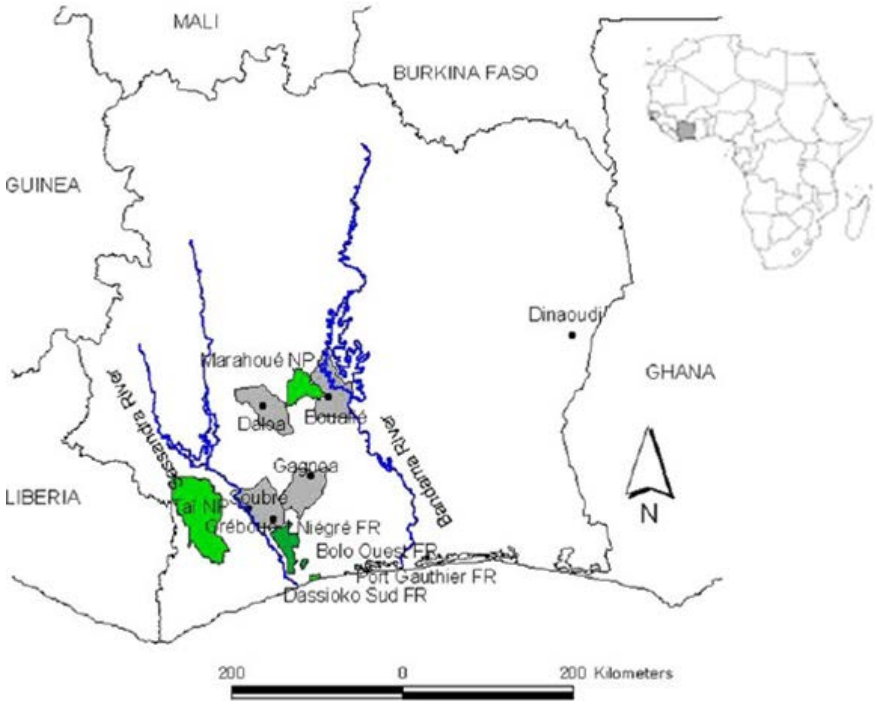

Figure 1: Map of Côte d'Ivoire showing the location of Grébouo 1

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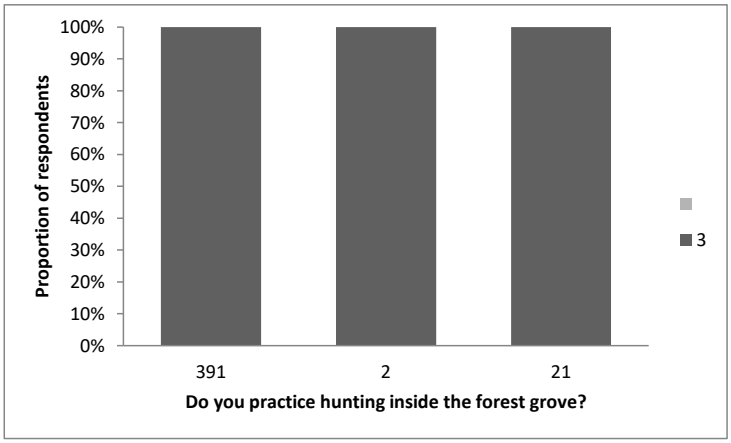


Figure 2: Proportion of respondants who reported that they hunt inside the Grébouo 1 forest (black bars) ordered by the proportion of respondants who reported that they don't hunt inside the grove (grey bars).

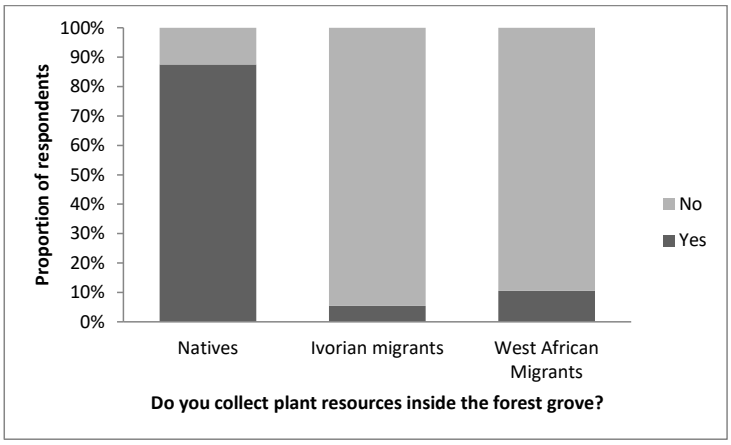


Figure 3: Proportion of respondants who reported that they collect plant resources inside the Grébouo 1 forest (black bars) ordered by the proportion of respondants who reported that they don't collect plant resources inside the grove (grey bars).

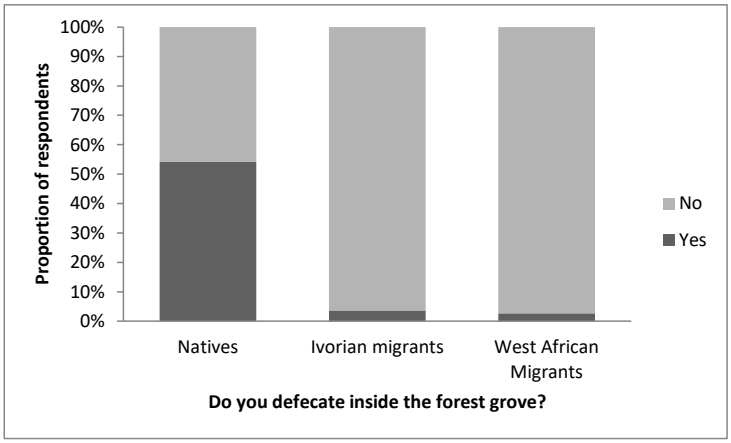
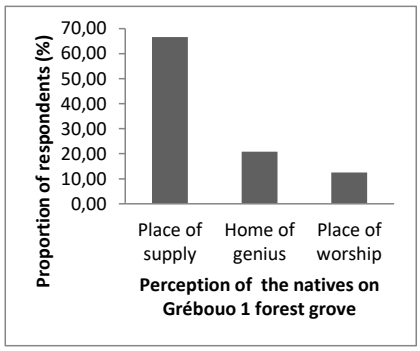
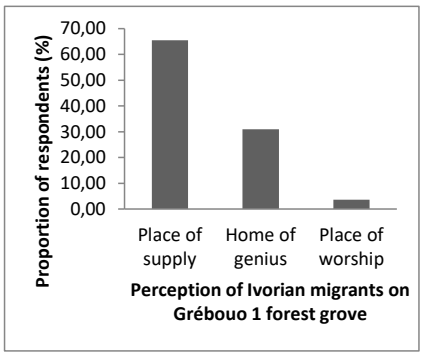


Figure 4: Proportion of respondants who reported that they defecate inside the Grébouo 1 forest (black bars) ordered by the proportion of respondants who reported that they don't defecate inside the grove (grey bars).





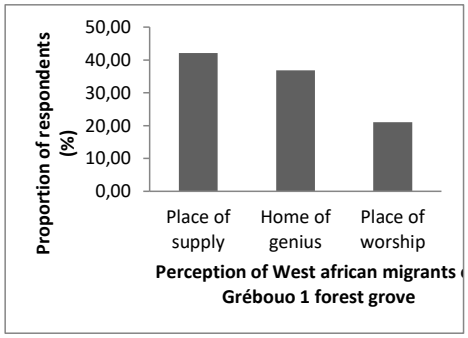


Figure 5: Perception of respondents on the role of Grébouo 1 forest grove