

Full Length Research Paper

Evolution of policies and legal frameworks governing the management of forest and National Parks resources in Gabon

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In the Congo Basin region, sustainable management of forests and protected areas is mostly biodiversity oriented while little is known about governance effectiveness of such forest resources, especially in Gabon. This paper assesses available policy, legislations and institutions to enhance the management of Gabonese forests and National Parks resources. Data was gathered through systematic review of literature and policies and face to face interviews of experts in three key institutions. National Parks represent a restrictive conservation strategy adopted by the Gabonese government. Resource harvesting and gathering is prohibited in National Parks boundaries. Identified issues include; little participation of the local communities in forest resource management and poor benefits redistribution among stakeholders. The current policy framework promotes strongly the economic development of the timber sector and biodiversity protection than the rights and livelihoods security of local communities. Several institutions are involved in resources management but their mandates over biodiversity protection tend to overlap, providing possible obstacles to their efficient performance. The establishment of a new type of institutional arrangement for protected areas which would integrate biodiversity protection and secure local people's livelihoods is therefore needful. Institutional collaboration and communication among these institutions should also be encouraged to avoid the overlap of their mandates.

Key words: National Parks, forests, governance effectiveness, policy, legislations, resources management, Gabon.

INTRODUCTION

Worldwide, several countries have embarked on establishing and managing protected areas since they are considered as cornerstones for biodiversity conservation and sources of socio-cultural and economic

values for the society (Muhumuza and Balkwill, 2013; Watson et al., 2014). Six categories (Ia, II, III, IV, V and VI) of protected areas have therefore been established by the IUCN according to their management objectives

(Phillips, 2003; Dudley, 2008). Protected areas of categories Ia, II, III, IV and V aim at strictly protecting biodiversity and encouraging scientific research, environmental education and ecotourism development while protected area's category VI tends to reconcile biodiversity conservation and sustainable use of natural resources in its boundaries (Gardner, 2011; Burgin and Zama, 2014). However, the latter category tends to be poorly implemented worldwide, and this despite increasing pressure from the World Congress on Protected Areas (WCPA) to promote new forms of conservation governance such as: (i) governance by government; (ii) shared governance; (iii) private governance; and (iv) governance by indigenous peoples and local communities themselves (Dudley, 2008).

Currently, just few countries have embarked on establishing all the six categories of protected areas along with such new forms of conservation governance (Dudley, 2008), especially in Brazil. However, little is known about the effectiveness of such conservation governance in most developing countries including those located in the Congo basin region including Gabon. Evaluating conservation governance's effectiveness therefore requires a critical assessment of key principles guiding forests and National Parks' resources management (Lockwood, 2010). These key principles are: i) legitimacy (decentralization in decision-making); ii) transparency (transparent decision-making); iii) accountability (regulation of power abuse); iv) inclusiveness (participatory decision making); v) fairness (avoiding discriminatory practices); vi) connectivity (effective coordination and coherent policy); vii) and resilience (adaptive management). They are commonly used as a benchmark to judge governance effectiveness over protected forests and represent valuable tools to guide policy makers' decisions about how well institutions (government levels) and processes (policy, laws, institutions) should work (Lockwood et al., 2010).

Despite the increasing implementation of protected areas of type Ia, II, III, IV and V, biodiversity continues to decline through illegal use and often generate conflicts between local people and parks' managers over use of protected resources (Larson and Ribot, 2007). Overcoming the issue of biodiversity decline has driven scholars such as Traynor and Hill (2008) and Shackleton (2009) to suggest the enactment of clear policies and legislations to clarify how natural resources should be managed and how benefits generated should be redistributed to all stakeholders. Local people's participation in conservation governance and involvement in decision making process affecting their lives have also been suggested as possible solutions to enhance conservation governance (Chopra et al., 2005). Lessons

learnt from few successful cases studies carried out in the Tropics tend to emphasize that reconciling biodiversity conservation and development goals may lie on: i) establishing an enabling environment that promote greater compliance of local communities with protected areas conservation strategies; ii) delivering effective conservation benefits to local communities; iii) implementing environmental education programs that contribute to change of local communities' behavior with regards to resource use and raise their conservation awareness, and iv) developing and strengthening of local institutions (Bruner et al., 2001; Bajracharya et al., 2005).

Understanding governance effectiveness over forests through the analysis of governance key principles may therefore help policy-makers in various ways: i) to assess how power and responsibilities are exercised and how decisions are taken; ii) to understand procedures through which stakeholders can follow to have their say with regards to issues affecting their lives; iii) to improve the efficiency of forests and protected forests resource management; and iv) to grasp how well institutions function towards achieving assigned goals by the state (Graham et al., 2003). Such understanding is particularly important for most developing countries of the Congo basin such as Gabon which are still lagging behind towards embracing the new forms of conservation governance that integrate biodiversity conservation and socioeconomic development of local communities.

Gabon, belonging to the Congo basin region, has a total forest area of 26.8 million ha. Productive forest represents more than seventy one percent of the national territory and area under strict nature protection accounts for almost (11.0%) 3.0 million ha of the national territory designated as National Parks (FAO-ITTO, 2011). The establishment of protected areas in Gabon falls mostly within one single category (category II) known as National Parks (RFUK, 2014). Over the past two decades, the Gabonese government has made efforts towards sustainable management of its forests and its rich biodiversity, with the enactment of two relevant policies including: i) The Forest Code N° 16/01 of the 31st December 2001; and ii) The National Park Law N°03/2007 of 27th August 2007. These two policies aim not only at regulating access, use, trade, marketing and management of forest resources but also contribute to promoting the industrialization of the timber sector and its sustainable management as well as to the protection of biodiversity (Gabonese Republic, 2001, 2007). However, they both fail to address the dependence of local people's livelihoods on forest resources located within protected areas and to design a practical framework to successfully guide forest and National Park resources management (Christian and Kasumi, 2014).

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Locally, forest and land use are regulated through: (i) strict control over access and use of forest and related products; and (ii) zonation of the national forest into three distinct areas including outside, buffer zone and inside of the park. Access and use of resources are freely allowed only outside of the park, regulated in the buffer zone and strictly prohibited inside the park, despite local people dependence on resources therein. In this regard, the role of protected areas in sustaining local people's livelihoods has been poorly taken into account from inside of National Parks, thus, threatening their livelihoods in meeting households needs from forest resources (Sassen and Wan, 2006). Reconciling prohibition of access and use of forest resources inside of protected areas and socioeconomic development of local people is therefore needed (Naughton-Treves et al., 2005) as a viable alternative to strict state's control over protected forests. Integrating local people's livelihoods needs into conservation and forest management initiatives requires that enacted policies and legislations comply with the following: i) securing local people's rights over forest resources; ii) promoting stakeholders consultation and accountability of their opinions over protected areas issues; iii) promoting incentives to local communities to participation in forest resources management; iv) defining clear roles and responsibilities of stakeholders in conservation and forest management initiatives; and v) promoting fair benefits sharing among stakeholders (Lockwood, 2010).

This study represents a supportive research which complements three previous studies conducted around communities living and depending on forest resources of the Ivindo National Park in Gabon. The results of these studies have shown that: i) rural people around the park use various indigenous fruit trees and their livelihoods depend on them (Christian and Kasumi, 2014); ii) rural people face restriction by the state over access and use of forest resources, especially inside of National Parks; and iii) rural people complain about decline in resource availability due to the impacts of past logging operations in the area, climate change (unpredictability of rainfall), and unsustainable harvesting practices (Yobo and Kasumi, 2014; Yobo and Ito, 2015). The implementation of future rules and regulatory approaches to regulate access and use of resources, and on-farm tree planting to reverse the declining fruit trees populations and reduce pressure on protected forests around the Ivindo National Park have been suggested as measures towards sustainability (Christian and Kasumi, 2014, Yobo and Kasumi, 2014, Yobo and Ito, 2015).

According to Naughton-Treves et al. (2005), the Convention on Biological Diversity (CBD) and the World Commission on Protected Areas (WCPA) have shifted initiatives on protected areas management from strict biodiversity conservation to sustainable use-management of forest resources by local and indigenous people themselves. Therefore, this study aims at critically

assessing available policies, legislations and institutions in Gabon that are geared towards enhancing governance effectiveness of forests and National Parks resources in the country.

This is captured by answering five research questions: i) What type of protected areas are available in Gabon according to the IUCN protected areas management categories?; (ii) What are the available policies and legislations governing forest and protected areas in the country?; (iii) How are resources regulated within the forest and National Parks boundaries?; (iv) Who holds legal responsibility over forest and National Parks resources management in the country?; and (v) To what extent is conservation governance over forest and National Parks effective gauged against well-known standard principles of protected forests governance such as: legitimacy, transparency, accountability, inclusiveness, fairness, connectivity and resilience that were described previously.

MATERIALS AND METHODS

Study area

Located in Central Africa, Gabon is covered by about 22 million ha of rainforest (85% of the national territory) (Megevand, 2013). Thirteen National Parks have already been created throughout of the nine provinces of the country (in 2002) representing about 11.2% of the national territory (de Wasseige et al., 2009). The assessment of key experts viewpoints about their responsibilities and governance effectiveness on forest and National Parks resources has been conducted only in the Ogooué Ivindo and Estuaire provinces. Also included are the General Directorate of Waters and Forestry (GDEF), the World Conservation Society (WCS), and the National Park National Agency (ANPN) are among the three key institutions accessed (Figure 1). The DGEF is part of the Ministry of Water and Forests that is engaged in sustainable management of the national forests. National forest is divided into state permanent forest domain (logging concessions, protected areas) and rural forest domain (non permanent forests) (Art. 5 and 6, Gabonese Republic, 2001). The former cannot be converted into other land uses while the latter can and it is set aside for local community use only (Art. 12, Gabonese Republic, 2001). The WCS, a well-known international NGO, has its headquarters in Libreville (Estuaire province) and its technical pool is located in Makokou around the Ivindo National Park (Ogooué Ivindo province). It provides to the ANPN, technical support and scientific knowledge on various aspects including: protection and resources management, and research and management of National Parks. The ANPN, under the supervision of the presidency of the Republic, is responsible for the management of National Parks. Each park is under the responsibility of a conservator (Art. 43, Gabonese Republic, 2001). Its main objective is to develop the legal and institutional framework with regards to the management of National Parks and the ecotourism sector (Art. 30, Gabonese Republic, 2007).

Data collection and analysis

Data collection did not focus on assessing the local people's perceptions and dependence on forest resources (even though they

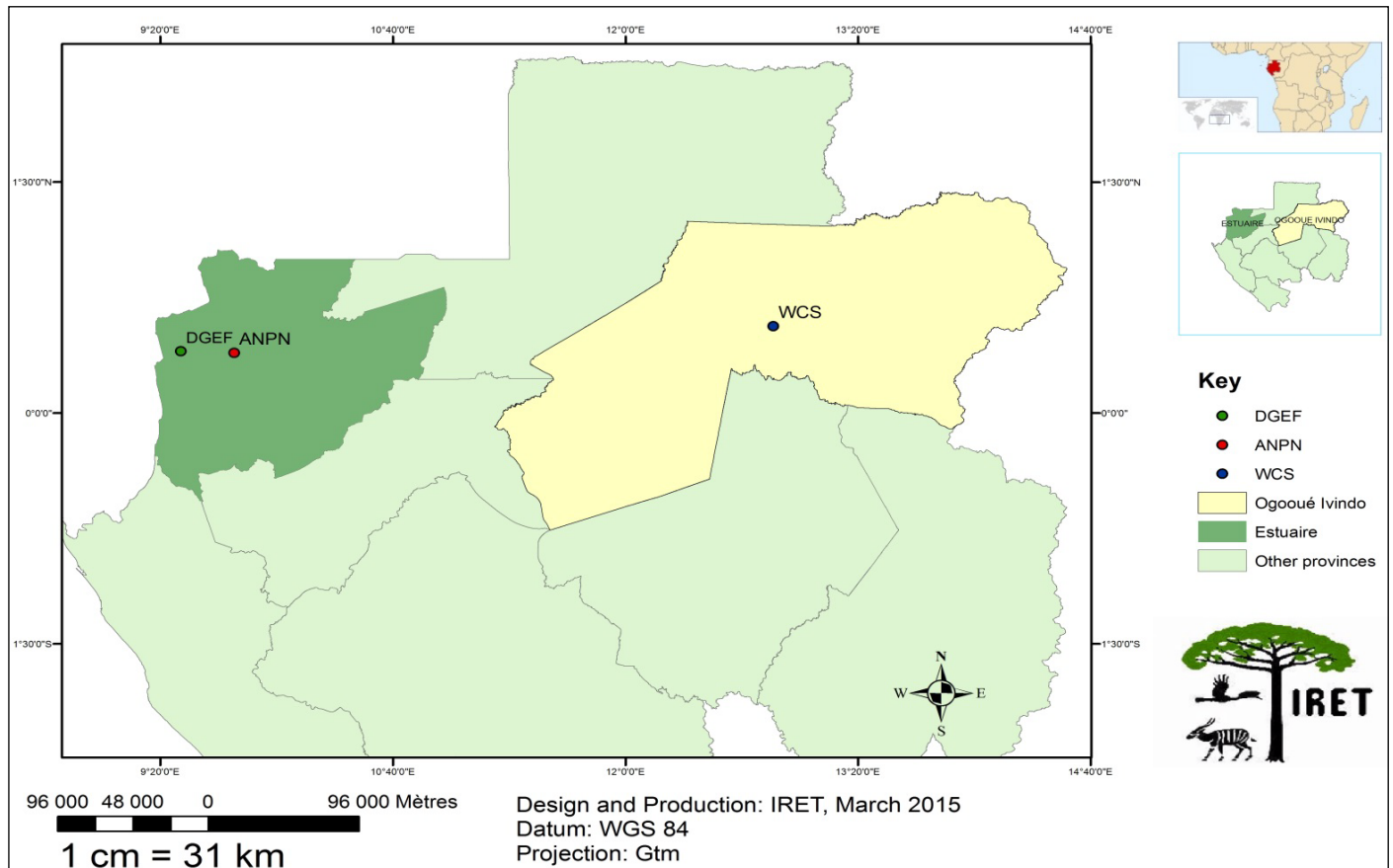


Figure 1. Localization of the study sites.

are at the center of the problem) because the previous three studies earlier mentioned had tackled the issues. The selection of these provinces have been driven by: i) The presence of institutions interested in forest and National Parks resources management; ii) the presence of the target populations, especially around the Ivindo National Park; and iii) the possibility of comparing and generalizing conclusions obtained from data collected on key institutions responsibilities and views about effectiveness of governance over forest and National Parks resources. The latter point is particularly important to scale up outcomes of this study to other National Parks wherein similar institutions are also situated.

Three key experts were selected (one in each institution) based on hierarchical positions in their respective institutions and technical know-how on protected forests management and governance effectiveness. Data was collected through a qualitative approach that consists of: i) a systematic review of literature of forest and protected areas' governance worldwide; ii) selection of national policies and legislations on the topic; iii) a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis of national policies and legislations; and iv) a face to face interviews with the three key experts. The systematic review of literature (including national policies and legislations) aims at identifying, assessing and synthesizing aspects related to forest and protected areas' governance in relation to the seven key governance principles (Lockwood et al., 2010). National literature accessed was read to determine if it met the criteria for inclusion of at least one of these seven key governance principles that are shown below in brackets: i) legitimacy (decentralization in decision-making); ii) transparency (transparency process in decision-making); iii) accountability

(regulation mechanism of power abuse); iv) inclusiveness (stakeholders participatory process in decision making); v) fairness (avoiding discriminatory practices); vi) connectivity (effective coordination and coherent policy); and vii) resilience (adaptive resources management approach). If the literature accessed does not contain one of these criteria, therefore it was not selected for gauging the effectiveness of protected forest governance.

The selection and analysis of available policies and legislations consists of four steps: i) preliminary selection of policies and legislations through an exhaustive inventory; ii) first assessment of all selected policies and legislations based on key governance principles; iii) second assessment of all selected policies and legislations; and iv) the final assessment of short-listed policies and legislations (Dlamini, 2007). SWOT Analysis aims at identifying some challenges affecting the implementation of governance effectiveness over forest and National Parks and suggesting appropriate measures to overcome them (Ahenkan and Boon, 2010). The face to face interviews conducted with key experts aims at: i) assessing institutional responsibilities with regards to forest and protected areas management and possible overlap of mandates among them; and ii) checking out whether or not the seven key governance principles (mentioned earlier) are acknowledged in policies and regulations; if not for what reasons?.

RESULTS

Forests areas are allocated for conservation versus

Table 1. Comparison values between areas of forest allocated to protection, timber production, under certification process and community forests in Gabon.

Forest areas	Names	Areas (ha)	UICN categories	International legal status
National Parks	Minkébé	756 000	II	UNESCO (2005) ²
	Lopé	491 291	II	UNESCO (2007) ¹
	Moukalaba Doudou	449 548	II	UNESCO (2005) ²
	Ivindo	300 274	II	UNESCO (2005) ²
	Batéké Plateau	204 854	II	UNESCO (2005) ²
	Loango	155 224	II	RAMSAR (2006) ³
	Cristal Mounts	119 636	II	Unknown
	Mwagna	116 475	II	Unknown
	Waka	106 938	II	Unknown
	Mayumba	97 163	II	Unknown
	Pongara	92 969	II	RAMSAR (2006) ³
	Akanda	53 780	II	RAMSAR (2006) ³
	Birougou	69 000	II	UNESCO (2005) ²
	Total area	3 013 152	II	
Forest	Land in national territory	26 800 000		
	Dense forest area	21 190 000		
	For Production	19 000 000		
	Gazetted for exploitation in 2006	12 000 000		
	Under management process (1+2+3+4)	6 368 424		
	(1) Area under preparatory phase	1 906 888		
	(2) Area under management plan	1 538 688		
	(3) Management plan submitted	117 606		
	(4) Management plan agreed	2 805 242		
	For community purpose	23 750		
Area under certification in process	4 968 186			

Source: Schmidt-Soltau, 2005, Nasi et al., 2006, ANPN, 2011, UNESCO, 2005a,b&c, UNESCO, 2007, RAMSAR 2007a,b,c&d. Areas under certification in process (ISO 14001, Pan African Forest Certification, Forest Stewardship Council & Keurhout, etc and that up to date only five communities forest have been established throughout of the country. Subscripts 1 & 2 indicate sites that have already been listed as UNESCO World heritage and RAMSAR sites while subscripts 3 & 4 indicate sites that have only been suggested as UNESCO World heritage and RAMSAR sites by the Gabonese government.

productive, certified and community forests in Gabon. Table 1 shows the proportion of forests that were allocated for conservation purpose (National Parks), production (sustainable timber extraction), certification and community forests along with management categories of National Parks and their international status. Since the area of productive forest covers almost 71.0% of the entire territory, 23.7% are under forest management process, and 18.5% are dedicated to certification process and that only 11.2% of forest area under protection (National Parks) and less than 1.0% of forest areas has been allocated to community forests therefore it can be emphasized that the state's primary goal in forest management is for economic development, biodiversity conservation rather than sustainable use of protected forests. Gabon has ratified several international conventions including the Ramsar (sensitive ecosystems) and the World Heritage of UNESCO and that some of these thirteen National Parks have already been listed or are on the verge of being listed as the world heritage of

UNESCO or Ramsar sites.

Table 2 presents the existing policies and associated regulations that govern forests and National Parks resources management along with objectives assigned by the Gabonese government. The Forest Code (2001), the National Park Law (2007) and related decrees aim at promoting the economic development of the timber sector, sustainable management of its resources as well as biodiversity protection and ecotourism development but focus less on supporting rural livelihoods and regulating their dependence on Non Timber Forest Products locally known as Forest Products Other than Timber (PFABO).

State regulation approaches by land use types in the country

Table 3 summaries the state approaches over regulation of access and use of forest and National Parks resources for both biodiversity conservation and sustaining local

Table 2. Existing laws and legislations guiding forest and National Parks resources management in the country.

Place and Law	List of policies and regulations	Major objectives
Law	-Law N° 16/01 of 31 st December 2001 (Forestry Code)	-Promotes sustainable management of forest to enhance the economic, social and cultural development of the country (Art. 2)
Forest	-Decree N° 000692/PR/MEFEPEPN of the 24 th August 2004	-Promotes customary use fruits of local communities on forest, fauna, wildlife and fishing (Art. 1)
	-Decree N° 001029/PR/MEFEPEPN of 2004	-Intends to regulate harvesting, transformation and trade of Forest Products Other than Timber (PFABO) (Art. 1)
	Regulations -Decree N° 001028/PR/MEFEPEPN on community forests of 2007	-Sets the conditions of establishing community forest (Art. 1)
	-Ordinance N° 011/PR/2008 of 25 th July 2008 amending some provisions of Law N° 16/01 of 31 st December 2001 (Forestry Code)	-Amends some provisions of the forest code (Art. 1) -Defines PFABO, local community, customary use rights and economic rights of sale (Art. 2)
National Parks	Law -Law N°03/2007 of the 27 th August 2007_(National Parks)	-Promotes sustainable protection of biodiversity and ecotourism development (Art. 2)
	Regulations -Decree N°000019 of the 9 th January 2008	-Sets the status of the ANPN (Art. 1)

Source: Gabonese Republic, 2001, 2004a,b, 2007a,b, 2008a.

Table 3. Available regulation approaches by land use types in Gabon.

Land use types	Locations	Local people livelihoods' activities					
		NTFP gathering / trade	Hunting	Fishing	Fuelwood	Timber exploitation	Agriculture
Logging concession	Inside	Requires permission from the forest administration	Requires permission unless traditional practices are used	Required permission unless traditional practices are used	No permission required	Requires permission and a management plan	Prohibited by the Forest Code
	Outside (Community forest)	No permission required for meeting customary and economic rights	Subsistence hunting is allowed unless drugs, explosives, power rifles are used	Subsistence fishing is allowed unless drugs, poisons and are used (Art.261)	No permission required	Allows for community uses under a simple management plan	Subsistence is allowed but industrial agriculture requires a management plan
National Parks	Inside	Strictly prohibited	Strictly prohibited	Strictly prohibited	Not prohibited	Strictly prohibited	Strictly prohibited
	Buffer zone	Requires a permission (Art. 14)	Requires a permission (Art. 14)	Requires a permission (Art. 14)	No permission required	Requires a permission and management plan	Permission and management plan needed (industrial agriculture)
	Outside	Permission is required unless it falls under the customary and economic rights	Permission is required unless it falls under the customary and economic rights of local communities	Permission is required unless it falls under the customary and economic rights of local communities	No permission required	Requires a permission and simple or comprehensive management plan	Requires a permission and simple or comprehensive management plan

Source: Gabonese Republic, 2001, 2007.

people's livelihoods over Non Timber Forest Products gathering and trade, hunting and fishing, deadwood collection, agriculture and logging activities. Deadwood and branches' collection are the only forest products that are allowed to be freely collected in the permanent forest domain of the state (productive forest and National Parks) and rural forest domain. Other livelihood activities are regulated through: i) permits requirement that are delivered by the Water and Forest administration or by the National Park National Agency (ANPN); and ii) an agreed land or forest management plan. The use of drugs, poisoned baits, explosives, power rifles are prohibited while hunting as well as the use of drugs, poisons or toxic products and explosive devices while fishing. This means that only traditional techniques are legally allowed to be used by local communities while hunting and fishing (Gabonese Republic, 2001, 2007).

A comparative method to analyze the existing forest and National Parks laws through SWOT Analysis

Table 4a and b represent a SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis of the existing laws and legislations that govern the management of forests and National Parks resources in Gabon. The lack of "practical" mechanism that should not only regulate land uses from the state forest (productive forest and National Parks areas including outside, buffer zone and inside of the park) and customary and economic rights of local communities on use of forest, wildlife, NTFPs gathering and fishing resources by amounts, quotas, etc are among the key weaknesses of such regulations. Opportunities to overcome such weaknesses might be played by the newly established National Consultative Committee for the management of the NTFPs sector (CCN-NTFPs). The CCN-NTFPs representing a participative platform should contribute to initiate debate about the importance of usage regulation mechanisms in the country.

Responses of key experts regarding their major responsibility in meeting assigned goals by the state

Table 5 shows key experts responses to questions asked about their major responsibility in the implementation of forest and National Parks policies and legislations in the field. Several responsibilities have been highlighted by these three institutions. However, they tend to have similar areas of expertise, especially with regards to control, repression of law breakers and biodiversity protection. This overlap of mandates of these institutions might represent a possible obstacle towards achieving their goals over forest and National Parks resources management in the country.

Key experts' responses on governance effectiveness of forest and National Parks resources in Gabon

Table 6 highlights key experts' responses on questions asked about the effectiveness of governance of forests and National Parks resources in the country. Key experts have highlighted that existing policies and regulations have all integrated the seven key governance principles in their regulatory framework for the successful management of forest and protected areas resources. However, the implementation of such key governance principles tends to be weak, especially on ground.

DISCUSSION

Towards improved governance over forest and protected resources in Gabon

Gabon has demonstrated a strong political will to conserve its rich biodiversity by establishing a network of thirteen National Parks (2002) that covers about 11.0% of the national territory. However, this network belonging to a single category II of the IUCN management categories known as National Parks is strongly biodiversity conservation oriented than sustainable use. In addition, areas of forest that have been allocated for timber production, sustainable forest management and certification processes represent 71.0, 23.0 and 18.5% of the national territory, respectively, while community forest area accounts for less than 1.0% of the national territory (Table 1). This category of protected areas characterized by a "no take" policy within its boundaries implies that local people who depended on forest resources that are actually located inside of the park are no longer allowed to enter and use them to sustain their livelihoods. Thus, the prime goals of National Parks establishment were not directed to secure local people's dependence over resources located inside of the parks boundaries but they were rather oriented towards strict biodiversity protection, eco-tourism development and conservation of its natural and national cultural heritage (Art.2, Gabonese Republic, 2007). The latter assertion is in line with the study of Sassen and Wan (2006) who pointed out that local people living and depending on forest resources of the Ivindo National Parks (Gabon) complain about restriction over access and use of forest resources actually located inside the park. Such restrictions have not only driven the issue of illegal access and use of forest resources but also caused the decline of forest resources in rural areas of Zimbabwe (Mudekwe, 2007). Overcoming restrictions over access and use of protected forests has driven scholars such as Hayes and Ostrom (2005), Locke and Dearden (2005), Naughton-Treves et al. (2005) to suggest a new form of conservation governance that should consist on allying biodiversity conservation and

Table 4a. SWOT Analysis of the existing laws on forest and National Parks resources management in Gabon.

Content	Laws	
	Law N° 16/01 of the 31 st December 2001	Law N°03/2007 of the 27 th August 2007
Strenghts	-Promotes the economic and sustainable management of timber sector -Promotes participatory forest management -Advocates for customary rights of local communities	-Promotes strict biodiversity protection and ecotourism development - Promotes participatory forest management - Advocates for customary rights of local communities
Weaknesses	-Poor community forest's development -No regulations' tools for resources uses -More emphasis on economic development than livelihood security of local communities	-Poor community forest's development (outside of parks) -No regulations' tools for resources uses -More emphasis on biodiversity protection than livelihood security of local communities
Opportunities	-National Consultative Committee in NTFPs as key platform for discussing issues related to the promotion and development of the forest and NTFPs sector	-ANPN and related partners are valuable actors for discussing issues affecting the development of the sector and local people livelihoods
Threats	Policy failure to reconcile both sustainable management of protected forests and livelihood security of local communities	Policy failure to reconcile both biodiversity conservation and livelihood security of local communities

Sources: Gabonese Republic, 2001, 2007; FAO, 2012.

Table 4b. SWOT Analysis of the existing legislations on forest and National Parks resources management in Gabon.

Content	Legislations			
	Decree N° 000692/PR/ MEFPEPN regulating customary use rights	Ordinance N° 011 /PR/ 2008 of 25 th July 2008 amending some provisions of the forestry Code	Decree N° 001029/PR/ MEFPEPN regulating usages	Decree N° 001028/ PR/ MEFPEPN creating community forestry
Strenghts	-Free customary rights is allowed in rural forest domain (Art. 14) -Attempts to regulate customary rights in use of forest, hunting, gathering and fishing (Art 2)	-Economic rights to trade NTFPs is allowed -Poverty alleviation through trade of NTFPs in rural areas (Art 4)	-Attempts to initiate regulation of customary rights local communities	-Recognizes customary rights of local communities
Weaknesses	-Practical regulation mechanisms of use of forest, wildlife, gathering and fishing resources by amounts, quotas..are lacking	-Practical regulation mechanisms of NTFPs gathered and sold by amounts, quotas..are lacking	-Practical regulation mechanisms of uses are lacking by amounts, quotas...	-Practical regulation mechanisms of community forests are lacking
Opportunities	-CCC-NTFPs must play a role in usage regulation	-Idem	-Idem	-Idem
Threats	-Most of community forest lack of management plans	-Economic dependence but there is no regulation mechanism	-Lack of practical regulation mechanisms for resources uses	-Community forests fails to act as poverty reduction tool

Source: Gabonese Republic, 2004a,b and c, 2008.

Table 5. Key experts responses regarding their responsibility in meeting assigned goals by the state.

Institutions	Major responsibilities
General Direction of Water and Forestry (DGEF)	<ul style="list-style-type: none"> - Raises awareness on issues affecting the forest sector -Controls, represses law breakers through imprisonment and fines provision -Monitors, endorses management plans and their implementation on the grounds -Carries out forest resources inventories -Protects forest resources via forest agents
National Park National Agency (ANPN)	<ul style="list-style-type: none"> -Implements national policies on protected areas, -Promotes the value of natural resources and its cultural heritage -Develops means and procedures for natural habitats, wildlife and species protection -Promotes and regulates ecotourism activities -Controls, represses law breakers through imprisonment and fines provision -Protects biodiversity protection via “eco-guards” patrol
World Council Society (WCS)	<ul style="list-style-type: none"> -Protect biodiversity -Promotes conservation and environmental education programs -Raises awareness on wildlife protection in National Parks -Provides technical and scientific advice to the ANPN on following matters: <ul style="list-style-type: none"> *protected areas resources management and touristic infrastructures building up *eco-guards’ capacity building and biodiversity protection.

Survey results, 2010.

security of livelihoods of local people who depend on the resources located inside protected areas.

Considering that governance over forests refers to the interactions between processes (laws, policies and institutions), structures (government levels), and customs (traditional regulatory means), therefore, it has an influence on the direction through which forest and National Parks resources should be managed. Successfully arguing about governance over forests requires that emphasis is directed towards the following aspects: i) how the current forest code, National Parks laws and associated legislations influence the management of forest resources; ii) how the roles of institutions and their responsibilities are exercised over forest resources management; and iii) how the needs and interests of local people are taken into account in decision-making affecting their lives (Dearden et al., 2005).

The current forest code (2001) of 14 years old has as objectives to contribute to: i) the industrialization of the timber sector and its sustainable management to enhance the contribution of the sector to the state’s revenue (Art. 2, Gabonese Republic, 2001). On the contrary, the state has little focus on regulating access and use of forest resources including Non Timber Forest Products (NTFPs) gathering and trade, hunting and fishing, agriculture and logging activities by local people. Dead woods and related branches are the only forest products that are allowed to be freely collected throughout national forests including permanent forest

estate (productive forests) and non permanent forest estate (rural forest domain). The other livelihood activities are either prohibited or poorly regulated through: i) requirement for permission from the central forest administration; ii) agreed management plan; iii) allowing the use of traditional practices, except poisoned baits, power rifles for hunting and toxic products and explosive devices for fishing; and iv) the use of activities that have “no” negative impact on forest.

The poor regulation of local people’s livelihoods has driven the phenomenon of decreasing resources and their mismanagement in rural areas of Makokou in Gabon (Christian and Kasumi, 2014, Yobo and Ito, 2015). According to the same scholars, setting up careful land use regulation for the benefit of all stakeholders while building up the capacity of the local communities to successfully manage their forests can contribute to overcome such issues and ensure sustainability. However, achieving such a lofty objective necessitates an effective devolvement of rights and responsibilities from the central government to local communities (Mudekwe, 2007), along with proper regulatory norms (Christian and Kasumi, 2014). It is worth mentioning that zonation of the national forest into permanent forest domain (productive forests and protected areas [National Parks, forest and faunal reserves, etc) (Art. 6]) and non-permanent forest estate (rural forest domain) is an indication of the Gabonese government’s effort towards biodiversity protection and regulation of uses of forest resources in the country. User regulations in permanent forest domain

Table 6. Key experts responses on governance effectiveness of forest and National Parks resources in Gabon.

Governance principles	General direction of water and forestry	National Park National Agency & World Council Society
Legitimacy	-Decentralized decision-making is acknowledged by the law but poorly implemented on the ground	-Decentralized decision-making is acknowledged by the law but poorly implemented on the ground
Transparency	-Transparency process in decision-making is acknowledged by the law but stakeholders' consultation over decisions affecting their lives is lacking in practice	-Transparency process in decision-making is acknowledged by the law but stakeholders' consultation over decisions affecting their lives is lacking in practice
Accountability	-Institutions holding authority and liability for forest management are known by the law but communities institutions are barely functional	-Institutions holding authority and liability for conservation are known by the law but communities institutions are barely functional
Inclusiveness	-Stakeholders' participation in decision-making processes is acknowledged by the law but the process is not effective on the ground	-Stakeholders' participation in decision-making processes is acknowledged by the law but the process is not effective on the ground
Fairness	-Benefits' redistribution is acknowledged by the law but it is poorly implemented	-Benefits' redistribution is acknowledged by the law but it is is poorly implemented
Connectivity	-Forest policy focuses more on sustainable development of protected forests and economic development but emphasize less on livelihood security local communities	-National Parks' policy focuses more on biodiversity conservation and ecotourism development but emphasizes less on livelihood security local communities
Resilience	-Forest policy seems to fail balancing sustainable development of protected forests and local people livelihood security	-National Parks' policy seems to fail balancing biodiversity conservation and local people livelihood security

Survey results, 2010.

such as productive forests consist on granting logging permits to stakeholders on demand and on a basis of an approved management plan by the forest administration (Art. 20).

The forest administration represents the institution in charge of the management of the national forest sector. On the contrary, the non permanent forests domain designed mainly for community forestry activities tend to be poorly managed. Customary use rights granted by the state to local people tend to be poorly regulated on the ground due to personnel shortage

(Massoukou, 2007). In order to exercise their customary use rights, local communities must have an agreed and simplified management plans approved by the forest administration (Art. 156). Currently, few community forests have been established throughout the country and that rural communities are still striving to develop their own logging operations (Meunier et al., 2011). The slow process of legalization of community forests and the struggle under which the pilot project led by DACEFI (Development of Community Alternatives to Illegal Logging) to establish "well"

working institutions are among the reasons explaining why only five community forests have been established since 2001 (Meunier et al., 2011). As a result, it is still quite early to evaluate the effectiveness of community forests initiatives in safeguarding forest and enhancing local communities livelihoods in Gabon (Meunier et al., 2011; Boldrini et al., 2014).

Regarding the National Parks policies and legislations, the National Park Law of 2007 has been established with aims of strict protection of forest resources, sustainable development of

National Parks, eco-tourism development, and conservation of its natural and national cultural heritage (Art.2). In National Parks, land uses are regulated in different manners including by: i) dividing forest estate into periphery zone, buffer zone and inner zone; ii) strict prohibition of access and use of resources inside of the park; iii) regulation of access and use of forest resources in buffer zone, except those that have “no” impacts on resources base; and iv) allowing free access and use of resources outside of the park (Table 3). Despite the availability of such law, a legal frameworks is needed to regulate practically: i) the management of protected forest resources in different locations of the park on the basis of customary use rights that have been granted by the state to local people; ii) how local people could participate in protected areas resources’ management and in decision-making that affect their lives; iii) how benefits generated from the park should be redistributed among stakeholders; iv) how rights and responsibilities of local people should be devolved with regards to the management of protected areas resources; and v) how conflicts based resources use should be managed among stakeholders (Dudley, 2008; Christian and Kasumi, 2014; Yobo and Ito, 2015).

Elsewhere, the lack of such regulatory framework has driven serious negative impact on both forest and local people’s livelihoods. According to Baffoe (2007), Lockwood (2010) and Lockwood et al. (2010), the successful integration of local people needs and interests in conservation initiatives passes through policy and legislation’s enhancement and their compliance with the following key governance principles: i) securing local people’s ownerships over forest resources; ii) promoting the consultation of stakeholders regarding decisions that affect their access to natural resources; iii) promoting incentives to the participation of local people into forest management; iv) precisely define roles and responsibilities of stakeholders that are engaged in conservation initiatives; v) promoting fair benefits sharing or redistribution among stakeholders. Although, most of the countries of the Congo basin have successfully integrated these key governance principles in their policy and legislations, however, their implementation is of poor efficiency on the ground (RFUK, 2014), notably in Gabon (Sassen and Wan, 2006). Locally, practical approaches to regulate resources usages and dependency (natural resources gathering, hunting and fishing, logging operations and agriculture and fuel wood collection) of local people on protected forest resources are lacking (Yobo and Kasumi, 2014a; Yobo and Ito, 2015).

There is therefore a need to establish new models of conservation governance that integrate biodiversity and sustainable regulation of local people’s livelihoods needs. The latter approach has emerged under the drive of the World Commission on Protected Areas (WCPA) (Dudley, 2008) and tends to discard the “Yellowstone” a type of protected areas. In that management approach, the

needs and interests of local communities/ indigenous people are not taken into account since they are excluded from owning, managing and benefiting from the management of National Parks resources (Colchester, 2004). Studies carried out with local people living and depending forest resources of the Ivindo National Park (Gabon) tend to emphasize such a trend (Christian and Kasumi, 2014; Yobo and Ito, 2015). Despite the livelihood dependency of local people living around that park on forest products such as indigenous fruits species, they complain about resource decline driven by various anthropogenic factors and that they face restriction in access and use of forest resources inside of the park. They concluded that there is a need for designing future rules and regulations mechanisms for a successful utilization of forest resources of the park for both subsistence and income generation. Addressing the needs and interests of local people passes also through stakeholders consultation (Mudekwe, 2007). In the case of this study, the Consultative Committee in NTFPs (CCN-NTFPs) might play a key role in providing a platform of discussion about issues affecting local people’s livelihoods dependence over forest and protected areas (Table 4a and b). Issues of concerns that might be discussed may include how roles and responsibilities of institutions involved in forest and protected areas management should be effectively devolved to local communities for enhancing protected areas governance in the country.

Responsibilities of institutions interested in forest and National Parks resources management

The Gabonese government has devoted responsibilities over the management of its forests and protected areas (National Parks) to several institutions such as the General Direction of Water and Forestry (DGEF), the National Park National Agency (ANPN), the World Council Society (WCS) (Table 5). Although, these three institutions have different areas of intervention but some of them tend to overlap, especially with regards to biodiversity protection, wildlife conservation, and controlling and repressing law breakers. The DGEF and the direction of fauna and hunting of the ministry of waters and forests have not only the primary roles of regulating forest resources and wildlife conservation respectively but are also responsible of fining laws breakers when accessing and using illegally permanent forest estate. The WCS provides technical advice to the ANPN. The latter institution under the presidency of the republic is responsible for the management of the thirteen National Parks of Gabon but it is also responsible for protecting the rich biodiversity contains inside of buffer zone of 5 km long. Prior to the Forest Code of 2001, such buffer zones established around all National Parks were under the management authority of the ministry of waters

and forests but today, their management has been transferred to the ANPN (Gabonese Republic, 2007). However, it is not uncommon to encounter that the DGEF of the waters and forests ministry and the ANPN can be both involved in the management of biodiversity located inside of such buffer zones. The current forest code (2001) and National Park law (2007) have both acknowledged that carrying out livelihoods activities in buffer zones should not be detrimental to the environment of the zone and require an agreed management plan delivered by the relevant institution (Gabonese Republic, 2001, 2007).

The overlap of responsibilities among these institutions is not the result of assigned mandates by the state but it is rather due to the lack of knowledge about the physical boundaries of buffer zones (including National Parks) since there are no visible marks on the fields. In addition, discussions with key experts revealed each institution tends to operate independently with no veritable interaction and communication with each other. Overcoming such issue calls for communication and coordination between institutions, especially on the ground (Burdett, 2003). Interaction and cooperation among institutions could contribute to improve institutions performance (Johnson and Urpelainen, 2012) while the lack of interaction and cooperation among institutions may affect their performance with regards to forest resources management. Consequently, a careful interaction and communication among institutions may contribute to lessen the issue of overlap of responsibilities of institutions over protected forest resources management as it is evidenced in this study.

Evaluation of the effectiveness of governance over forest and National Parks resources in the country

The Gabonese government has made efforts towards setting up its vision for the “efficient” management of its forests and National Parks resources by integrating the seven well known key governance principles in its forest and National Parks laws and regulations. However, the effective implementation of such key governance principles tends to be weak on the grounds as highlighted by key experts responses (Table 6). The latter point is in line with the study of Massoukou (2007) which has shown that there were not transparency process nor fairness and equity in distribution of revenues gained from the exploitation of timber of the Equatorial Company of Wood (CEB) that is located in the Haut Ogooué province and consisting of 15 villages of 4919 inhabitants. In other regions of Gabon, the study of Sassen and Wan (2006), carried out around the closest communities of the Ivindo National Park (North-East of Gabon), has emphasized that local people needs and interests were not taken into account when planning and designing the management plan of that park. Recent studies of Christian and Kasumi (2014) and Yobo and Ito (2015) carried out around the

same local communities has also shown that access and use of forest resources tend to be prohibited by park managers despite local people’s dependence on resources located inside of the park. Thus, the primer aim of National Parks establishment was not designed to sustain local people’s livelihoods but rather to protect its rich biodiversity. These results are in line with the meta-analysis study of Porter-Bolland et al. (2012) which emphasizes that across the tropics, local people livelihoods dependence on forest resources was not taken into account in resources conservation initiatives and that local people’s rights were neither acknowledged nor secured. Acknowledging and securing local people’s rights passed through an effective decentralization mechanism over the management of forest resources (Agrawal and Gupta, 2005). In case of Gabon, a decentralization policy exists. However, it tends to be poorly implemented on the ground (Meunier et al., 2011), as it is the case in most countries of the Congo region.

Some of the consequences of the increasing expansion of protected area’s network in the Congo basin (second in size after the Amazon with over 180 million hectares) are: i) further protection measures to safeguard its rich biodiversity; and ii) less concerns directed towards addressing the needs and interests of forest-dependent peoples in resources management (RFUK, 2014). As a result, available national policies and legislations tend therefore to: i) be highly restrictive over protected areas resources access and use; ii) promote less protected areas governance led by indigenous peoples and local communities themselves; and iii) exclude more local people from management of forest and protected areas (Sassen and Wan, 2006; RFUK, 2014). This contributes to the threats on the livelihood of local communities who depend on the resources (Stevens, 2010), especially in the absence of alternatives to compensate local communities from losing access and use over their forests. The reconciliation of biodiversity conservation in protected areas and socioeconomic development of local and/or indigenous people is therefore needed (Naughton-Treves et al., 2005). However, caution in their future implementation is needed since such approach depends strongly on social, economical and political contexts of the country.

CONCLUSION AND RECOMMENDATIONS

Gabon has an established network of thirteen National Parks throughout of the country as an opportunity to increase biodiversity conservation and sustainable management of its rich ecosystem, and that large areas of forest have been allocated for timber production (sustainable timber extraction) and certification for economic development. However, the state has focused less on securing the livelihood of local communities since National Parks belong to one single category II that are characterized by “no take” policy, especially inside of

their boundaries. In those areas, access and use of resources are prohibited by available laws contributing therefore to threaten the livelihoods of local people living close by and depending on protected resources to some extent. In order to guide the management of its forest and National Parks resources, two key policies including the forest code (2001) and the National Parks law (2007) along with several regulations (decrees and ordinances) have been enacted. These policies and regulatory framework aim at achieving dual goals including: i) the industrialization of the forest sector and its sustainable management; and ii) forest protection and biodiversity conservation, eco-tourism development and conservation. On the contrary, such policies and regulatory framework have focused less on: i) addressing the livelihoods needs and interests of local people on resources base and secure their rights and participation into resources management and decision-making affecting their lives; ii) regulating resources uses in various locations of the park; and iii) reconciling both the livelihood's dependence of local community and biodiversity conservation at the same time.

Responsibilities over forests and National Parks resources management have been devolved by the state to several institutions including the General Direction of Water and Forestry, the National Park National Agency and the World Council Society, especially with regards to biodiversity conservation (forest and wildlife), patrolling and enforcing laws. However, there is an overlap of institutional mandates of these three institutions that might hamper the effectiveness of conservation governance, especially if left unchecked. Although, the seven well known key governance principles have been successfully integrated in the relevant policies and associated regulations to enhance forest and National Parks resources management and its biodiversity conservation, however, these key governance principles tend to be poorly implemented on the ground. This may contribute to undermining the already achieved goals by the state with regards to forests and National Parks resources management on one hand and threaten the livelihoods security of local people who depend on such resources on the other hand.

The following recommendations are drawn from this study,

- i) Clearly redefine the responsibilities of the institutions involved in the management of forest and National Parks resources
- ii) Care has to be taken by policy makers to successfully implement the seven key governance principles to meet both biodiversity conservation and livelihood security of local people, especially on the ground
- iii) Integrate the needs and interests of local people in policies and legal frameworks that govern the management of forest and National Parks through pilot studies. Once found successful, such study can be

scaled up to other National Parks and that policies and legal frameworks should be improved accordingly.

Conflict of Interests

The authors have not declared any conflict of interests.

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