

Article

# Can Traditional Authority Improve the Governance of Forestland and Sustainability? Case Study from the Congo (DRC)

Eliezer Majambu <sup>1</sup>, Salomon Mampeta Wabasa <sup>2</sup>, Camille Welepele Elatre <sup>3</sup>, Laurence Boutinot <sup>4</sup> and Symphorien Ongolo <sup>5,\*</sup>

<sup>1</sup> Department of Political Science, State's University of Mbuji-Mayi, 225 Mbuji-Mayi, Democratic Republic of the Congo; eliezermajambu@gmail.com

<sup>2</sup> Department of Sociology, University of Kisangani, R406 Kisangani, Democratic Republic of the Congo; salomonmampeta@gmail.com

<sup>3</sup> Department Political Science, University of Kisangani, R406 Kisangani, Democratic Republic of the Congo; cawelepele@gmail.com

<sup>4</sup> CIRAD, Département Environnements et Sociétés CIRAD, Campus International de Baillarguet, 34398 Montpellier CEDEX 5, France; laurence.boutinot@cirad.fr

<sup>5</sup> Department Forest and Nature Conservation Policy, University of Göttingen, 37077 Göttingen, Germany

\* Correspondence: songolo@uni-goettingen.de

Received: 13 March 2019; Accepted: 23 April 2019; Published: 26 April 2019



**Abstract:** With about 107 million hectares of moist forest, the Democratic Republic of Congo (DRC) is a perfect paradox of a natural resources endowed country caught in repeated economic and socio-political crises. Democratic Republic of Congo possesses about 60% of the Congo basin's forest on which the majority of its people rely for their survival. Even if the national forest land in the countryside is mainly exploited by local populations based on customary rights, they usually do not have land titles due to the fact that the state claims an exclusive ownership of all forest lands in the Congo basin including in DRC. The tragedy of "bad governance" of natural resources is often highlighted in the literature as one of the major drivers of poverty and conflicts in DRC. In the forest domain, several studies have demonstrated that state bureaucracies cannot convincingly improve the governance of forestland because of cronyism, institutional weaknesses, corruption and other vested interests that govern forest and land tenure systems in the country. There are however very few rigorous studies on the role of traditional leaders or chiefdoms in the governance of forests and land issues in the Congo basin. This research aimed at addressing this lack of knowledge by providing empirical evidence through the case study of Yawalo village, located around the Yangambi Biosphere Reserve in the Democratic Republic of Congo. From a methodological perspective, it used a mixed approach combining both qualitative (field observations, participatory mapping, interviews, focal group discussions, and desk research,) and quantitative (remote sensing and statistics) methods. The main findings of our research reveal that: (i) vested interests of traditional rulers in the DRC countryside are not always compatible with a sustainable management of forestland; and (ii) influential users of forestland resources at the local level take advantage of traditional leaders' weaknesses—lack of autonomy and coercive means, erratic recognition of customary rights, and poor legitimacy—to impose illegal hunting and uncontrolled forest exploitation.

**Keywords:** forestland policy; Democratic Republic of Congo; local governance; land politics; Sustainability; Yangambi Biosphere Reserve

## 1. Introduction

The bulk of forest exploitation in the Democratic Republic of Congo (DRC) lies on rural small-scale farming with a 2 ha average of surface area per farmer [1,2]. These processes are in most cases associated to a set of informal local transactions for accessing and controlling natural resources in general and land in particular. Since the early 1960s when DRC—previously Zaire—became independent from Belgium, the country has often been embedded in various economic and socio-political crises related to natural resources management [3,4]. In most of the cases, a constellation of multilevel private and public actors fight each other to access, control or keep the upper hand over above- and below-ground forestland resources (wood, arable lands, and mines). The notion of forestland in this paper refers to “an area of land covered by trees or forest ecosystem and that can be used [or transformed] for other specific purposes such as farming, natural resource extraction, hunting zone, ecotourism, or building” [5]. In such a context, the central state struggles to impose its authority over the government of the national territory including in the forestland areas [6,7]. Among the innovative measures put in place by the 2002 forestry law adopted by the government of DRC was the emergence of decentralised management system through the involvement and formal recognition of non-central state actors including traditional entities. In the case of community forestry for example, traditional structures and customary norms are put forward as an alternative organisation system that can substantially improve the governance of forest resources at local level. This growing attention to decentralised structures in the global south is a recurring issue in countries, e.g., DRC, in which the role and legitimacy of state bureaucracies in the governance of forestland resources is often contested by non-state actors [7].

In certain forest-rich areas of DRC, such as the province of Tshopo, the marginalisation of the state is further compounded by its own local auxiliary entities, especially customary chiefs and leaders who represent traditional authority. In short, the notion of traditional authority in this article refers to a customary institution or organisation with legal power and legitimacy to control a clan or local population group and the management of community resources.

Beyond the forest sector, the roles of traditional organisations and related leaders were defined in the 2015 customary law. According to Section 10 of this Law on the Status of Customary Chiefs in DRC, “A customary chief is any person appointed by virtue of local customs, recognised by public authorities and entrusted to lead a customary entity”. More precisely, the traditional ruler must ensure cohesion, solidarity and social justice in his jurisdiction; secure and uphold traditional moral values, cultural heritage, ancestral artefacts including sacred customary sites and places; and ensure the protection of the land that is part of the lands of local communities in accordance with the law. Even if the customary law stipulates that traditional leaders shall be rewarded for the above-mentioned responsibilities, in 2018, those in Yawalo village have never received any reward from the state bureaucracy.

One of the major contributions of this study was to investigate the role of customary chiefs or traditional leaders in the sustainable management of forestland in DRC. Through the case study of Yawalo village, this study aimed to reduce the lack of knowledge on the ability of traditional chiefdoms to drive a dynamic of change in DRC forest governance at local level, especially in social and political context in the Congo basin where spirits of jungle and “disorder” (in the sense of Chabal and Daloz [8]) serve as political instruments for various actors mainly concerned with securing their own interests.

The Congo Basin is the second largest forest region in terms of both surface area and richness of its biodiversity in the tropics. Despite the relative marginal rate of deforestation—regarded here as a total conversion of forestland to other uses—the degradation of forest and biodiversity in the Congo Basin continues to intensify [9]. In a recent study, Tyukavina et al. [2] revealed that Congo Basin lost about 16.6 million hectares of forest between 2000 and 2014, about 10% of the region’s primary forests. The Democratic Republic of Congo, which has about 2/3 of the Congo basin’s forest, is also the country where the dynamics of small-scale forest degradation (subsistence farming, fuelwood, charcoal, etc.) were the most important—with approximately 70% of the national forest loss—for the above-mentioned period. Besides the structural factors related to population density, level of proximity between harvesting sites, agglomerations and markets, proportion of cultivation areas and logging

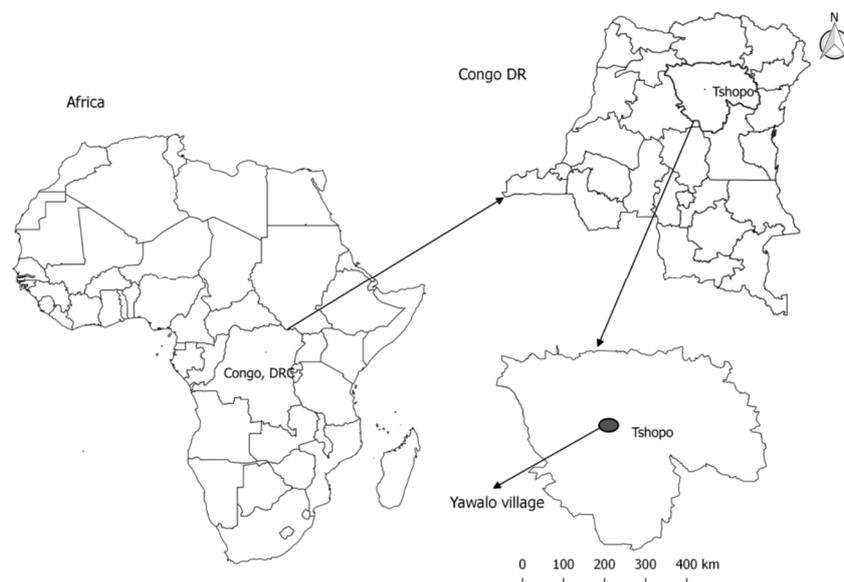
units [9] linked to these dynamics of forest and biodiversity loss, the issue of governance remains a crucial factor in this region [7].

The article consists of four main sections. After this brief Introduction, Section 2 analyses the conceptual and methodological approach used. This section presents and justifies of the case study, how the quantitative and qualitative data were collected, and the analytical approach used to rigorously process these data. Section 3 presents findings and discusses their validity in relation to similar works conducted in relatively comparable socio-political contexts in Africa and in other tropical regions. Section 4 is a brief conclusion of the study.

## 2. Conceptual and Methodological Approach

### 2.1. Presentation and Justification of the Case Study

Yawalo Village is located in the northeast of DRC (Figure 1). The choice of this village as research site relates primarily to its proximity with the Yangambi Biosphere Reserve, an emblematic site of biodiversity hotspot in the Congo Basin. Yawalo is an administrative entity of the Yawenda Grouping, Isangi Territory, Tshopo Province [10]. In 2017, its population was estimated at about 2200 inhabitants, mostly from *Turumbu*. Regarding its traditional organisation, a report from the Belgian colonial administration was already stressing the influence of the Cwabeka in this village since the early 21st century [11]. At that time, the Yawalo group had control over four riparian clans: Yaosuka, Yalinongo, Yaotwe and Yachaeffe. Due to repeated conflicts among these groups, the Yaosuka and Yachaeffe clans disassociated themselves from the other Yawalo groups to found new villages bearing the names of their respective clans.



**Figure 1.** Location of Yawalo Village in Tshopo Province (Democratic Republic of Congo).

In addition to its location in an area of huge biodiversity potential, the choice of Yawalo Village as study site was also motivated by its accessibility (located along the Kisangani–Yangambi Road) and the existence of an active local traditional system in the area.

### 2.2. Data Collection

This research was based on a mixed methodological analysis, i.e., qualitative and quantitative [12]. Qualitative data, on the one hand, were collected through household surveys, a focus group discussion and several individual interviews in Yawalo village. The purpose of this approach was to collect opinions and testimonies of the farmers and other village denizens on their experiences of traditional

leaders involved in regulating or no access modes and control of forest resources. Sixty-two households were surveyed through questionnaires. The questions put to these households were related to the major changes in the village observed during the last sixteen years prior to our study (2001–2017), the availability of forestland resources, the evolution of the distances to be travelled to find “available” cultivation areas, the effectiveness of farmers’ practices to ensure the sustainability of forestland and the methods of regulating access to resources used by traditional leaders. This information was cross-checked and cross-referenced with those from the individual interviews and focus group conducted during the study.

Quantitative data, on the other hand, were collected through a remote sensing data. The purpose of collecting these data was to analysis changes in forestland use to rigorously determine the impact of farming and informal forest exploitation practices on the sustainability of forestland resources in Yawalo village between 2001 and 2017. The choice of this time frame was mainly motivated by the availability of map databases and remote sensing data necessary to analyse the various dynamics of forestland use in Yawalo. Specifically, we used the “unsupervised classification” approach to better identify the differences between the two thematic selected categories: (i) the category of a more or less undamaged forest cover; and (ii) the category of highly degraded areas due to human activities.

The quantitative component consisted of a cartographic and remote sensing analysis. The translation, processing and detailed analysis of satellite images was organised into four steps:

- (a) A production of the multi-spectral land sat image from the mono-spectral bands of the image of 2001 and 2017.
- (b) A breakdown of the image into boundaries of Yawalo Village.
- (c) From a calculation algorithm (KMeans) of the QGIS remote sensing software (Monteverdi extension), we produced a satellite image with 50 spectral classes grouped into two thematic classes based on field observations on the one hand, and on images available on Google Earth at high spectral resolution on the other hand.
- (d) The last phase consisted of the incorporation of the geometry shapes in the two classes of each image to highlight the areas occupied by the forestland cover and the anthropic areas in 2001 and 2017. The results obtained made it possible to evaluate, through the formula of the annual rate of forestland-use change, the gain and/or the loss in surface area for the two spectral classes. Below is the formula used to determine the annual rate of deforestation in our research area:

$$T = \frac{1}{t_2 - t_1} \ln \left( \frac{S_2}{S_1} \right) * 100$$

where  $S_1$  is the forest surface area of the initial year;  $S_2$  is the forest surface area of the final year;  $t_1$  is the exact acquisition date of the image for the initial year and  $t_2$  is the exact acquisition date of the image for the final year [13].

### 2.3. An Analytical Approach Guided by the Logic of Induction

To better understand the logics of the actors investigated in this study, the qualitative data collected were analysed following a comprehensive “systemic” approach [14]. Their interpretation was systematically crosschecked as much as possible and consolidated by the aforementioned quantitative analyses. In the rationale of the cross-disciplinary approach adopted in this article, we relied on works on the sociology of organisations [15]. In an inductive logic, the aim of this approach was to better understand the role of traditional leaders and the issue of power relations in the local governance of forestland in DRC based on the rigorous observation and deciphering of a specific case study, namely Yawalo village. A critical appraisal of the “governance of commons” works was associated to this sociological approach [16]. The main purpose of this combination was to scrutinise how the formal and informal interests of key actors of forestland governance in Yawalo contribute to structuring patterns of the unsustainable use of these areas.

### 3. Findings and Discussion

#### 3.1. On the Erratic Governability of Forestland in Yawalo

From an empirical standpoint, the study reveals that several factors hinder or compromise access and regulation of forestlands in Yawalo: The weakness of local governance system and related inter-clan conflicts, the issue of violation of borders between villages, the crisis of traditional authority, effects of “practical norms” on biodiversity conservation, and the primacy of individual interests over community needs.

##### 3.1.1. A Local Governance Weakened by Inter-Clan Conflicts

The recurrence of socio-political conflicts in Yawalo is fuelled by inter-clan conflicts and tensions for access, control or exercise of traditional power. The leaders of the Yalinongo sub clan are particularly active in this domain. One of the major reasons for their involvement in local conflicts is the permanent denial of the Yabowutshe clan’s legitimacy to administer the traditional organisation of Yawalo. The study allowed observing that this contestation also questions the implicit customary principles and local order of successions according to which Yawalo traditional chiefdom should always be ruled by members of the Yabowutshe clan. This conflictual context is sustained and exploited by the local representatives of the state administration who, instead of investing Yabowutshe natives as traditional chiefs, have often formally entrusted the leaders of dissenting clans with traditional authority. Such a conflictual atmosphere could therefore partly explain the inefficiency of customary power in the management of forestland in Yawalo, because, instead of focusing on regulating access to resources, traditional leaders were more concerned with legitimising and retaining power.

This situation observed in Yawalo is similar to that observed in a Togo by Goeh-Akue [17]. According to this author, the advantages and privileges conferred by the function of customary chief and traditional leaders are points of crystallisation of power relations for the conquest and maintenance (legitimate or not) of dominant positions in the hierarchy of customary organisations. Given the oligarchic character of customary power, some analysts of power-to-privilege ties in Africa point out that an increase of power in such a context often leads to corruption, especially when it is concentrated in the hands of a minority. Rulers are inclined to develop various strategies to preserve their positions of domination to keep the various advantages and privileges intrinsically linked to their status and their position of overhang vis-à-vis their subjects [18–20].

In Yawalo’s case, although the customary organisation is governed in majority by leaders considered “illegitimate” because they do not hail from the ruling family, the findings of the study indicate that some of these leaders’ reign have sometimes been marked by a “good” management of the village. This acknowledgment of good management ability highlighted by several participants to the focus group organised in the village tend to demonstrate that a traditional leader whose beginning in power is deemed illegitimate could gradually consolidate his local base in certain cases, and then, conquer and attract the support of his population through a benevolent and efficient management of the village and collective resources.

##### 3.1.2. Violation of Borders by Neighbouring Villages

Overall, 48% of the respondents to our household surveys and the majority of participants in the *focus group* pointed out that the cycle of conflicts and tensions between villages was particularly related to the mutual disregard of boundaries by neighbouring villages. According to local actors, attempts to settle these border disputes around Yawalo village often required the mediation of traditional leaders (59.6% of cases), the head of group or sector (25.8%), or the local state administration of forest or environment (16.1%). These mediations aimed at avoiding tensions, armed conflicts and bloody setting of scores. In a similar study, the findings of Kakelengwa and Virtanen [10] in Yasekwe, one of Yawalo’s neighbouring villages indicated that attempts to resolve such conflicts had mobilised the same categories of actors as those listed above. Nevertheless, in the case of failure at the local level,

this quest for resolution of conflicts was finally brought to the courts, namely the prosecutor's office of Kisangani, one of the main agglomerations of the locality. Our observations, reinforced by some previous monographic studies conducted in other localities [21], show that border conflicts between villages are in many cases closely related to the distribution of rents and other benefits of formal and informal forest exploitation in the locality.

Increasing pressures for acquisition and expansion of new cultivation lands also exacerbated tensions and socio-political crises between the Yawalo people and the people of neighbouring villages. For the farmers of Yawalo, the issue of controlling their forestland and possibly acquiring new farmland reserves out of their village borders is a matter of survival and local development for their communities. This position is quite well illustrated by one of the farmers interviewed during our field surveys: "We also want our village to grow, to have houses in sheet metal and we want our children to study in good schools so that they can defend our cause in the future". Consequently, the increase in arable land and the intensification of charcoal production (Makala) are perceived by the indigenous people as a means of increasing their income in order to improve their living conditions.

This reality of community fragmentation and co-production of internal and external territorial conflictual ties observed in Yawalo, echoes the observations of Banégas et al. [22], in a local governance context in West Africa and in Benin in particular: "Village in Africa does not reflect a community united by tradition, cemented by consensus, organised following a common 'vision of the world', and governed by a common culture [...]. village is instead a conflict-riddled arena, where various 'strategic groups' oppose".

### 3.1.3. The Crisis of Traditional Authority

In the complex relationships among actors in an organisation, one of the symbolic epitomes of the formal reality of power is authority. As much as this authority perceived here as the ability of an actor to exert control on others, is the formal recognition of an actor A to "govern" the others [15,23], the latter always have the possibility—as tiny as it is—to resist this domination, especially when the cleavages between rulers and ruled have to do with the management of vital resources such as land and natural resources [24].

The loss of the sacred forest (*Lobè*, in *Turumbu* language) in Yawalo, once the territorial epitome of local customary power, is the sign of the decay of traditional authority in this village. One of the reasons for the "downgrading" of traditional authority in and around Yawalo is related to the expansion of religious groups. During our field work, the Yawalo village—which has become a symbol of DRC cultural landscape since the early 2000s—already had nine churches of different denominations for about 900 inhabitants. One of the consequences of this proliferation of "new" religions is the deterioration of the indigenous people's relationship with "sacred forests". Those areas of biodiversity conservation for cultural purposes were gradually perceived by the Christian local population as "satanic" refuges whose destruction through deforestation activities including for fuelwood (*Makala*) would help cast the devil and other evil spirits. In his monographic study, Mampeta [21] observes the same phenomenon in Yatoengo, Yelema and Yafunga villages. The work of Ndambo [25] in some villages of Luki in the region of Bas-Congo, current province of Kongo Central, makes the same observation. This tragedy of sacred forests in DRC is however nuanced by conflicting examples in other contexts where sacred forests still contribute to the conservation of biodiversity and the cultural expression of some traditional societies in Africa [26–31] and elsewhere.

### 3.1.4. "Practical Norms" and Biodiversity Conservation

There are many implicit principles in customary laws that could enhance the conservation of biodiversity of forest ecosystems in Yawalo. They however remain good principles poorly or even not implemented. This is often due to the lack of coercion measures that would help traditional chiefs punish those who infringe them.

In addition to the prerogatives conferred on traditional leaders by virtue of delegation of power by the central state (see Section 2.1) in Yawalo, these leaders also enjoy an extended set of powers conferred on them by local customary laws. The substantial gap between these official prerogatives of traditional leaders and the often ambiguous and complex reality of the exercise of their mandates of “chiefs” here echoes the anthropological notion of “practical norms” [32,33].

In Yawalo, the customary prerogatives devoted to traditional leaders and regularly exercised by them are not limited to the sole functions of traditional judges. In the domain of natural resources governance, customary laws give traditional leaders the latitude to, among other things:

- Regulate local access to forestland for logging and exploitation of other forest resources, as well as for the conversion of these areas into agricultural plantations. Under this law, the felling of trees, those of high sociocultural and commercial value in particular, is subject to the authorisation of the chief of the village.
- Prohibit the exploitation of certain tree species that are of special utility for the indigenous community. These are caterpillar trees such as *Petersianthus macrocarpus* for example.
- Ban or denounce hunting techniques that are ecologically unsustainable and have little regard for animal ethics. For example, hunting strategies that consist of mimicking the sounds of animals, to attract them to a more favourable distance to the hunter.

In Yawalo, the lack of coercion and/or incentives for the application of customary laws limits the traditional chiefdoms’ contribution to a more sustainable management of forestlands. This finding contrasts with the experiences of other African countries where customary laws—combined or not with administrative regulations—can favourably contribute to changing local governance of natural resources including forest and land tenure issues. In Madagascar, for example, the works of Andriamalala [34] on the implementation of the “*dina*” (one of the Malagasy social norms), showed that synergies between the *dina* and the Malagasy legal framework have contributed to sustainable forest management in southwestern Madagascar. The authors described how the consideration and mutual reinforcement a local customary regime (the *dina*) and an official legal framework (formalisation of a *dina* device by a local administrative court) has consolidated the sustainability of a Community Marine Protected Area in Velondriake.

In DRC context, the tendency to a mutual coexistence based on mistrust between informal customary arrangements on the one hand and formal legal administrative frameworks on the other hand further weakens the traditional authority in a state tagged “fragile” [7]. Forest degradation in such a context seems much more exacerbated by the involvement of the traditional leaders who are supposed to work for the sustainable management of these resources. Our work shows that the collapse of traditional authority in Yawalo converges with the dynamics of overexploitation and conversion of forestland to other uses. In Kongo central province, Vermeulen [35] also proved that the authority of village chiefs has been significantly altered. This deterioration of traditional rule played a great role in the fuelling of illegal exploitation of forest resources in the surveyed areas.

### 3.1.5. Why Individual Interests Prevail over the Community Interest

The issue of forest rents poor governance is one of the major reproaches Yawalo indigenous people voice against the traditional leaders of the village. During our fieldwork, several testimonies from the local population emphasised that the para-fiscal revenues resulting from crafted wood in Yawalo had often been confiscated by the chief of the village and his relatives for personal profit. Such corruptive practices often done with the complicity of administrative authorities and private entrepreneurs in the forest sector are not specific to Yawalo. Corruption in forest rents management in other countries of the Congo Basin such as Cameroon have also been investigated and documented [36–39]. However, the study of the direct influence of traditional leaders in a sustainability governance of forestlands is a special feature of this article. Beyond Africa, Agrawal [40] and Andersen [41] revealed in their studies how, in India, upper caste villagers use Common resources for their personal interest to the detriment

of the poorest villagers. This situation leads to a loss of confidence in the midst of the community, which generally has detrimental effects on the management of natural resources including forests.

### 3.2. When Chiefs' Decay Favours Deforestation and Compromises Sustainability

The collapse of traditional authority is one of the aggravating factors of forest degradation in DRC in general and in Yawalo village in particular. Coupled with the effect of demographic boom in the locality, the pioneering fronts of deforestation in Yawalo are advancing to the benefit of farmlands, charcoal production and informal logging as well. On the geospatial level, the study of Tyukavina [2] suggests—from an analysis of the period 2000–2014—that the combination of population growth and expansion of peasant-type slash-and-burn agriculture could lead to the loss of the Congolese forest by the next century.

In the case of Yawalo village, we carried out a geo-spatial analysis over the period 2001–2017 to quantify the dynamics of forestland change observed in this village (Figure 2). The objective of this quantitative study was to consolidate our evidence and empirical observations on the loss of forest cover in Yawalo for the above-stated period.

Figure 2 shows a significant conversion rate of forestland cover of Yawalo from 2001 to 2017. In 2001, the village had a large 1005.69 ha forest surface area. This surface significantly shrank with time to give rise to frequently anthropised areas where agriculture is the main human activity followed by forest degradation due to charcoal extraction. Sixteen years later, in 2017, the village's forest only records landscaping activities that require an acute pressure on forest resources. Table 1 provides more details on Yawalo's annual forest cover change rates.

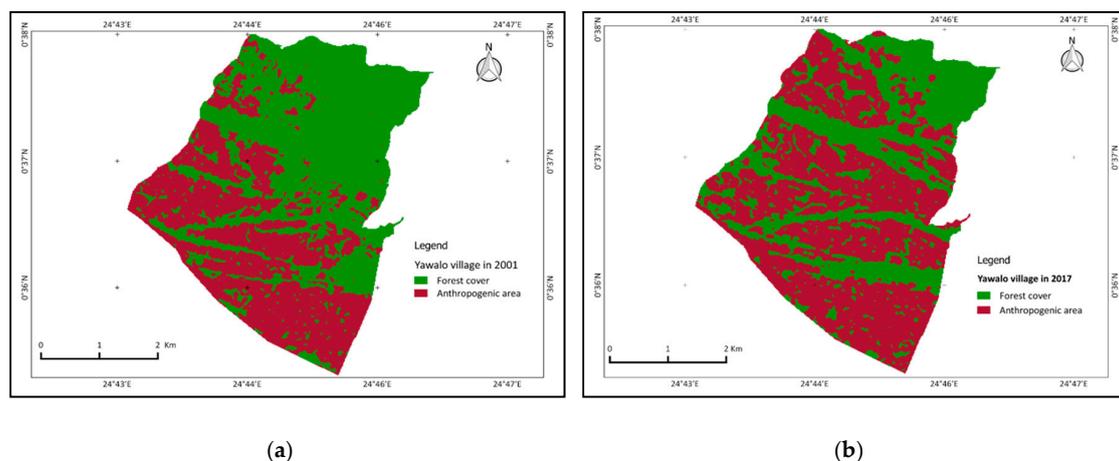


Figure 2. Change in forest cover in Yawalo village between 2001 (a) and 2017 (b).

Table 1. Annual Changes in Yawalo's Forest Cover (2001–2017).

Categories	Surface Area in 2001 (ha)	Surface Area in 2017 (ha)	Annual Change Rate (%)	Observation
Forest cover	1005.69	741.14	−1.9	Loss
Anthropic area	762.48	1027.03	1.9	Gain

From a cultural standpoint, the degradation of Yawalo's forest could be partly explained by the trivialisation and collapse of traditional authority, which is no longer able to play the role of access and management of forestland local regulator. In addition, there are other social (extreme poverty of the indigenous and forest-dependent people) and structural (demographic growth which increases pressure on forestlands) factors.

This finding buttresses the work of Davis cited by Agrawal [42] in India, who assumes that “if human culture and social factors are what underline the manner and the rate at which humans use

resources, then any theory of population and resources that overlooks cultural phenomena is likely to be deficient” p. 7. Although the appraisal of the use of resources requires that cultural and social aspects be taken into account, this is not enough to assess the complexity of the phenomenon. Hence, the choice of a cross-disciplinary approach is better for scrutinising the relationship between traditional leaders and forest land sustainability in Yawalo.

In many cases in the tropics, cultural values that contributed to forest and nature preservation have been sacrificed for money. In this regard, Agrawal [42] underscored that “the strength with which market forces impact on the local village economy is measured as the distance between the village and paved roads.” In addition to these socio-cultural factors, the authors of [9] showed that the combination of four factors contributes to accelerating the dynamics of deforestation and forest degradation in rural areas in the Congo Basin: population density, accessibility to cities, proportion of cultivation lands and timber harvesting rate.

Besides these factors perceived as internal to Yawalo village, other external factors condition users’ behaviour, namely the crisis of governance resulting from the fragile structure of the Congolese state bureaucracy, the lack of efficient and genuine policies to circumvent deforestation. However, addressing deforestation entails major agricultural reforms and land tenure issues. If not, farmers should continue the dynamics of forestlands conversion. However, the adoption of new agricultural policies focused on sustainability, appears necessary (but not sufficient) to preserve forestland in Congo basin countries that face growing needs for food, fibre and woodfuel production. Implementing such policies will require a number of parallel development programs such as: rural credit training in new technical systems to improve agricultural production, crops storage, producer-oriented price stabilisation mechanisms, and insurance against unforeseen risks [7].

As long as the above-mentioned dimension is not taken into account, the traditional leaders as well as the customary rules, for those who still abide by them, will not be able to protect the forestland, since traditional structures have, to a large extent, lost any sense of intrinsic responsibility towards the protection of natural resources [43]. This could be grounded in the fact that traditional leaders in Congolese villages do not have enough power, given the deconcentrated nature of their entities on the one hand and their designation mode on the other hand, which, in most cases, do not respect the customary laws of accessing the functions of customary chief. However, considering their proximity with the local people, traditional leaders can play an important role in controlling, protecting and managing forests in their jurisdictions, as is the case in Uganda [44].

This is where the importance of institutions and patterns of the rule of law, essential to the improvement of forest governance in DRC should be highlighted. This organisation that still to be put in place should not be a hindrance to decentralisation, which remains a hilly process in DRC. Thus, in the absence of an effective decentralisation, limited to sectors or chiefdoms, the expected organisation will have to raise awareness and increase the participation of actors whose activities somehow impact natural resources.

#### 4. Conclusions

The Yawalo village case study allowed observing that traditional leaders’ contribution to the improvement of forestland governance in DRC is substantially jeopardised by certain factors, such as repeated conflicts among various clans of Yawalo and violation of borders—related inter alia to socio-political tensions with neighbouring villages and the crisis of traditional authority. In addition to the issue of chiefs’ legitimacy to rule, this crisis of traditional authority partly comes as a result of the lack of coercion means to ensure the application of some “practical customary laws” in favour of forestland sustainable management. Various loopholes in the implementation of this last factor further accentuates “bad governance” (rents capture, looting economy, etc.) of natural resources in general and forestland in particular, in Yawalo. A backdrop that leads to paradoxical situations such as the growing destruction of sacred forests in an institutional context where customs and decentralisation are increasingly devoting more power to traditional rulers including in the domains of forest governance

and land tenure. An analysis of three of these prerogatives is particularly crucial here if one wants to understand the legitimacy and probity stakes, which could, if tampered, partly explain the decay of traditional authority in forest land governance in DRC: (i) the local population should adhere to the vision of the chief and his leadership; (ii) common interest should always prevail whilst exercising chieftain functions; and (iii) administrative authorities should not interfere in local administration. To be respected, the first condition should meet the following requirements: The nomination of the chief should comply with pertaining local customary laws; furthermore, the chief should have a clear vision likely to improve the wellbeing of his people including in the domain of fair and sustainable management of forest resources. The second condition implies that forest rents as well as other financial advantages (tax from the raft thrown on the river Londe, the tax paid by the boatmen) be geared towards building community infrastructures (schools and clinics). However, the findings of the research instead reveal that Yawalo customary chieftain has failed in applying almost all the principles of good governance of traditional leaders or chieftains in DRC.

**Author Contributions:** Conceptualisation, E.M. and S.O.; Data curation, E.M. and L.B.; Formal analysis, S.M.W., C.W.E., L.B. and S.O.; Funding acquisition, S.M.W., C.W.E. and S.O.; Investigation, E.M.; Methodology, E.M., L.B. and S.O.; Project administration, S.M.W. and C.W.E.; Software, E.M.; Supervision, S.M.W., C.W.E. and L.B.; Writing—original draft, E.M. and S.O.; and Writing—review and editing, E.M., S.M.W., C.W.E., L.B. and S.O.

**Funding:** This research was mainly funded by the research-development project “Forests”/EU implemented by the Centre for International Forest Research (CIFOR). Additional funding including for the publication process were provided by the Alexander von Humboldt foundation (grant number: 3.4-CMR-1189288-GF-P) and the University of Göttingen, Germany.

**Acknowledgments:** The authors gratefully acknowledge participants to the first international social sciences IUFRO conference entitled “African forest policies and politics” (AFORPOLIS conference 2018) held from 24 to 27 September 2018 in Yaoundé Cameroon for their valuable comments and suggestions on earlier versions of this research. The authors would also like to thank the anonymous reviewers of this paper for their comments and suggestions.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Megevand, C.; Sanders, K.; Doetinchem, N.; Streck, C. *Dynamiques de Déforestation dans le Bassin du Congo Réconcilier la Croissance Économique et la Protection de la Forêt*; World Bank: Washington, DC, USA, 2013.
2. Tyukavina, A.; Hansen, M.C.; Potapov, P.; Parker, D.; Okpa, C.; Stehman, S.V.; Kommareddy, I.; Turubanova, S. Congo Basin forest loss dominated by increasing smallholder clearing. *Sci. Adv.* **2018**, *4*, eaat2993. [[CrossRef](#)]
3. Samset, I. Conflict of Interests or Interests in Conflict? Diamonds & War in the DRC. *Rev. Afr. Polit. Econ.* **2002**, *93*, 463–480.
4. Debroux, L.; Topa, G.; Hart, T.; Kaimowitz, D.; Karsenty, A.; Abdon, A.; Bravi, C. *Forests in Post-Conflict Democratic Republic of Congo: Analysis of a Priority Agenda*; CIFOR: Jakarta, Indonesia, 2007; 77p.
5. Ongolo, S.; Kouamé Kouassi, S.; Chérif, S.; Giessen, L. The Tragedy of Forestland Sustainability in Postcolonial Africa: Land Development, Cocoa, and Politics in Côte d’Ivoire. *Sustainability* **2018**, *10*, 4611. [[CrossRef](#)]
6. Draulans, D.; van Krunkelsven, E. The impact of war on forest areas in the Democratic Republic of Congo. *Oryx* **2002**, *36*, 35–40. [[CrossRef](#)]
7. Karsenty, A.; Ongolo, S. Can “fragile states” decide to reduce their deforestation? The inappropriate use of the theory of incentives with respect to the REDD mechanism. *For. Policy Econ.* **2012**, *18*, 38–45. [[CrossRef](#)]
8. Chabal, P.; Daloz, J.P. *Africa Works: Disorder as Political Instrument (African Issues)*; Currey, J., Ed.; Indiana University Press: Bloomington, IN, USA, 1999.
9. Mayaux, P.; Pekel, J.F.; Desclée, B.; Donnay, F.; Lupi, A.; Achard, F.; Belward, A. State and evolution of the African rainforests between 1990 and 2010. *Phil. Trans. R. Soc. B* **2013**, *368*, 1625. [[CrossRef](#)]
10. Kakelengwa, B.; Maindo, A. *La Gestion Locale de la Redevance Coutumière Relative à L’Exploitation Forestière*; Tropenbos: Kisangani, Democratic Republic of Congo, 2016; 58p.
11. Lauwers. *Rapport D’Enquête dans les Chefferies Yalongo et Yawenda*; Yanonge, Archives de la Division Provinciale de l’Intérieur, Sécurité et Affaires Coutumières de la Province de la Tshopo: Kisangani, Democratic Republic of Congo, 1932; p. 2.

12. Creswell, J.W. *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*; SAGE Publications: London, UK, 2009; pp. 200–224.
13. Puyravaud, J. Standardizing the calculation of the annual rate of deforestation. *For. Ecol. Manag.* **2003**, *177*, 593–596. [[CrossRef](#)]
14. Morin, E. *La Méthode 1. La Nature de la Nature*; Edite par Seuil: Paris, France, 1977.
15. Crozier, M.; Friedberg, E. *L'Acteur et le Système: Les Contraintes de l'Action Collective*; Edite par Seuil: Paris, France, 1977; 436p.
16. Ostrom, E. *Governing the Commons: The Evolution of Institutions for Collective Action*; Cambridge University Press: London, UK, 1990; 36p.
17. N'buéké Goeh-Akue, A. Relations entre autorités traditionnelles et pouvoir public moderne au Togo: Repères, atouts et limites au développement local. *CAMES* **1999**, *1*, 45–51.
18. Fisiy, C.F. *Power and Privilege in the Administration of Law: Land Law Reforms and Social Differentiation in Cameroon*; African Studies Centre: Leiden, The Netherlands, 1992.
19. Okeke-Ihejirika, P.E. *Negotiating Power and Privilege: Igbo Career Women in Contemporary Nigeria*; Ohio University Press: Athens, OH, USA, 2004; 82p.
20. Herbst, J. *States and Power in Africa: Comparative Lessons in Authority and Control*; Princeton University Press: Princeton, NJ, USA, 2014.
21. Mampeta Wabasa, S. Populations, Pouvoirs et Conflits Autour des Concessions Forestières en Territoire d'Isangi (RDC) Cas de SAFBOIS et Busira-Lomami (Février 2009—Décembre 2010). Ph.D. Thesis, Université de Kisangani, Kisangani, Democratic Republic of Congo, 2012.
22. Banégas, R.; Mayrague, C.; Leclerc-olive, M. *Les Pouvoirs au Village. Le Benin Rural Entre Démocratisation et Décentralisation*; Bierschenk, T., Sardan, J.O.D., Eds.; Karthala: Paris, France, 1998; 296p.
23. Weber, M. *Economy and Society: An Outline of Interpretive Sociology*; University of California Press: Oakland, CA, USA, 1978.
24. Scott, J.C. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*; Yale University Press: New Haven, CT, USA, 2010.
25. Ndambo, M.N. Participation des Communautés Locales et Gestion Durable des Forêts: Cas de la Réserve de la Biosphère de Luki en République Démocratique du Congo. Ph.D. Thesis, Université Laval, Québec City, QC, Canada, 2014; 205p.
26. Byers, B.A.; Cunliffe, R.N.; Hudak, A.T. Linking the Conservation of Culture and Nature: A Case Study of Sacred Forests in Zimbabwe a Case Study of Sacred Forests in Zimbabwe. *Hum. Ecol.* **2001**, *29*, 187–218. [[CrossRef](#)]
27. Virtanen, P. The Role of Customary Institutions in the Conservation of Biodiversity: Sacred Forests in Mozambique. *Environ. Values* **2002**, *11*, 227–241. [[CrossRef](#)]
28. Bossart, J.L.; Opuni-Frimpong, E.; Kuudaar, S.; Nkrumah, E. Richness, abundance, and complementarity of fruit-feeding butterfly species in relict sacred forests and forest reserves of Ghana. *Arthropod Divers. Conserv.* **2006**, *15*, 319–345.
29. Fomin, E.S.D. Royal Residences and Sacred Forests in Western Cameroon: The Intersection of Secular and Spiritual Authority. *J. Stud. Relig. Nat. Cult.* **2008**, *2*, 391–407. [[CrossRef](#)]
30. Metcalfe, K.; Ffrench-Constant, R.; Gordon, I. Sacred sites as hotspots for biodiversity: The Three Sisters Cave complex in coastal Kenya. *Oryx* **2010**, *44*, 118–123. [[CrossRef](#)]
31. Schure, J.; Levang, P.; Wiersum, K.F. Producing woodfuel for urban centers in the Democratic Republic of Congo: A path out of poverty for rural households? *World Dev.* **2014**, *64*, S80–S90. [[CrossRef](#)]
32. De Sardan, J.P.O. Researching the practical norms of real governance in Africa. *Overseas Dev. Inst.* **2008**, *5*, 1–24.
33. De Herdt, T.; de Sardan, J.P.O. (Eds.) *Real Governance and Practical Norms in Sub-Saharan Africa: The Game of the Rules*; Routledge: Abingdon, UK, 2015.
34. Andriamalala, G.; Gardner, C.J. L'utilisation du dina comme outil de gouvernance des ressources naturelles: Leçons tirées de Velondriake, sud-ouest de Madagascar. *Trop. Conserv. Sci.* **2010**, *3*, 447–472. [[CrossRef](#)]
35. Vermeulen, C.; Dubiez, É.; Proce, P.; Mukumary, S.D.; Yamba, T.Y.; Mutambwe, S.; Peltier, R.; Marien, J.N.; Doucet, J.L. Enjeux fonciers, exploitation des ressources naturelles et forêts des communautés locales en périphérie de kinshasa, RDC. *Biotechnol. Agron. Soc. Environ.* **2011**, *15*, 535–544.

36. Oyono, R.P. Profiling local-level outcomes of environmental decentralizations: The case of Cameroon's forests in the Congo Basin. *J. Environ. Dev.* **2005**, *14*, 317–330. [[CrossRef](#)]
37. Assembe-Mvondo, S. Forestry income management and poverty reduction: Empirical findings from Kongo, Cameroon. *Dev. Pract.* **2006**, *16*, 68–73. [[CrossRef](#)]
38. Lescuyer, G.; Mbarga, H.N.; Logo, P.B. Use and misuse of forest income by rural communities in Cameroon. *For. Trees Livelihoods* **2008**, *18*, 291–304. [[CrossRef](#)]
39. Cerutti, P.O.; Tacconi, L.; Lescuyer, G.; Nasi, R. Cameroon's hidden harvest: Commercial chainsaw logging, corruption, and livelihoods. *Soc. Nat. Resour.* **2013**, *26*, 539–553. [[CrossRef](#)]
40. Agrawal, A. Rules, Rule Making and Rule Breaking: Examining the Fit Between Rule Systems and Resource Use. In *Rules, Games, and Common-Pool Resources*; Ostrom, E., Gardner, R., Walker, J., Eds.; University of Michigan Press: Ann Arbor, MI, USA, 1994.
41. Andersen, K. Institutional Flaws of Collective Forest Management. *Ambio* **1995**, *24*, 349–353.
42. Agrawal, A. The illogic of arithmetic in resource management: Overpopulation, markets and institutions as explanations of forest use in the Indian Himalayas. *Indiana Univ.* **1994**, *26*, 19.
43. Sow, M. Pratiques culturelles et conservation de la biodiversité en Guinée. *Educ. Relat. Environ.* **2003**, *4*, 289–295.
44. Ribot, J.C.; Agrawal, A.; Larson, A.M. Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Dev.* **2006**, *34*, 1864–1886. [[CrossRef](#)]



© 2019 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).