

FOREST MANAGEMENT SYSTEM IN THE DRC: AN EVOLUTIONARY ACCOUNT AND CONTEMPORARY CHALLENGES

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Introduction

Forest management practices are the methods used for the protection, production and harvesting of timber and other forest products. Such practices are shaped by cultural values that evolve and consolidate over time (Wyatt 2008). People's interactions with forests vary and evolve according to the socio-political and economic context that create different types of ecosystems and management issues (Lanly 1995; MacDicken *et al.* 2016). Thus, understanding the evolution of the historical context of people's relationships with forests is an important factor for developing sustainable forest management practices (Leroy *et al.* 2013). This theory was praised by Ostrom (2010) who argued that to better understand the current institutional options and choices, past decisions must be considered.

When colonial powers claimed control over land and natural resources in Africa, Asia and elsewhere, livelihood options for local people were limited. Although colonial powers eventually withdrew, legacy of their land use policy persisted meaning that the customary land tenure system did not return (Dominguez & Louma 2020). Although new forest policies and laws are considered more respectful of the rights of local communities in forest management in Cameroon, the Democratic Republic of Congo (DRC), Gabon, Equatorial Guinea, the Central African Republic, and the Republic of Congo, for example, only few improve on colonial-era policies and legislations (Barrow *et al.* 2009).

In the DRC, forest management practice is shaped by the complex socio-economic, cultural and political contexts, due to the colonial past and a series of wars that the country experienced over the past several decades. It

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weakened the institutional and economic apparatus of the country (Oyono & Nzuzi 2006; Moshonas 2013). Numerous conflicts and socio-political instability over the years have reduced the capacity of the State to impose its authority over the various aspects of national affairs, conferring a fragile character to the forest management system (Debroux *et al.* 2007; Lescuyer *et al.* 2010; Trefon 2010; Van Reybrouck 2012; Nackoney *et al.* 2014).

Until July 2002, forest management was governed by the Decree of 11 April 1949 and similar decrees from 1885 and 1907 (Oyono & Nzuzi 2006; Debroux *et al.* 2007; Mbambu 2009). The current forest management system in the DRC results therefore from over a century of historical construction that must be understood to better address current issues. Unfortunately, few studies have analyzed the way in which these practices have evolved, and how they are decisive in forest management practices today. Therefore, the objectives of this study are:

- to objectively analyze the chronology of the evolution of the forest management system over pre- and post-colonial periods in the DRC;
- to demonstrate how contemporary forest management policies are affected by the legacy policies of colonial period; and
- to suggest ways to address these challenges based on the findings of this analysis.

This introduction is followed by a conceptual framework as well as a methodological approach of the study. Section 3 focuses on the evolution of the forest management system and practices in the DRC pre- and post-colonial eras. Section 4 provides context with a brief review of the common features of the colonial forest management policies in the DRC. This allows us to understand the context in which the decentralization of forest management came into Central Africa, and particularly, in the DRC. The study then focuses on the role of the actors and the way in which the institutional framework has evolved over different periods with a highlight of the strengths and the weaknesses specific to each period. The study concludes with recommendations of the best forest management practices that consider contemporary concerns for sustainable forest management.

1. Conceptual framework of the study

Literature is available on the approach of analyzing the evolutionary development of public policies such as forestry and agriculture. Raum and Porter (2015) analyze forest policy changes in Britain from 1919 to the present using an ecosystem perspective. Kline *et al.* (2013) analyze the evolution of national forest policy in the United States with an economic (ecosystem services) perspective. Bandopadhyay (2010) affirms that it is a valid method for studying environmental history. In this text, we propose an analysis of historical forest policy development in the DRC with a forest

Table 1: evolution of national forest policy in the Democratic Republic of Congo with a perspective on governance

Time Frame	Management approach	Management priority	Drivers of change in policy	Role of state and other actors in forest management
Congo Free State (1885-1906)	Private property of Belgian King (Leopold II)	Nationalization of all vacant land and conversion into plantations and protected areas	King's Decree	None. Traditional land tenure arrangement (customary tenure system) was altered to centralize control and access to the resources.
Belgian Colony (1907-1960)	Right to access and control of forest resources was vested in the colonial government.	Timber extraction through concession	Annexation of Congo Free State by Belgium. King's Decree allows local chief's control over the land that was already in their control, effectively creating a dual tenure system.	No role for local actors. Europeans would get access to the forests through concessions. Customary control of forest area by local group persists.
Post-colonial period under colonial governance framework (1960-2002)	Colonial framework of governance remains in place.	Timber extraction through concessions	Independence from Belgian colony	Dual system of land tenure, i.e., government control and local customary control remains in place.
After the reform of 2002	Classification of forest areas into different types and allowing participatory forestry practices in some of them.	Multiple use	National and international pressure for reform, increased awareness in people towards environmental conservation	Customary rights of the local people are recognized. Community forestry concessions can be developed.

governance perspective. Table 1 provides an overview of the evolutionary history of the forest systems in the DRC, emphasizing management approach and priority, time frame of each forestry regime, driver of change (initial impetus) and the role of local communities in each regime.

2. Methodology and Approach

The methodological approach consisted of reviewing literature, both scientific and grey. Grey literature consisted of policy papers, reports and working documents from the DRC Ministry of Environment and Sustainable Development, the non-governmental organizations (NGOs) active in the DRC and other actors working in the forest sector in DRC as well as in the Central African Region. We used Google Scholar using thematic keywords to search for the literature. Search results yielded by Google Scholar were verified for accuracy and relevance before storing in EndNote. The principal author's experience of working in the DRC helped to identify relevant policy papers, reports and working documents. Content analysis method (Aktouf 1987) was used to analyze the relevant literature.

3. Historical evolution of forest management systems in the DRC

Before the creation of the Congo Free State in 1885, right to access and control of land was governed through customary arrangements (Oyono 2011). Under the customary arrangements, all land belonged to lineage groups. Wetlands and arable lands were considered communal property, which would be accessible to all members of the community. The local population had rights to hunting, gathering, grazing, fishing and cultivation. These arrangements were altered, and land that was not cultivated or settled was nationalized when King Leopold II declared the creation of the Congo Free State in 1885 (Leisz 1998). He would, however, allow the customary system of governance over land that was already under the control of local chiefs, effectively creating a dual system of land tenure. This duality of tenure persists and still exists today and has been a major source of conflict (Huggins 2010).

This section recounts the historical development of forest management systems in the DRC. We classify this development into three distinct periods: Congo Free State (1885-1907), colonial period (1907-1960) and post-colonial period (1960-present). The latter has been divided into two sub-periods: the post-colonial period with colonial framework of governance (1960-2002), and the reform of 2002 to the present.

3.1. Land and forest regimes of the Congo Free State (1885-1908) and the Belgian Congo (1908-1960)

Before gaining independence in 1960, the DRC was the 'personal property' of the Belgian King Leopold II from 1885 to 1908, and a 'Belgian colony' from 1908 to 1960 (Ndaywel è Nziem 1997; Oyono 2011; Van Reybrouck

2012). In this section, we present the characteristic elements of the land and forest management modes in that period.

3.1.1. The Congo Free State (*État indépendant du Congo, EIC*)

On 1 August 1885 (Ndaywel è Nziem 1997), an ordinance stipulated that no agreement signed with the natives for the occupation of land would be recognized or protected by the government (Matshitshi 2006). This ordinance explicitly ended the possibility for the indigenous chiefs to control and manage forest and agricultural land and laid the foundation for the weakening and alienation of the customary tenure systems (Oyono 2011).

On the occasion, lands went from two to three categories. The first was the land occupied by the indigenous people, collectively or individually, mainly for subsistence purposes (Mpoyi 2007). The second was the land already owned by non-natives, essentially foreigners, because of agreements signed with the customary chiefs before 1885. The last was vacant lands. Customary rules and norms of management could continue to be applied to the first category, while the lands of the second category were henceforth registered and regulated by the legislation of the Congo Free State. The lands of the third category were annexed either to the public domain or to the private domain (Matshitshi 2006).

3.1.2. Forest management under the Belgian Congo (*Congo belge*) period

In 1908, the Congo became a Belgian colony. The goal of the colonial regime was to grab a maximum of new land. Colonizing countries were more interested in countries with abundant natural resources (Kouna Eloundou 2012). Thus, although declared a Belgian colony, the DRC with its great wealth of natural resources was coveted by all the colonial powers. Congolese territory was to be used as a ‘free access market’ (Ndaywel è Nziem 1997; Oyono & Nzuzi 2006).

Regarding forest management, the Congo Free State continued to regulate the DRC forest. The colonial Charter (Article 15) signed on 18 October 1908 stipulated that the Belgian parliament could intervene in the procedure of granting concessions of a certain extent, under the system of ‘totalization’ (Matshitshi 2006). Congo’s forests were exploited for the benefit of the government, disregarding the local communities. The latter were, in most cases, dispossessed of their lands and all the benefits thereof (Oyono 2011; Van Reybrouck 2012).

However, the adoption of the decree of 11 April 1949 on the forest regime marked a will to regulate the management and logging of forests. This decree established the legal basis for forest management in the Belgian Congo, as well as the notion of ‘domain of the State’, specifying three categories of forests that included 1) all categories of protected areas, 2) protected forests,

and iii) forests subject to timber harvest (Oyono 2011). This classification is close to that of the 2002 Forest Code (Eba'aAtyi & Bayol 2009).

Although it laid the groundwork for 'good forest management' rules, the 1949 decree had several limitations. Few opportunities were available for improving the well-being of local communities. The many legal provisions inherent in the Royal Decree of 1949 were geared towards specific issues, such as nature conservation, hunting or fishing, timber extraction, etc. basically for the benefit of the Colony State. While industrial logging has produced little collective benefit with limited contribution to local economic development, it created conflicts that weakened the local social capital and exposed forests to degradation (Debroux *et al.* 2007). The decree clearly mentioned that communities could not market the products and resources from forests where they had access. As a result, forest products were only used for subsistence purposes. Scientists, observers and development practitioners argue that the institutional and administrative weaknesses of the regime, which persist today, limit the possibilities of law enforcement and monitoring (Oyono & Nzuzi 2006; Debroux *et al.* 2007; Mpoyi 2007; Oyono 2011).

3.2. 1960-2002: post-colonial forest management under colonial background

The post-independence Congo inherited most of the Belgian settler's legal texts (Oyono 2011). Article 2 of the Constitution of 19 May 1960 provided that the laws, decrees and legislative orders, as well as all the regulatory provisions existing on 30 June 1960 retained their effect until they were expressly repealed (Matshitshi 2006). Thus, the 1949 decree, despite its limitations in governing forests in accordance with the requirements of sustainability, continued to be implemented (Mpoyi 2007; Bertrand & Montagne 2006). Based on this legal framework, public administration continued to hold the position of 'supreme' manager of forests including all associated forestry activities (Nguingui & Batunyi 2016). Many authors agree that the colonial regime and the governance model that followed weakened the cultural identity of local communities that was closely connected to the forests. In the DRC, despite the discourse on the inclusion of actors, the retention of power by central forestry administration remains (Buttoud & Nguingui 2016).

In Africa, in general, insufficient forest management authority is transferred to the local communities, making local institutions dependent on the central authorities (Ribot 2002; Ribot *et al.* 2006). In the DRC, the decentralization is not yet effective (Trefon 2010; Moshonas 2013). The State claims the ownership of the land and the various natural resources. Conflicts continue to hatch whenever forest management and use issues

arise (Debroux *et al.* 2007; Trefon 2008). The situation is more complex in forest areas where there are tensions between industrial loggers, state agents and local communities regarding land rights and bargaining around and within logging concessions (Trefon 2008; Rahman *et al.* 2014). Large forest concessions superimposed on villages, agricultural lands or sites critical for biodiversity have been granted to private operators, most often holders of foreign capital. In some areas, local communities have been relocated and settled in other areas without any recourse (Debroux *et al.* 2007). These socio-economic problems are a hindrance to any attempt at sustainable forest management. Such systems without democratic processes in the management of natural resources cannot be effective (Ribot 2002).

However, there have been several efforts to improve forest management practices before the advent of the 2002 Forest Code. In 1984, the Congolese State developed a series of standards and procedures related to forest management. These standards were then compiled in a document called the Logger's Guide (*Guide de l'exploitant forestier*), with two types of contracts: The Letter of Intent and the Wood Supply Guarantee (*Contrat portant lettre d'intention et contrat d'approvisionnement en bois d'œuvre*). This guide set the first rules for logging after independence and has the merit of having marked a desire to break with colonial era. Letters of Intent were preparatory contracts to Supply Guarantees. They were subject to conditions, including establishing an industrial wood processing facility. The beneficiary was not entitled to a Supply Guarantee document unless they would meet the requirement within three years of the issuance of the Letter of Intent. However, an operator who could attest to having already installed a processing facility could directly conclude with the Congolese State a Supply Guarantee, without having to go through a Letter of Intent. The main limitation of the guide was that it was based on a 'sustained yield' mode of management, which targeted only wood production, without considering other forest functions or the concerns of local communities (Eba'aAtyi 2001). The norms and procedures consisted essentially in the fixing of a minimum diameter of cut and the annual allowable cuts (Leroy *et al.* 2013).

Several other weaknesses and irregularities inherited from the colonial era deserve to be discussed. The repressive and policing nature of forestry regime has affected relations between forest administration officers and local communities (Oyono & Nzuzi 2006; Trefon 2008). Local communities perceive forest administration officers as people who intervene either to repress those who violate the provisions of the law, or to delimit forest plots to be conceded to companies for logging (Debroux *et al.* 2007). Therefore, there is a climate of mistrust that limits the possibilities of collaboration between the local communities and the State towards promising approaches for sustainable forest management. Under the legal provisions prior to

the advent of the 2002 Forest Code, the exploitation of forests was made solely for the benefit of political elites and logging companies, without consideration for the welfare of the communities or for forest ecosystems conservation (Debroux *et al.* 2007; Trefon 2008).

3.3. The 2002 Reform through the 2002 Forest Code

The DRC government promulgated Law No. 011/2002 on 20 August 2002 as a new Forest Code. As much as this law marked a break with the colonial forestry regime, many consider it as the country's response to the multiple requirements – internal and external – in terms of social justice and sustainable forest management (Oyono & Nzuzi 2006; Leroy *et al.* 2013; Vermeulen *et al.* 2015). During this process, external actors – such as World Bank – played key roles in developing the draft of the 2002 Forest Code (Counsell 2006). However, its development was not an easy process, mainly because it was initiated in a complex socio-political context, around the 1990s, a little after the socio-political crises of previous years (Debroux *et al.* 2007; Nguingui & Batunyi 2016).

3.3.1. A law bringing institutional, economic, and social innovations

The Forest Code, adopted in 2002, brings profound changes to forest management in the DRC. Among its innovations, it puts an end to forest management following the sustained yield approach to fit into the sustainable forest management approach. Main innovations include 1) community participation in forest management, 2) methods of allocating forest concessions; and 3) logging control procedures (REM 2011; Bolaluembe *et al.* 2017). The current legal and regulatory framework encourages the various actors to collaborate, within the framework of clauses and specifications of the Forest Code to be respected by each of the parties (Bolaluembe *et al.* 2017).

To promote people's involvement in forest management, the Forest Code institutionalizes public consultation mechanisms, through the creation of consultative frameworks (National and Provincial Advisory Councils). These frameworks aim to ensure that the concerns of stakeholders are considered during the forest concession allocation process (Trefon 2008). Furthermore, the Forest Code enshrines the 'transfer of management responsibilities to local actors, including local communities' (Oyono & Nzuzi 2006; Nguingui & Batunyi 2016). In the perspective of community forestry, the Forest Code provided that the State could allocate, in the form of a forest concession, a portion of forest to a local community, on its customary forest land, on which it already holds 'historical rights', by virtue of custom (Vermeulen *et al.* 2015). The legal and regulatory framework of community forestry in the DRC is considered innovative compared to other Central African countries.

It explicitly recognizes a de facto customary reality – the forest belonging to local communities – and a new legal entity, the community concession, which is a title that provides tenure security for local communities, for their real participation in forest management (Diaw *et al.* 2005; Vermeulen *et al.* 2015). With the notion of ‘local community forest concession’⁵ and not simply ‘community forests’ as in Cameroon or elsewhere in Central Africa (Vermeulen *et al.* 2015), the legislation recognized the customary ownership of local communities over forests, in addition to their right and the possibility for them to obtain legal titles to customarily owned forests (Oyono & Nzuzi 2006, Mpoyi 2007). Despite the multiple benefits of such a process (Théberge 2012; Baynes *et al.* 2015; Gilmour 2016), effective implementation of the code remains a challenge, considering technical, socio-political and other governance issues experienced by the country (Debroux *et al.* 2007; Trefon 2010; REM 2011).

Several other measures demonstrate the political will to clean up the legacy of the past. The launch of the legal review of concessions with the return to the public domain of 25.5 million hectares of invalid forest concessions, the establishment of a moratorium on the allocation of new concessions, the gradual increase of the surface tax, or the elimination of unjustified charges subject to fraud are important advances (Debroux *et al.* 2007). The fiscal decentralization (Oyono & Nzuzi 2006) and the social clause of the specifications (*cahiers de charge sociale*), one of the conditions for signing a forest concession contract (Bolalumba 2017), are also noteworthy among these advances. Henceforth, the loggers must contribute to local development through the implementation of socio-economic infrastructure projects for the benefit of local communities (Bolalumba *et al.* 2017). However, effectiveness of the implementation of such provisions are disputed, mainly due to the lack of exemplary supervision and sanctions, in a context of corruption, and where the system for managing funds for local development projects poses enormous problems resulting from the local institutions established for this purpose. In addition, there are several infrastructure projects of community interest that have remained unfinished around some concessions. This is the case of the SAFBOIS concession in Isangi.

However, this analysis shows that, contrary to the provisions of the 1949 Decree, and better than the norms and procedures of the forestry

⁵ Decree No. 14/018 / of 02 August 2014 laying down the modalities for allocating forest concessions to local communities, defines a local community forest concession as “a forest freely and perpetually allocated to a local community by the State, based on the forests which it regularly possesses by virtue of custom, with a view to its use, in all forms for the satisfaction of its vital needs, with the obligation to apply sustainable rules and practices thereto”.

operator's guide 1984, the 2002 Forest Code emphasizes the consideration of social interests and considers the conservation of ecosystems (Debroux *et al.* 2007; Mpoyi 2007). Although some regulatory provisions are barely respected, such as the respect of the moratorium on the allocation of new forest concessions, or the social clause of the specifications, the current institutional framework and the configuration of forest management show a clear improvement compared to the decades before 2002. It could be said that, since 2002, the DRC has embarked into a new era of forestry. It also paved the way for other initiatives such as REDD+ and payment for ecosystem services.

3.3.2. Constraints to an effective implementation of the 2002 Forest Code

Some issues and limitations were observed in implementing the provisions of the 2002 Forest Code. These limitations can be grouped into issues related to efficiency and governance. The violation of the moratorium in the allocation of new forest concessions (Debroux *et al.* 2007) is one of the many illustrations of governance problems. These governance problems stifle the potential of the forest code to respond to the challenges of sustainable forest management (REM 2011).

Despite important work carried out by civil society organizations in raising awareness of 2002 Forest Code, local communities remain unaware of some provisions in the forest code. Furthermore, the institutional framework does not adapt to integrate the experiences and lessons learned by field actors or research findings (Trefon 2008). This disconnection of the institutional and regulatory apparatus with field realities constitutes a major obstacle in the efficiency of the new legislation towards achieving sustainable forest management objectives (Hoffmann 2005). On this issue, Klooster (2002) argues that an adaptive management approach requires innovative institutions to coordinate different actors. Despite the enactment of several measures and implementing legislations, the results regarding the enforcement of the 2002 Forest Code remain unsatisfactory (Nguingiri & Batunyi 2016). This situation would result from the fact that the Forest Code itself contains many other weaknesses that limit its application. This is notably the case with the lack of consideration given to traditional socio-political organization in relation to traditional forest management institutions (Samndong & Vatn 2018). In fact, forests are usually owned by landowners called natives (the first occupants of the areas concerned), who are different from non-natives. In forested areas, this category may be a minority of people present in the environment, with important implications for the management and use of forest land (Samndong 2018). Thus, by speaking of local community, a concept that seems to put natives and non-natives in the same package, the forest code has maintained a vagueness that is behind various conflicts that often arise in the field (Trefon 2008). For

example, during negotiations for social clause agreements⁶ between a logger (industrial or artisanal) and the local community (Bolaluembe *et al.* 2017), only the indigenous people (known as rightful owners or landowners) are considered (Bolaluembe 2017; Bolaluembe *et al.* 2017). Exceptionally, non-indigenous people may attend as witnesses, if invited.

The 2002 Forest Code is currently under review and, as such, it is imperative for all actors to remain attentive to the provisions of the revised version that could address some of the concerns raised in this study. Another key challenge is the lack of a forest zoning plan, which limits the effectiveness of the government in its efforts to achieve sustainable forest management (Debroux *et al.* 2007; Trefon 2008). Classification of forest land under the 2002 Forest Code remains ineffective until a zoning map is developed. The forest administration is characterized by slow action, a glaring lack of human resources in the provinces as existing skills are concentrated in Kinshasa, far from the forests that need to be managed (Debroux *et al.* 2007). Even when there are qualified officers, as is the case in some provinces or at the territorial level, where there are officers with various levels of training in forest management or agriculture, they are always predisposed to leave as soon as they find better pay conditions elsewhere, mainly in NGOs.

Many other processes have been affected by the context of poor governance that characterizes the forest sector in the DRC. For example, although the DRC officially committed to participate in the REDD+ mechanism, little progress has been made towards receiving the payments from the mechanism. Several reforms deemed to be required to implement REDD+ such as tenure security, land use planning, agricultural policies, etc. have not been completed yet (Kengoum Djiegni *et al.* 2020). Key barriers to completing these reforms seem to be political changes, and lack of finance, capacity and political will (Samndong 2018). The lack of progress in REDD+ readiness has been exacerbated by the conflicting interests between the officials at local and central administrations, information asymmetry, elite capture and corruption (Trefon 2010; Samndong 2018). Other factors such as impunity and influence peddling hamper the application of the Forest Code and its enforcement measures, reinforcing the illegality of timber exploitation by high-ranking officials, the political elite or the military (Global Witness 2015; Lawson 2014). Using their political or financial power, these actors do not pay taxes and trample on the rights of local communities (Counsell 2006; Trefon 2008). The forest sector in the DRC faces several governance problems, with a low level of transparency of information related to forest management, particularly regarding the declaration of the volume of timber harvested (Lawson 2014; Global Witness 2015). Few mechanisms exist within

⁶ Arrêté n° 023/CAB/MIN/ECN-T/28/JEB/10 du 07 juin 2010 fixant le modèle d'accord constituant la clause sociale du cahier des charges du contrat de concession forestière.

the forest administration to verify and ensure the reliability of information provided by logging companies (Ringuet *et al.* 2011 Lawson 2014).

4. Contemporary forest policy challenges and the best management option

The challenges of the DRC's forest management lie in their ecological importance of local and global significance and their place in the socio-economic development as well as the wellbeing of the forest-dependent, predominantly rural population of the DRC (Eba'aAtyi & Bayol 2009). Together with the Russian Federation, Brazil, Canada, the United States of America, China, Australia, Indonesia, Peru and India; the DRC is part of the ten countries holding 67% of the total forest area of the world (MacDicken *et al.* 2016). The DRC's forests account for almost 60% of the Congo Basin forests, the second largest tropical forest in the world (Eba'aAtyi & Bayol 2009). They are one of the world's biodiversity reservoirs, with a large diversity of animal and plant species (Hickey *et al.* 2012; Péliissier *et al.* 2015).

The forest offers bush meat, medicines, and other non-timber forest products to dwelling communities (Hickey *et al.* 2012; Ngabinzeke *et al.* 2016). In addition to these activities, the search for wood energy and farmland poses a threat and increases the risk of deforestation and forest degradation in the country (Schure *et al.* 2010; Schure *et al.* 2011).

The evaluation of forest management practices in the DRC offers two main perspectives. The first is about a forestry regime inherited from more than a century of colonization, characterized by centralized and exclusive management (Rahman *et al.* 2014). With increased environmental awareness and the failure of colonial rules to achieve sustainable forest management goals, the second perspective has been instituted by the 2002 Forest Code, which marks the transition to sustainable forest management aiming at preservation of ecosystems and increased public participation in forest management (Eba'aAtyi 2001; Leroy *et al.* 2013; Vermeulen *et al.* 2015). Based on these two different perspectives identified in this analysis, subsequent sections in the article characterize forestry regimes in the DRC in the past and how the legacies of the past regimes influence forest management practices today.

4.1. Centralization and exclusion: key thrusts of colonial forest policies

Traces of the colonial forest policies persist and have important repercussions on the forest management practices of the respective communities (Leroy *et al.* 2013; Rahman 2014). The literature suggests that in many African

countries, settler-driven modes of forest management have been at the root of various conflicts over land access and use of forest resources. In most cases, forestry regimes are a legacy of colonization. Forest administrations established themselves as masters of forest lands, maintaining colonial models (Matshitshi 2006; Oyono & Nzuzi 2006). At the political and institutional levels, the colonial power held exclusive authority and power over forests and land (Mbambu 2009; Oyono 2011). The advent of large industrial companies introduced temperate forest management and development techniques, with an expansion of large-scale forest logging (Williams, 2003; Oyono 2011; Kouna Eloundou 2012; Leroy *et al.* 2013).

With the evolution of environmental awareness as well as national and international pressure, centralized forest management practices have been questioned and proven ineffective in meeting sustainable forest management objectives (Ribot 2002). Centralized forest management refers to the concentration of power of control and use of forests under government authority. It was therefore necessary to think of new approaches to be consistent with the objectives of sustainable forest management (Leroy *et al.* 2013). This has led to an increased interest in decentralization as an alternative that provides more decision-making authority to local actors and improves forest governance by making them accountable for their decisions (Ribot 2002; Ribot *et al.* 2006).

4.2. Customary tenure as a foundation of forest and land management policies in the DRC pre-and post-colonial eras

The local perception of land is based on an integrative perspective, where agricultural lands are in the continuity of the transformation of forestlands, and the latter in the extension of the change of farmland fallow (Oyono 2011; Samdong & Vatn 2018). In the traditional system, access to land and use of forests were governed by rules established by the local institutions, under the control of customary authority (Huggins 2010). These customary tenure systems are characterized by the 'right to ax' and the 'right to fire', which recognize the first occupant's right to use resources, as well as the right to exclude other members from their own community. These 'original rights' constitute the material and social basis for the right of exclusion, which is one of the pillars of the right of ownership (Leisz 1998). Non-natives had to sign contracts or agreements with the customary chief before using agricultural and forest lands (Matshitshi 2006; Van Reybrouck 2012). Then, although not documented, the customary tenure-based system established two categories of land namely i) indigenous lands – occupied by the local and indigenous communities – and ii) lands occupied by the non-indigenous or the immigrants, mainly foreigners, including Portuguese, Dutch and English (Matshitshi 2006).

According to Oyono and Nzuzi (2006), the customary forest management institutions are characterized by 1) the existence of different forms of traditional tenure; 2) local management systems; 3) customary authorities (lineage chiefs and 'land chiefs'); 4) kinship systems; 5) symbolic powers such as witchcraft (Samndong & Vatn 2018). These customary institutions were close to local communities and, therefore, efficient for ensuring that the respect and implementation of customary forest management rules were being monitored (Ribot 2002; Vermeulen *et al.* 2015). Customary rights and institutions predate modern land tenure or forest tenure regimes (Oyono 2011). They have played an important role in the management of natural resources, and, particularly, of forests in the DRC. The colonial forest regime failed to put an end to local community reliance on customary institutions to access and use natural resources (Oyono & Nzuzi 2006). Not all efforts and attempts to suppress traditional systems have been successful (Diaw *et al.* 2005). Instead, King Leopold II signed a decree after the colonization of DRC in 1908 that allowed local chiefs to keep control of forest resources that was not part of the nationalization of 1885, effectively creating a dual system of land tenure (Kouassigan 1982). Local communities continue to occupy and maintain the geographical extent of the land they used before colonization. They maintain the social organizations by which they claimed control and ownership over lands and forests. To be effective, the reforms initiated through forest policies, as well as the various legal instruments relating to forests, should consider these local institutions, and local values of forest management. In addition to the customary institutions mentioned above, several other local level actors are active in forest management in the DRC. Some such institutions include 1) negotiation committee, 2) management committee, 3) local elites, 4) local associations, 5) professional social groups, 6) supporting NGOs, 7) minority ethnic groups, 8) gender groups, etc. Due to limitation of scope, the detailed characteristics of all these local level institutions are not covered in this study.

Traditional systems have limitations that prevent their effectiveness in using forests for local economic development. Mainly, it was instituted for subsistence purposes, and local norms are not documented. They are based on custom which is essentially anecdotal (Oyono 2011). Exchanges between local communities and European traders were more profitable for the latter. As elsewhere in sub-Saharan Africa, European traders sought and traded valuable timber, as well as large areas of agricultural or forest land for matchboxes or salt, machetes, or mirrors (Kouna Eloundou 2012; Van Reybrouck 2012). Furthermore, the dividends paid by these traders went directly to the customary chiefs who used them for their own needs and not for the benefit of the community.

4.3. Institutional arrangements for an inclusive and sustainable forest management

The new Forest Code has broadened the institutional framework by officially integrating other relevant actors who could boost the development and implementation of the regulations and guidelines such as the National Strategy Plan of Biodiversity 2016-2020, the National REDD+ Strategic Document, etc. issued under the 2002 Forest Code. These instances represent the new decision tools according to their respective potentials. However, full structure of such institutions is still to be established and strengthened. This section is particularly focused on strengthening customary institutions and civil society organizations as forest management stakeholders.

4.3.1. Role of customary institutions

The history of forest management in the DRC shows that customary institutions constitute one of the essential pillars for sustainable forest management (Oyono & Nzuzi 2006). However, these institutions have been marginalized or ignored in the colonial and post-colonial legal frameworks. There is a form of 'legal dualism' characterized by the coexistence of two referents that face each other without accepting each other (Wilkie *et al.* 2002; Mpoyi 2007). This duality still exists today, as the 2002 Forest Code also fails to address this issue. Although the general tendency of the bureaucratic systems inherited from colonization has been to weaken customary institutions, local communities are still using informal local norms and institutions to govern forest resources. These historical constructions suggest that to face the contemporary challenges of forest management in the DRC, the question of land and forest tenure duality must be addressed with a perspective that reconciles scientific evidence with socio-cultural realities. Many scientists, theorists and practitioners also plead for the creation of local democratic institutions as an effective alternative to the current centralized administration for more equity and social justice in natural resources management (Ribot 2001; Diaw *et al.* 2005).

However, only relying on these customary institutions does not address the imperatives of sustainable forest management. Taken in isolation, forest management practices based solely on customary structures and institutions are less democratic and, like the conventional industrial model, less effective and unsuitable for achieving the objectives of sustainable forest management. Several pieces of evidence illustrate these facts. Customary authorities are often heirs to their predecessors and are not accountable to the local population they are supposed to represent in a context of decentralized forest management (Ribot 2001; Ribot *et al.* 2006). In the DRC, the customary chiefs receive forest rents. In the past, this would usually be sacks of rice, salt and/or clothing paid by loggers in the villages (Oyono & Nzuzi 2006).

It is proof of elite dominance. In some areas, artisanal loggers negotiate directly with customary chiefs, heads of families, or any other customary ownership of trees, regardless of local communities. While recognizing the social importance and influence of customary authorities, the 2002 Forest Code favors community management (Malele 2004; Vermeulen *et al.* 2015) which, at least in theory, offers more opportunities for the participation of local people in forest management (Buchy & Hoverman 2000; Bullock & Hanna 2012; Baynes *et al.* 2015; Gilmour 2016) as opposed to elite dominance. However, using the pretext of elite dominance in the community, central government authorities tend to keep control of access and use of forest resources in the rural areas. In this context, a better option is to democratize the existing customary institutions and put confidence in them for sustainable forest management.

4.3.2. Role of civil society organizations

The role of civil society organizations (CSOs) in the development of democratic processes for sustainable forest management has been recognized in several other regions of the world (Ribot 2001). In the DRC, CSOs and donor-funded NGOs played an important role in mediating between the State, the private sector, and local communities (Trefon 2008) and in forest product valuation (Lemarchand 2002; Oyono & Nzuzi 2006). These NGOs also made a considerable contribution to the development of the legislative and regulatory framework for the forestry sector. Indeed, before the advent of the 2002 Forest Code – in a climate of mistrust between the State, logging companies and local communities – the CSO had the advantage of enjoying some credibility on the part of local communities (Oyono & Nzuzi 2006). Due to the efforts of the CSOs, some of the communities are now ready to negotiate and take part in a dialogue together with other forest management stakeholders (Oyono & Nzuzi 2006).

CSOs have been working in synergy with donors to set up the first experiences of decentralized forest management in the DRC. In the provinces of North Kivu, Orientale, and South Kivu (Oyono & Nzuzi 2006), for example, these experiences led to the creation of community forests and reserves (Maindo & Kapa 2014). The progress noted in these provinces is particularly related to the fact that they were beyond the control of the Kinshasa government. This facilitated the administrative procedures utilized in the process of creating community reserves (Oyono & Nzuzi 2006, Trefon 2010). Indeed, during a long period of war, these provinces did not depend on Kinshasa. It was then easier for communities to obtain local administrative authorizations and take immediate action (Oyono & Nzuzi 2006). This is an interesting illustration of how governance structure can affect the efforts of actors in forest management. Building on these actions, by articles 134 and 24 paragraph 3, the 2002 Forest Code recognized and institutionalized

the role of civil society organizations as a key player in forest management (Trefon 2008). In accordance with article 134, for example, associations representing local communities and national NGOs approved and involved in the implementation of government policy on environmental and forestry matters in general can exercise the right recognized to the civil party for acts constituting a forestry offence. In addition, representatives of the civil society organizations are part of the steering committee that oversees drafts before they become Decrees. Although civil society organizations and donor-funded NGOs are viewed positively in communities, as they represent the communities during the dialogue with government and industries, they are criticized for the high-profile lifestyle of expats and focusing too much on absolute conservation, a charge that is hard to deny. Absolute conservation focuses on the creation of parks and protected areas that ultimately excludes local people from practicing their traditional rights in their own land.

However, efforts are still needed to ensure that the potential mobilizing role of civil society organizations is effectively harnessed for the benefit of sustainable forest management. Indeed, there are NGOs that are created by active politicians, or by actors close to politicians, and which only serve the interests of their creators. In practice, these NGOs only denounce in areas where they have no interest.

Conclusion

A century of authoritarian and repressive forest management regimes, to the detriment of local communities, has failed to set up sustainable forest management in the DRC. The adoption of the 2002 Forest Code marked a new era of forestry towards addressing contemporary challenges of forest management. The transition has been marked by many institutional arrangements and will need to continue to evolve and adapt before effective forest governance structures can be founded. Local communities remain skeptical and suspicious of the government's or the logging companies' willingness to guarantee their access to the forests and to benefits derived from logging. This limits the possibilities of collaboration despite the good intentions defined in the various regulatory texts adopted for the implementation of the 2002 Forest Code.

Although the various innovative provisions introduced by the Forest Code have taken time to settle, it is hoped that the country has made important reforms that will contribute to reducing deforestation and degradation of forests. Effective implementation of the regulatory and legal frameworks remains the prerequisite for forest management to serve as a driver of local development. Many efforts are still needed from all actors to consolidate gains and maximize the chances of success of the initiated reforms. The reforms initiated in the DRC's forest sector remain a process, where multiple

stakeholders must continue to learn to face the contemporary challenges of sustainable forest management and adapt. A real cleansing of the legacy of colonial past will go through a process that involves restoring trust between actors, establishing and consolidating a culture of participation and modernizing forestry institutions.

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