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**ANALYSIS OF THE FOREST POLICY IN DEMOCRATIC
REPUBLIC OF CONGO, CASE OF LUBUMBASHI (MIOMBO
FOREST)**

BY

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
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Abstract

This research focused on the assessment of the implementation of the forest policy in Lubumbashi in the Democratic Republic of Congo. The purpose of this research was to assess the effectiveness of the current forest policy in the Democratic Republic of Congo, since its implementation in 2002. The research was conducted in Lubumbashi in three different villages: Lumata, Kashamata, and Kawama. The research examined the rights and obligations of the stakeholders as provided by the forest policy. The study contributes to providing information for decision making since the forests play an important role in the daily life of the Congolese people. The study aims to find failures in the implementation of the policy in order to give recommendations of how it may be improved for the wellbeing of both the government and the stakeholders, but also to find successes in the implementation in case the government decides to modify the policy. The study contributes by informing the targeted population in Lubumbashi on what are their rights and obligations toward the forest, as well as collecting information on the field necessary for the local government in the establishment of the local forestry plan. The researcher used qualitative method. Both primary and secondary data were collected for this research through interviews, focus group discussion, questionnaire and observation. The interviews include different local forestry authorities, the government, and local communities. The results of the research showed that effective implementation of the forest policy cannot be possible in an environment where no effective policy instruments of law enforcement are in place, as well as a lack of forest management knowledge. The results show that, due to political matter in Democratic Republic of Congo, the government has not been able to put measures to solve all failures in the implementation of the forest policy. This has remained a difficult issue and challenge that the government has not been able to find a sustainable solution. The researcher recommends the need to develop a sustainable community forest management in the Miombo forest in Lubumbashi by encouraging dialogue between all stakeholders involved, and to clarify all measures taken toward the forest to local communities as a solution to existing conflicts. The government, on the national level, needs to review the forest. A policy framework, on the local level, should be put in place as soon as possible for forest institutions to be able to function. The Democratic Republic of Congo needs to be more open to developed countries and collaborate with them to develop sustainable community forest management, which will allow effective implementation of the forest policy.

Key Words: Assessment; Implementation; Stakeholders; Framework.

Declaration

I declare that this dissertation is my original work except where sources have been acknowledged. The work has never been submitted, nor will it ever be submitted to another University for the award of a degree.



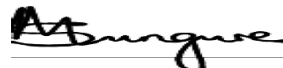
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Dedication

This dissertation is dedicated to my Lord and Savior Jesus Christ who saved my soul and my life from hell on the cross. To my parents Jean-Pierre Mufunga and Helène Mboya. Your mere existence is where my ambition and perseverance are derived. To my entire family for the encouragement and support throughout the course of my studies. To all my family who understands the value of education and always encourage me to work hard.

List of Acronyms and Abbreviations

DRC	Democratic Republic of Congo
FAO	Food and Agricultural Organization
NGOs	Non-Governmental Organizations
UNILU	University of Lubumbashi
GEFF	Global Environment Foundations Fund
NTFPs	Non-Timber Forest Products
CPL	Central, Provincial and Local
FAC	Forest Advisor Council

Definition of Key Terms

Assessment	Process of estimating and evaluating significant short-term and long-term effects of a program or project on the quality of its location's environment (Benneker, 2011).
Implementation	An act or instance of implementing something, the process of making something active or effective (Food and Agriculture Organisation [FAO], 2009).
Forest	A large tract of land covered with trees and underbrush; woodland (FAO, 2009).
Stakeholders	A person, group or organization that has interest or concern in an organization (Benneker, 2011).
Policy	A set of ideas or a plan of what to do in particular situations that has been agreed to officially by a group of people, a business organization, a government, or a political party (Ribot, 2005).
Sustainable Development	Sustainable development may be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations [UN], 2018).
Policy Framework	Is document that sets out a set of procedures or goals, which might be used in negotiation or decision-making to guide a more detailed set of policies, or to guide ongoing maintenance of an organization's policies (Ribot, 2005).

Reserve Forest

An area of forest set aside and preserved by the government as a wilderness, national park, or the like.

Protected Forest

A protected forest is a specific term to denote forests with some amount of legal, and / or constitutional protection in certain countries, besides being a generic term to denote forests where the habitat and resident species are legally accorded protection and are protected from any further depletion (Forest Policy/ Art. 36).

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CHAPTER 1 INTRODUCTION

1.1 Introduction

The Democratic Republic of Congo (DRC) is one of Africa's richest countries in natural and human resources (FAO, 2009). With a raining season, for major areas in the country, of almost 11 months, fertile soils, vast forests and mineral deposits represent a considerable wealth and potential for the 80 million Congolese. The country's dense forest harbors half of Africa's and an eighth of the world's remaining dense moist forest, following the National Ministry of Environment of the DRC (Ministry of Environment [MoE], 2008). Extensive efforts have been made over the last two decades to improve the governance, management and conservation of the Congo Forest in general, and the rainforest area in DRC in particular. In 2002, with considerable aid from the World Bank, the 1949 colonial Forest Code was replaced by a new forest code (Kiyulu, 2011).

The new forest code adopted in middle of 2002 aimed to promote sustainable forest management and socio-economic development based on the use of forest resources. According to Mbala (2010), Congolese government has been active in implementing its reform agenda aiming at effective sustainable forest management.

Due to the damage caused by the war and the mismanagement that occurred from that as afore mentioned, the Forest Code was adopted in order to set the framework for more equitable and balanced forest management. All innovations that the new forest code could bring in aimed to maintain all traditional user rights, including those of indigenous people. In addition, the forest code introduced new reforms in the forest management plans in all production forests including the protection of wildlife; the right for local communities to manage forests they own under customary rights, return

of 40 per cent of the area fee to provinces and territories, mandatory implementation of social responsibility contracts, consultation with local people prior to assigning a forest to conservation or production, allocation of production forests through transparent methods, a target of 15 per cent of the area of the country under protection status, and promotion of non-extractive forest uses such as environmental services. The DRC Government started a priority reform agenda in 2002, at a time when forest institutions had broken up. The majority of the country's forests were locked up under large scale logging concessions, with no local consultation, no fair return for the local people or the country, and no consideration for alternative forest uses (Mbala, 2010). In the absence of radically innovative policy actions, this situation was clearly conducive to further social, economic and environmental losses. The challenge was to bring these innovations into practice whereby the country would repair all the damage caused by the long years of conflicts and wars.

In order to encourage the government to continue the priority agenda undertaken since 2002, to finish cleaning up old concessions, to start implementing sustainably the 2002 Forest Code, and also to sustainably match with the World Bank Forest Strategy (World Bank [WB], 2002), monitoring of the implementation is required in order to assess the effectiveness of the forest policy in the Democratic Republic of Congo for economic, social and ecological sustainability since the country is aiming to grow economically.

Under a new administration introduced by the recent voted President Felix Tshisekedi, which replaces the old administration of Joseph Kabila that introduced the current forest code, the Congolese government is now working with the international community, civil society and local NGOs to strengthen the management of natural resources. This administration has guaranteed, through the National Ministry of

Environment and Sustainable Development Mr. Claude Nyamungambo at the 15th session of the Conference of the Parties serving as meeting of the parties under the Kyoto Protocol (MOP15), that the new administration will allow a fundamental reform of the laws and policies governing the forest sector in the DRC. Furthermore, the economic growth advocated by the new administration would also be effective by relying on the country's natural resources among which the forest is part of. Therefore, a critical assessment of the current forest policy implementation is required in order to evaluate the effectiveness of that policy toward the targeted stakeholders, and the fulfillment of the intended objectives; because good governance and implementation of the policy, including strong resources, rights to local communities and sustainable investments may galvanize sustainable development and enable the Congolese people to benefit from that forest wealth.

1.2 Background of the Study

Shortly after independence in 1960, the country was under a dictatorship for close to 30 years. This situation led to a civil war and armed border scuffles with two neighboring countries. After 75 years of organized colonial rule around the extraction of these natural riches and human rights, Independent State of Congo (1885 - 1908), which later became Belgian Congo, got its independence in 1960. Five years later, a coup d'état overthrew the young government. The country was renamed Zaire and went through a long time marked by deficient economic management and a lack of investment in infrastructure the most basic. In this context, and under the guise of war, a number of internal and external armed groups carried out illegal overexploitation of the country's abundant natural resources and most people in and around DRC were profoundly affected by the war's devastation up to 1997 when the Democratic

Republic of Congo (DRC, formerly Zaire) underwent an immense political change with the rise of Laurent Désiré KABILA as president. Unfortunately, political instability, war and social unrest prevented the Congolese people from enjoying many benefits. The 1990s were marked by a severe instability for the country: two regional wars successively decimated the populations and severely damaged local flora and fauna. The formal economy collapsed and government officials were unable to protect and properly manage natural resources (Debroux, 2007). Following years of War, the DRC launched a process to rebuild its political institutions and stimulate development economic initiated by the former President Laurent KABILA at the end of the last century.

The government has initiated a set of simple corrective and preventive measures toward the forest. Launched in the wake of the war, in a country with no roads and almost no functional institutions, the agenda of introducing innovations in the management of the forest was both selective and pragmatic. Its targeted issues, if not resolved very soon, would irreversibly harm the environment and local communities, and deprive the DRC of the benefits from its forests. The agenda emphasized enforcement of laws and contracts, as well as transparency to reduce corruption and foster public debate and accountability. The above-mentioned measures required political more than financial means or technical capacities. Those measures prevent poorly informed decisions from being made today that would preclude the realization of a broader vision in the future. When, and if, these measures are completed, then achieving the long-term vision which is to establish a sustainable management of the forest as well as making the country profit from its natural resources, will become possible. The forest code had to fulfill its social and ecological roles in balance. That required the forest administration to contribute considerably to national development,

and for local people to take an active part in forest management and be able to draw legitimate benefits. Furthermore, forest ownership and user rights were also subject to reform in the 2002 Forest Code, which sets out the basic framework for the DRC Government's forest policy. However, according to Benneker (2011), notes that there was almost no consultation over the Forest Code, and very few people other than senior officials in the Ministry of Environment were aware of its development, and such statements attracted the attention of the researcher since the efficiency of any policy implementation relies on stakeholders' participations.

In accordance with the aforementioned provisions of the Forest Code, the process of developing the forest policy was conducted in a participatory and communicative manner. The main elements of the process were:

- An institutional framework set by a regulatory text and centered around a Steering Committee and a Working Group bringing together representatives of stakeholders in the forest sector: the forest administration (government), civil society (NGOs), the private sector, local communities and / or indigenous peoples as well as development partners;
- The realization of three thematic studies on (i) the diagnosis of the sector, (ii) the effects of non-forestry policies on sustainable forest management and ((iii) legal aspects.
- Facilitation of negotiations between stakeholder delegates, as well as the organization of provincial workshops. The delegates concerned have indeed expressed aspirations based on their legitimate interests of the parties they represent and negotiated accordingly, the vision, the objectives and the strategic choices of forest policy.

The documentation resulting from thematic studies, the work of the Working Group and the various workshops both in the provinces and in the capital city Kinshasa, made it possible to have a substantial database of information and to produce, in a concerted manner, an outline of forest policy document. The latter was a useful guide to drafting forest policy. In addition, the drafting phase benefited from the contribution of an international consultant and a national consultant while receiving support from FAO experts both at the level of Headquarters in Rome and at the level of the Sub-Regional Office for the Central Africa.

1.2.1 Study Area

The study was carried out in Lubumbashi city located in the outtheastern part of DRC. The city is the second largest in the DRC surrounded by a Miombo-type forest “The Miombo woodland” which is widely spread in Zambebian Africa. Lubumbashi is the mining capital of the Democratic Republic of Congo, acting as a hub for many of the country’s biggest mining companies. The copper mining city serves as the capital of the relatively prosperous Haut-Katanga province, and is near the border with Zambia. Population is estimated at around 1.794 million. This research was carried out in three villages in the Miombo forest of Lubumbashi

1.2.1.1 Kawama Village

Located more than 25 kilometers South-East from Lubumbashi center town (Postal building), kawama is one of the localities that make up the Kaponda chiefdom in the Miombo forest, it takes its name from the Kawama River that runs through the village.

1.2.1.2 Kashamata Village

Located 20 Kilometers North-East from Lubumbashi center town (Postal building), Kashamata Village is also one of the localities that make up the Kaponda chiefdom in the Miombo forest.

1.2.1.3 Lumata Village

It is the farthest and biggest village among the three. Located 45 kilometers North-East from Lubumbashi center town (Postal building), the village is headed by chief Kalengwe.

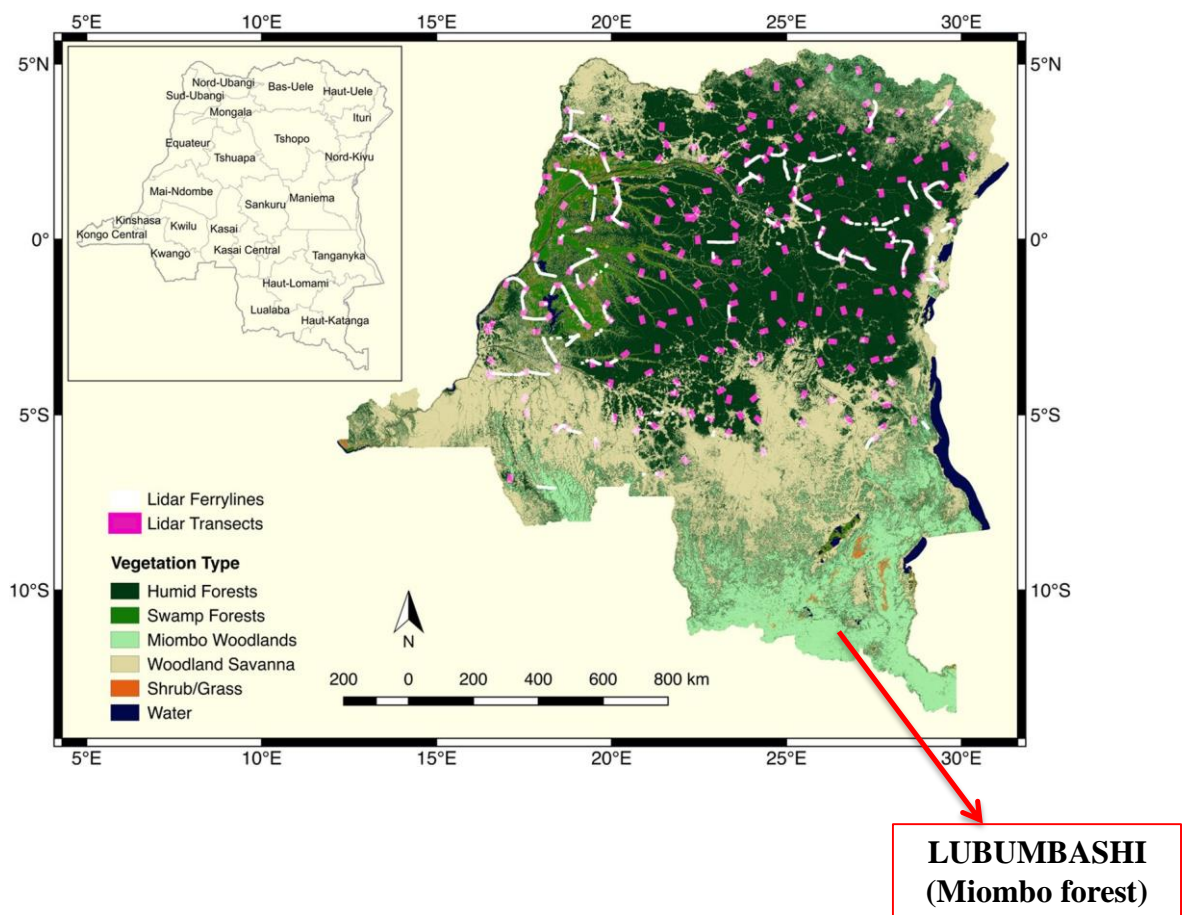


Figure 1 Democratic Republic of Congo Forest Cover

(Source: Ministry of Environment, 2010).

The above picture shows the location of Lubumbashi city throughout the global forest cover of the country. It also shows the density of the forest around Lubumbashi city area as well as the kind of vegetation that is found in that particular area that, for this research, constitutes the study. The Miombo woodland is a vast African dryland forest ecosystem covering close to 2.7 million km² across southern Africa (Angola, Democratic Republic of the Congo, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe). The woodlands are characterized by the dominance of *Brachystegia* species, either alone or in association with *Julbernardia* and *Isoberlinia* species (FAO, 2018).

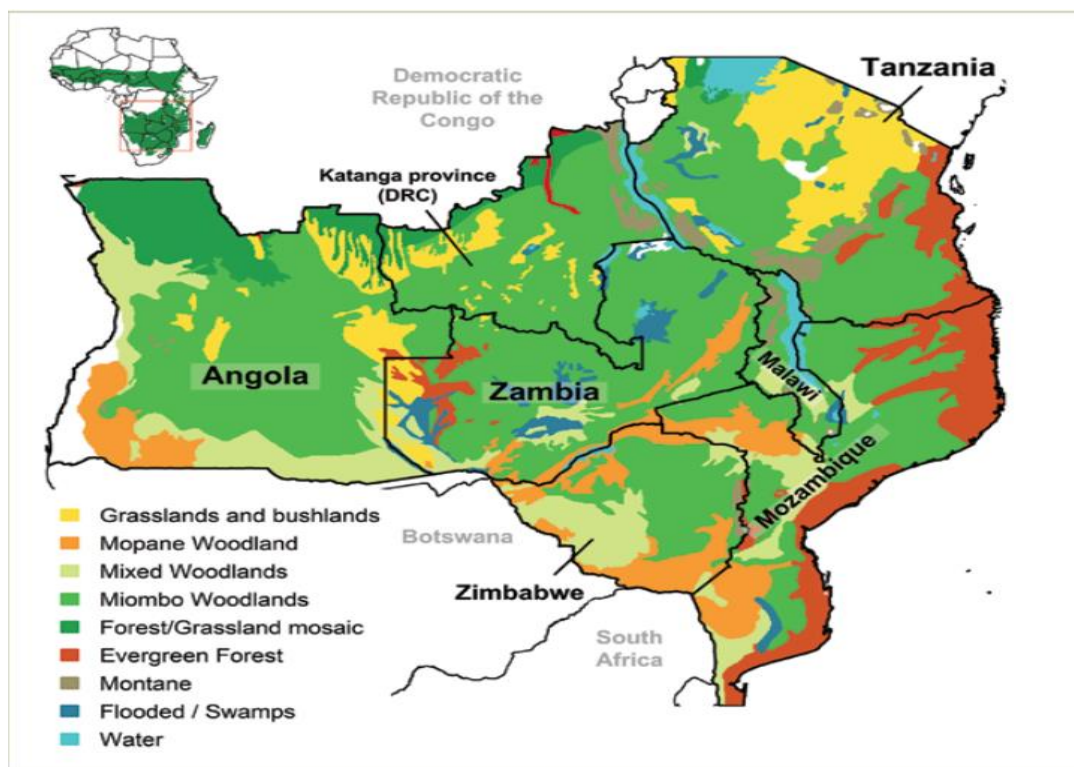


Figure 2 *Main Land Cover Types in Miombo Eco-region*
Source: FAO (2018)

Miombo vegetation is characterized by the dominance of *Brachystegia* species (from which it takes its name), either alone or in association with *Julbernardia* and *Isoberlinia*

species. The Miombo is found in the broader tropical dry forests of southern Africa. Miombo is the Swahili word for *Brachystegia*, one of many species found across this transboundary ecosystem. The ecosystem describes the vastest dry forest biome in southern Africa, stretching over seven countries (Angola, DRC, Malawi, Mozambique, Tanzania, Zambia and Zimbabwe), covering more than 2.7 million km²

1.3 Statement of the Problem

The likelihood of improving things in the forest may become insignificant and Forest, local institutions have deteriorated hence reinforcement is urgently required (Debroux, 2007). Moreover, Counsell (2006) emphasised more about the critical forest situation in the DRC by saying that at present most of the legal instruments that should govern the use of the country's forests are still incomplete or not yet adopted, and the government's ability to enforce the new policy, legal and planning regime is anyway, at present, almost nil.

In relation to the current study, his research study fails short in proving the implementation of the forest policy and focuses on whether the government has resources or not. The problem at hand is whether the areas where resources are, there is an effective implementation of the forest policy.

In addition, the study done by Kiyulu (2011) concluded after his research that effective and functional forest verification is almost non-existent in the DRC. FAO (2009) alluded that half of Congolese population rely on the forest resources. The forestry plan in the country was elaborated by the governor in their respective provinces as stipulated by the forest code in its Article 6, and that considering the fact that the forest repartition throughout the country is not homogenous. Thus, considering the high reliance of population over the forest for their daily life, the governance in provinces

with populated cities is therefore more challenging for the governors, since the forestry plan must take into account the number of people.

However, looking at his research, he looked at the effectiveness of conducting forest verification, whilst the problem at hand was whether the government is even being giving it a try and put their policies into action. He showed that over population was posing some challenges for the forest governors to do their tasks. This is different from what the current study is after as noted above. Also in studies by Palo and Uusivuori (2012), looked into how forest policies affected the revenues of the DRC timber industry. How policies were being implemented was not thoroughly done. All these research gap has prompted this study.

1.4 Research Objectives

The objectives of this research were to:

- 1.4.1 Evaluate the impact of the forest policy on the local community in Lubumbashi (Miombo forest), since its adoption in 2002.
- 1.4.2 Identify the role of the state and other stakeholders in the implementation of the forestry policy in the Miombo forest.
- 1.4.3 Analyse the transformation of the Miombo forest and its impact on the local Ecosystem.

1.5 Research Questions

The research was guided by the following research questions:

- 1.5.1 What significant impacts does the current forest policy have on the local community livelihood in Lubumbashi?
- 1.5.2 In which way the implication of the government and principal stakeholders in the implementation of the forest policy up to the challenge?

1.5.3 Through what major changes did the Miombo forest undergo in the past two decades?

1.6 Purpose of the Research

The research aims to assess the effectiveness of the current forest policy in the Democratic Republic of Congo, since its implementation in 2002. The study contributes to providing information on the progress of that policy since the forest plays an important role in the daily lives of the Congolese population. The study aims to find failures in the implementation of the policy, in order to give recommendations of how it may be improved for the wellbeing of both the government and the stakeholders; but also, to find successes in the implementation in case the government decides to modify the policy. The study contributed to raising the awareness of the population in Lubumbashi on what are their rights and obligations toward the forest, and collecting information on the ground for the local leaders in order to help them in the establishment of the local forestry plan since it is part of their duty.

1.7 Assumptions of the Study

This study supposes that the implementation of the forest policy is important in order to ensure the wellbeing of the population, the country's economic growth and the environmental sustainability of the region as well as the entire world considering the natural wealth of DRC. It further assumes that both the government and the local population are interested and willing to take a new departure in the forest management, for shared and common interest.

1.8 Significance of the Study

While various studies have mostly discussed on issues related to how the forest in the DRC is under serious threats, how the forest policy is poorly implemented, however, no studies strongly examine and asses the causes of such problems. The main fault was mainly addressed only to government without taking into account the participation of others stakeholders and deeply digs to find out solutions that may bring up solutions. In addition, factors that support the analysis of previous studies that were carried out on the national level, without considering the implication of the subsidiaries locally installed. Moreover, the realities and factors that influenced the enactment of the policy have changed since, and the reliance of people on the forest has been growing, at the same moment the main city in the DRC is becoming overcrowded. All this on growing issues bring up additional challenges for the analysts and researchers. This research therefore investigated whether the forest policy fulfilled the aims that it has set up for in 2002; and secondly if it met the needs of the local people for both their reliance on the forest and their participation in the implementation.

Taking into consideration the initial intension of the central government of DRC and considering the implication of the local government, the researcher examined the history and current application and implementation of the forest policy in Lubumbashi (Miombo forest). The researcher analyzed the action taken by the local government and leaders along several dimensions of governance, including toward the inner administration, while keeping a sharp focus on the reality on the ground where the targeted stakeholders are mostly involved.

Even though difficulties with the local government are widely acknowledged by Benneker (2011), in his study argues that practical problems faced by the local governance associated with participation of the central government, are key elements

to understand the root of the mismanagement raised by Benneker (2011) and were directly assessed. How broad, deep, and sustained is the local governance considering the increasing of population in Lubumbashi city and how the local people get accommodated to the daily changing realities in the city as well. Furthermore, considering that the majority of the local population are illiterate, how did the local government manage to undertake required actions to spread out the forest code and monitor its implementation to people who cannot read and understand the official language of the country. Raising the fact that the forest code was enacted to help the DRC in its objective of economic growth, the research investigated how the local government has used the funds collected from the forest exploitation. Finally, highlighting the biodiversity wealth of the country and its implication in the world ecosystem, this research reports all the environmental threats that the Miombo forest is facing.

The findings of this research thereby, shall contribute to the current body of knowledge that may be used to enrich literature for those who would want to go further in assessing the forest policy, investigate government actions toward a specific population, adopting policies to protect natural resources which are seriously drained all over the world. In addition, this research provided crucial information for effective forest policy management in the establishment of the forestry plan for the local government. This study provides a framework for central government entities, international associations for forest management and protection, and the United Nations department that are in charge of the forest FAO to come up with strategies and legal frameworks that will ensure further sustainable and effective adoption and implementation of forest policy in overcrowded cities. It was aimed that the findings of this study strengthen the participation of local population in Lubumbashi their

expected benefits and provide strategies for them to positively be part and contribute in the enactment and implementation of the forest policy.

1.9 Delimitations

The study focused on the assessment of the forest policy in Lubumbashi (Miombo forest). The chosen area of my study is Lubumbashi because it is a city with high density of population bearing one of the protected forest, in the Democratic Republic of Congo. The research was limited to this area only because the Democratic Republic of Congo in its entirety is too big for a precise and effective analysis. The research mainly highlights problems such as the gap between the practices and the policy, instrument not completed, and impact on the local population. The research focussed on political, social-economic and environmental implications. The research area is located in area of 50 km as diameter from the postal office in the Central Business District as the starting point of the circle, and that taking into consideration the location of main villages in the Miombo forest.

1.10 Limitations

The researcher failed to get the targeted participants for the questionnaire survey due to the refusal of some individuals to participate. Some participants were timid and feared that the researcher might have been a member of a political party soliciting information that would be later linked to them. The population on the ground suspected the researcher to be an agent of the department of environment. Therefore, they thought that if they opened up too much, they would be victimized. Some participants were afraid to answer questions, thinking since the questions are related to the forest policy, the government want them to stop their activities and therefore prohibit them to fulfill their daily forest activities on which they rely to survive. This

challenge was mitigated by the involvement of traditional leaders and other community leaders such as traditional councilors, who guaranteed and explained to their community members that this was solely a scholarly research. They helped clear the air about the objectives and purpose of the study which made participants to open up. In each village the researcher was given a community member to accompany him for introductions.

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter reviewed a selection of literature which had a bearing on the implementation of the forest policy in Lubumbashi in DRC. The chapter also sought to provide some background to different effectiveness of the current forest policy in theoretical framework of policy implementation, in particular, in and outside the Democratic Republic of Congo. Recently, the concept of implantation of the forest policy has become a popular subject in many fields and in the DRC county at large. Finally, a brief overview of implementation of forest policy was given.

2.2 Theoretical Framework

Theoretical framework is the blueprint or guide for a research (Grant & Osanloo, 2014). In addition, it is a framework based on an existing theory in a field of inquiry that is related and reflects the hypothesis of a study. Theoretical framework serves as a foundation upon which a researcher is constructed. Sinclair (2007); Fultron and Miller (2010) compared the role of theoretical framework to that of a map or travel plan. Thus, like when you are traveling to a particular location, the map guides your path. Likewise, the theoretical framework in this research guided the researcher from not deviating from the scope of the research and theory.

2.2.1 Theory-Based Evaluation

In this research, the researcher applied a theory-based evaluation approach. Theory based evaluation is an approach to evaluation that is a conceptual analytical model and not a specific method or technique. In other words, it is a way of structuring and undertaking analysis in an evaluation. According to Stern (2015), a theory-based evaluation is based on an explicit theory of change or logic model that explains the

theory of a development intervention. As a result, the evaluation is designed to test the theory to see if it holds true. If it does, the task of the evaluator is to produce a plausible case, with evidence that shows what has changed at each level of the theory, and explores the linkages between those changes (White, 2009). Therefore, theory base evaluation is applicable and supports this research to achieve wider understanding and assessment of implementation of forest policy in the DRC. Largely, forest policy implementation in DRC should be in line with theory base evaluation.

On the contrary, Henry (2016) contributed that theory-based evaluation is conducted in different ways, for different purposes and it produces evidence intended to influence policymaking. Further, it involves an independent assessment of the social problem that is to be addressed through government action while adopting policies, and an assessment of the costs and- consequences of relevant policy alternatives, which is systematically investigate the effectiveness of policy interventions, implementation and processes, and to determine their merit, worth or value in terms of improving the social and economic conditions for both targeted stakeholders and government.

Therefore, in this study, the policy analysis and evaluation was done by linking theory based evaluation to the forest capacity of the Democratic Republic of Congo, Lubumbashi in particular with the reliance of the population on it (Debroux, 2007).

The decades of war favored many abuses toward the forest, by illegal activities such as logging, illegal tourism. In order to assess the social problems that are to be addressed through government action while adopting policies, the theory-based evaluation supports and link with the background of the forest policy implementation in DRC. On the other hand, Benneker (2011) criticized the lack of functional

institutions while adopting the policy; and if the actions undertaken by the government for the implementation of the policy were adapted to the ground's realities.

Moreover, since a policy analysis and evaluation is conducted for different purposes and it produces evidence intended to influence policymaking, and since collaborative forest management and participation into decision-making processes has become a symbol of postmodern governance in the forest sector as mentioned (Ribot, 2005). This approach highlighted the government and stakeholders' implications in the decision making and implementation; but also provided important information for both national and local policymakers in DRC. The government implication plays an important role, as well as the stakeholders in the implementation of forest policy; and the contribution of each part should be well understood and differentiated in the assessment process.

2.3 Existing Forest Policy in the DRC

Many scholars argue that the proximate causes of the high rate of global forest loss are complex and quite poorly understood (White & Martin, 2005). Therefore, theory-based evaluation promoted the investigation of the effectiveness of policy interventions, implementation and processes, and the determination of their merit, worth or value in terms of improving the social and economic conditions of targeted stakeholders; will allow to identify its fulfillments because it is very important for the local evaluation, in order to know exactly the strength and weakness of the local forestry plan's accommodation on the forest.

In that retrospect, the researcher reviewed that on stakeholders and government implications toward the policy implementation, and this new approach tremendously allowed an identification from which area the implementation may be improved. The population's reliance on the forest in the Democratic Republic of Congo raises another

challenge for the forestry policymaker, especially the local government since any decision should not compromise the wellbeing of the people in the country, but also the main objectives of the National forest policy which also take into account the environmental issue. The research involves the most concerned population in terms of dependence on the forest resource for their daily well-being and has also isolated each case regarding different regions in Lubumbashi Miombo forest.

The rapid rate of forest resource depletion, especially across the humid tropics, has been the focus of much environmental concern in recent years. Although the proximate causes of this high rate of global forest loss are complex and quite poorly understood. It is generally acknowledged that formulating a good forest policy and implementing it effectively is essential for sustainable forest management, and a good forest policy also has the potential for increasing government revenue and for improving the livelihoods of poor people in forest communities. Unsurprisingly, many developing countries claim that they have adopted such sustainable forest policies (Ribot, 2005). Despite this suggestion, there are very few studies on forest policy, especially in Africa. Little is still known about how governments in Africa respond to pressures from international donors. Even though many governments claim that they have adopted forest resource management decentralization, few researchers have examined how these stated policies are implemented in individual countries (Ribot, 2005). Furthermore, while it has been acknowledged that forests and forestry are often perceived differently by various competing groups, the contests and negotiations over forest policy have not been fully understood nor explored. As emphasised by the previous statements, the implementation of forest policies in Africa is still a fragile subject, and the effectiveness may bring some interrogation in the way that the continent is known for its negligence in any kind of governance.

Despite good intentions, forest policies often fail because of weak implementation, a lack of support, divergent interests and a lack of sanctions and enforcement. Detailed strategies and action plans should be developed for implementing new forest policies, setting out including an explicit division of duties on how to put the policy into practice and achieve its objectives. Laws should be aligned with the forest policy, an exercise that may commence on completion of the forest policy development process or be conducted in parallel to it. Even when a forest policy is implemented effectively, however, changing conditions and new developments may require that the policy is revised or adapted. Forest managers should continue to be fulcrums for policy implementation and revision by ensuring sound technical knowledge is communicated in a timely fashion to policymakers and that dialogue is maintained among stakeholders to facilitate this. Roundtables have been used effectively in many countries as a way of maintaining sub-national and national dialogues and ensuring that ongoing policy development processes receive adequate operational and financial support. Another way of putting a forest policy into action is to implement elements of it on a pilot basis as a way of demonstrating its value. This approach was taken, for example, in the issuance of forest compensation certificates, to smallholders in the county of Hojancha in Costa Rica; after two years, the proven system was applied countrywide for elaborating the policy (FAO, 2018).

2.4 The Government and Policy in DRC

Kiyulu (2012) following a review of old logging titles, the forestry sector in the Democratic Republic of Congo (DRC) still faces many governance challenges. Communities lack knowledge of forest law and policies due to poor access to legal regulations and guidelines. The sector is characterised by corrupt practices and a culture of impunity. Punishments for breaking the law lack severity to act as a deterrent

for illegal logging (Kiyulu, 2011). This combined with frequent harassment by state agents, leads to an increase in illegal activities. There is insufficient institutional capacity for forest management, and a huge gap between policy and practice. Kiyulu further argued that the government's commitment to the involvement of local communities in forest governance is theoretical, as it appears unwilling to contribute constructively to the sector. Kiyulu (2011) additionally, stressed that the forestry sector contributes very little to the national economy, at just 1% to GDP, compared to an average of 5% for other countries in the Central Africa Forestry Commission.

2.4.1 Government and Stakeholders Towards Implementation of Forest Policy

Government publications and parts of the academic literature are abuzz with terms like community-based forestry, collaborative forest management, and participation. Incorporating participatory elements into decision-making processes has become a symbol of postmodern governance, not just in the forestry sector. Participation has entered many different policy fields, but it is particularly prevalent in environmental and natural resource policies (Koontz, 2006). Several authors according to this review insisted that all stakeholders in the forestry sector should promote a culture of transparency and active partnership with the government for successful implementation of the forest policy. This in other words showed that government plays a pivotal role in policy implementation especially in forest through policy makers bodies.

Apart from that, the application of laws and regulations is not only the responsibility of the state but of all stakeholders. That being said, political elites should set the moral tone and cannot simply leave the management of the forestry sector to the private sector and development partners.

Although the general popularity of participatory processes in forest policy and management is evident, the concrete meaning of participation differs depending on the context. Much of the participation literature on forest management and policy focus on developing countries. Development organizations and developing country governments adopted participatory forest management practices early on with India and Nepal among the most prominent examples. In many developing countries, large areas of forest that are used to sustain the livelihoods of rural communities are under state ownership, and governments are in charge of regulating the use of the resource. While centralized government resource management may be effective, it has proven vulnerable to abuse by political and economic elites. Once the enforcement of rules fail due to lack of capacity, ability, or willingness, state-owned forests turn into de facto open-access resources, thus making them susceptible to unregulated exploitation and degradation (White & Martin, 2005).

2.5 Inlusiveness in Policy Implementation

The interactions during the policy formulation and decision-making stages are observed with special attention to the role of scientists. Representatives of three target groups were interviewed: forestry officials, stakeholders, and forestry scientists. The stakeholders tend to believe their main form of participation in policy processes is decision-making, not realizing that the final decisions are made by forestry officials or by politicians: the minister, government or Parliament. Consensual proposals or decisions are important because these usually form the basis for final formulations in policy documents. The policy processes are mostly facilitated by forestry officials whose mediation skills need improvement. There is a major conflict between stakeholders representing timber production and environmental protection. In policy discussions, the environmentalists should provide more analysis, otherwise, their

viewpoints are ignored. Forestry scientists fall short in their most important role as honest brokers; they must learn how to integrate themselves into policy processes. Very often scientists act as observers, but other participants expect them to actively bring scientific information and knowledge into discussions. In addition to the face-to-face meetings, new communication tools (e-consultation and e-participation) are available, but they are underused in the policy formulation processes (Teder & Kaimre, 2018).

2.6 Impact of Implementation of Forest Policy

Available literature postulates that policies have an impact on management decisions. While policy formulators strongly stressed that governments should take a lead role in the development of forest policies. The policy formulation and implementation process should be inclusive and involve all stake actors and take advantage of their knowledge, experience, and perceptions. Today more than ever, stakeholders want forest policies to address broad socio-economic concerns, such as tenure, access to forest resources, the equitable distribution of benefits, and local versus state-sanctioned rights. If ignored, such concerns may breed prolonged conflict. Moreover, forest managers are increasingly held accountable by society for how they manage and use forest assets. The process of developing a forest policy, therefore, requires regular consultations among stakeholders to balance divergent interests, identifying key issues and ensuring that the benefits derived from forests, and the costs, are distributed equitably.

Forest managers who may be professional foresters or traditional managers must be involved in the development of forest policies for the following reasons, among others:

- Societies increasingly hold forest managers accountable for how they manage and use forest assets.
- Forest managers possess knowledge about forest users and use that other stakeholder may not have. They may play a key role in policy development by sharing their day-to-day experiences in managing forests and by ensuring that policy priorities and objectives are technically viable.
- A forest policy defines general long-term goals that frame managerial decisions. A long-term goal to increase forest cover, for example, will require activities set out in management plans involving a specific number of hectares, the identification of suitable species, etc., and an associated budget. Involving managers in policy development will help ensure that goals are realistic and achievable.
- The involvement of forest managers in policy development, together with other stakeholders such as local people, local authorities, private interests, and other sectors, may help in creating partnerships to implement the policy that is ultimately developed and in avoiding or managing conflicts over land use.
- The involvement of forest managers in policy development increases their responsibility for policy implementation and, where those managers are government employees, promotes government accountability (FAO, 2018).

2.7 Policy Effectiveness

The effectiveness of policy implementation documented for environmental assessments explains the concept of effectiveness triangle (Sadler, 1996). The term effectiveness is explained by Sadler as whether something works as intended and

meets the purpose for which it is designed. Environmental assessments aim to facilitate sound, integrated decision making by providing clear, well- organized information on the environmental effects, risks, and consequences that must be considered to achieve the ultimate goals of environmental protection and sustainable development. Effectiveness is evaluated by Sadler using three generic criteria: procedural (to meet accepted principles and provisions), substantive (to achieve established purposes and objectives), and trans-active (to determine the extent to which the procedural principles deliver the substantive objectives at the least cost and in the minimum time possible). Ultimately, overall effectiveness is achieved if it supports policy and institutional reforms to the decision-making process of environmental protection and sustainable development.

FAO (2009), further examined the effectiveness of policy implementation regarding natural hazards and climate-induced disasters such as floods, flash floods, and droughts remains a major gap and an important research area. This was evidenced by discussions ongoing on how empirical research that focuses on governance and policymaking may inform the adaptation literature, and what happens when the best-laid plans meet the real world, which may crucially affect policy outcomes. Although, the state policies continue to play a key role in shaping adaptation options, it is equally important to enhance the adaptive capacity of people. Since most local-level policies are responsive to directives from higher levels of government, there is an opportunity to integrate national goals into sectoral policies and action plans at the local level. Yet questions remain unanswered on how to increase the adaptive capacity of local communities to ongoing changes and extreme events (Chen, Wang, & Huang, 2014). Impact evaluation refers to the range of methodologies that assess the extent to which outcomes observed may be attributed to a project, program or policy intervention.

These outcomes may be concerning the uptake of public services, improved nutritional status, better test scores, higher incomes and so on. In contrast to outcome monitoring, which simply measures whether targets have been achieved, impact evaluations help us answer key questions for evidence-based policymaking, namely, what works, what doesn't, where, why and for how much. It is therefore integral to our efforts to improve the effectiveness of policies aimed at reducing child poverty, as well as of development efforts more generally in achieving outcomes (Waddington & Snilstveit , 2010).

The researcher in nutshell reviewed that all stakeholders in the forestry sector should promote a culture of transparency and active partnership while the application of laws and regulations is not only the responsibility of the state, but of all stakeholders. That being said, political elites should set the moral tone and cannot simply leave the management of the forestry sector to the private sector and development partners.

2.8 Institutional Framework of Forestry Sector in DRC

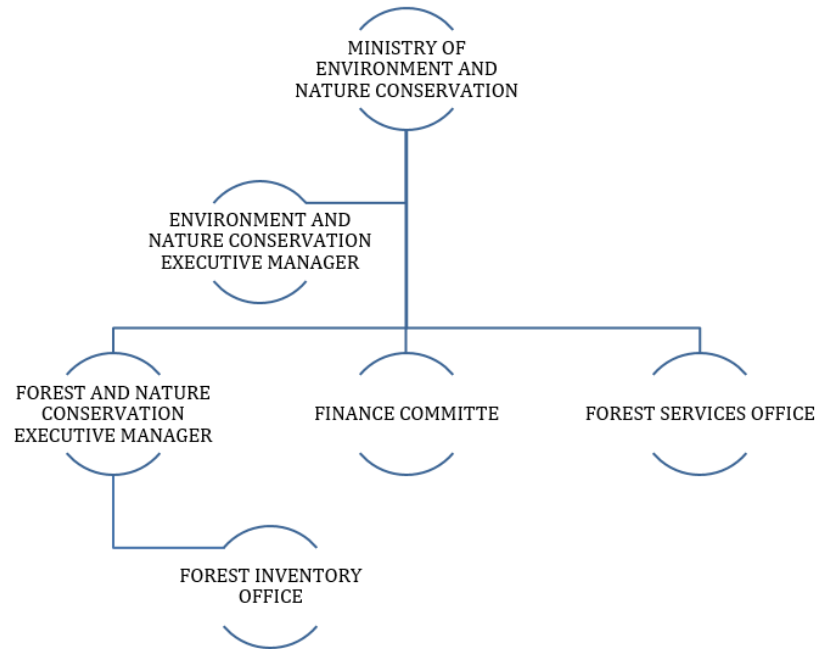


Figure 3 *Hierarchy of Forest Management in the DRC*

Source: Ministry of Environment (2013)

The above figure shows the current hierarchy of forest management in the DRC on National level. The Ministry of Environment, Nature Conservation and Sustainable Development operates in direct order from the Prime Minister of the country. The same structure applies for the Ministry of Environment on provincial level, with the other offices operating as subsidiaries.

2.9 Research Gap

White and Martin (2005) focused a lot on the causes of high rate of global loss. Their analysis falls short on looking into how the forest policy implementation was done. Whether it was effective or not, it is unknown, hence this study will strive to reveal through appropriate data gathering the feasibility of forest policies in DRC.

While, Ribot (2005) supports only the revenue generated by coming up with foreign policies, but however did not reveal if the policies were in actual fact been implemented.

Kiyulu (2012) revealed studies around the government and policy in DRC showed that there was lack of proper governance of policies. Whilst this study was after analysing the implementation, Kiyulu comes close to answer some of the research questions of the current study. Instead of analysing how the government is doing, he focused more on the knowledge of the community to understand how properly forest policies have been designed. It became clear that community lack forest policy knowledge, and is a close indication that these policies are not being implemented properly. These afore stated research gaps between the current study and Kiyulu's and other scholars, has been another factor motivating this study.

2.10 Summary

This chapter presented the relevant theoretical framework, existing literature on forest assessment and management. The research adopted the policy analysis and evaluation approach. The forest cover and institutional framework of the management of the forest are also presented. The next chapter will focus on the methods that were used to collect data.

CHAPTER 3 METHODOLOGY

3.1 Introduction

The fieldwork of this research was conducted in the Miombo forest area of Lubumbashi city in DRC from June up to August 2019. In July, data and other official information relating to forest policy in DRC was collected. However, finding such information was really difficult due to the fragile current political situation and unavailability of information in DR- Congo. The political condition of the DRC has caused the access to forests being extremely restricted and dangerous. This research was conducted in order to assess the implementation of the existing forest policy. During research fieldwork, participatory action research (PAR) methods were used to find out how the local community participates in the implementation of the forest policy. PAR approach is an important method that involves local people to participate in research activities (Chambers, 1990). Despite late approval from the Ministry of Environment and difficulties to meet the officials of the government, the field's work was successfully done with the help of villagers.

3.2 The Research Design

In this research, the researcher opted to use the case study research method that with a mixed research method. This method designs to present a detailed picture of the ongoing forest situation in Lubumbashi, regarding the forestry plan established by the local governors. This study strives to observe and describe the involvement of the population regarding the Forest Code. A case study is one of the methods among several others of researching social sciences, but fitting for natural resource research as they are rarely uniformly distributed. It is a method that narrows down very broad research into one topic by focusing on a particular situation in great depth thus giving space for elaboration (Labaree, 2018). In this research, Lubumbashi constituted a

unique situation in the DRC since it is both a populous city, which brings several challenges in terms of forest management, and it is located in the middle of one the protected forests of the country that is Miombo forest. The researcher was able to interact with participants through the use of interviews and a focus group discussion. The researcher used such interactions to bring out participants' lived experiences and understanding of the local forest management practices. This method suited this study because it helped to have a close view on the participants' way of living in their respective villages, and set aside any biases on their responses, point of view and perception on the forest policy in the community.

3.3 Population and Sampling

3.3.1 Target Population

The target population for this study comprised the participation of 100 mature representatives. That mature representation was chosen by the researcher because of the kinds of activities performed in the Miombo forest that involved mostly adults, but also following the requirements of the Congolese government. The population sample were chosen in three villages: Kawama, Kashamata, and Lumata. The local Ministry of Environment estimated the total populations living in these areas between 8000 and 9000 inhabitants, in reference to the number of households in the villages given by head of villages (816) with an average number of eight to 10 people per household. Participants were questioned and observed, and the survey was performed directly on their place of living. They were individuals who conversed either in Swahili or French because these are the languages the researcher used to carry out the data collection process.

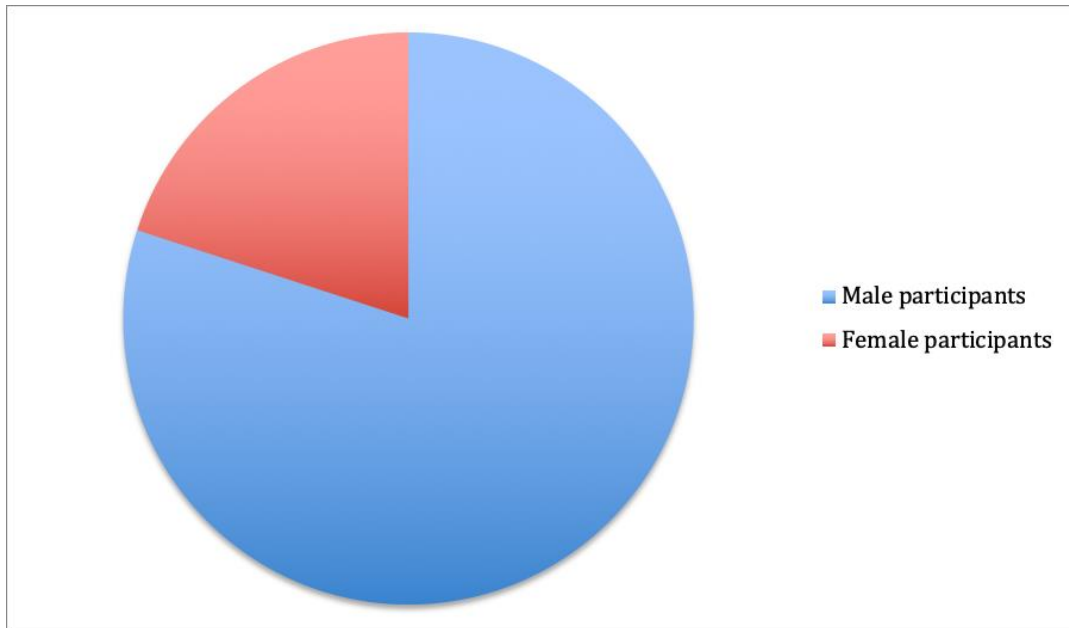


Figure 4 *Sex of Participants*

The above figure presents the gender repartition of participants of this research. The participation of male was more important (60 people) than for female (40 people), because males are more involved in activities in the forest that the researcher was focused on.

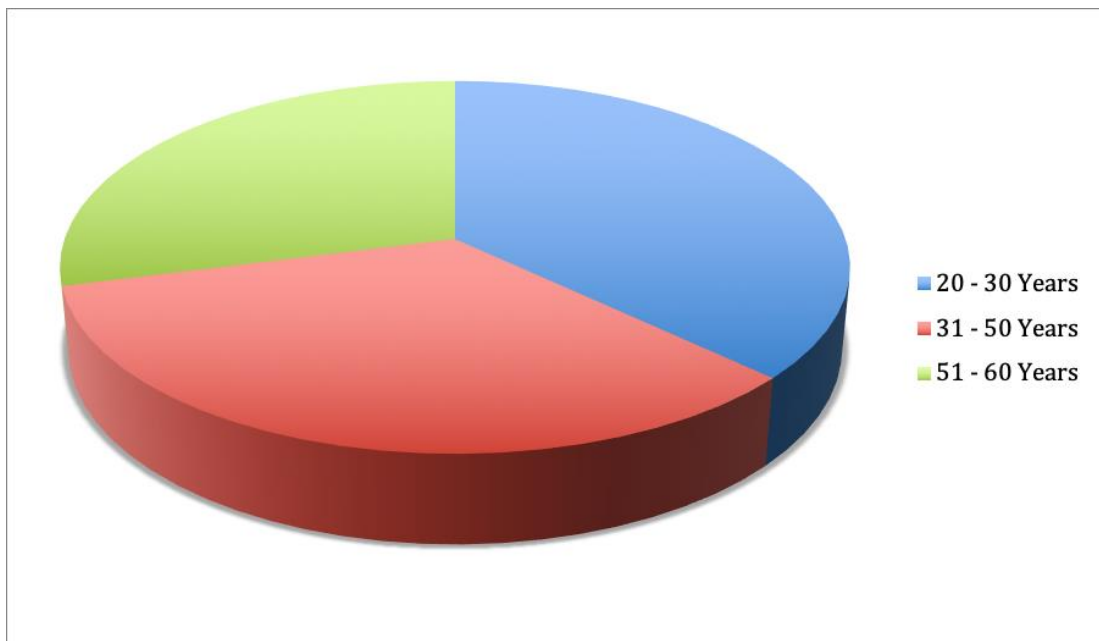


Figure 5 *Age of Participants*

This study comprised 37 participants between the age of 20-30 years; 34 participants between 31-50 years; and 29 participants between the age of 51-60 years as shown on the above figure.

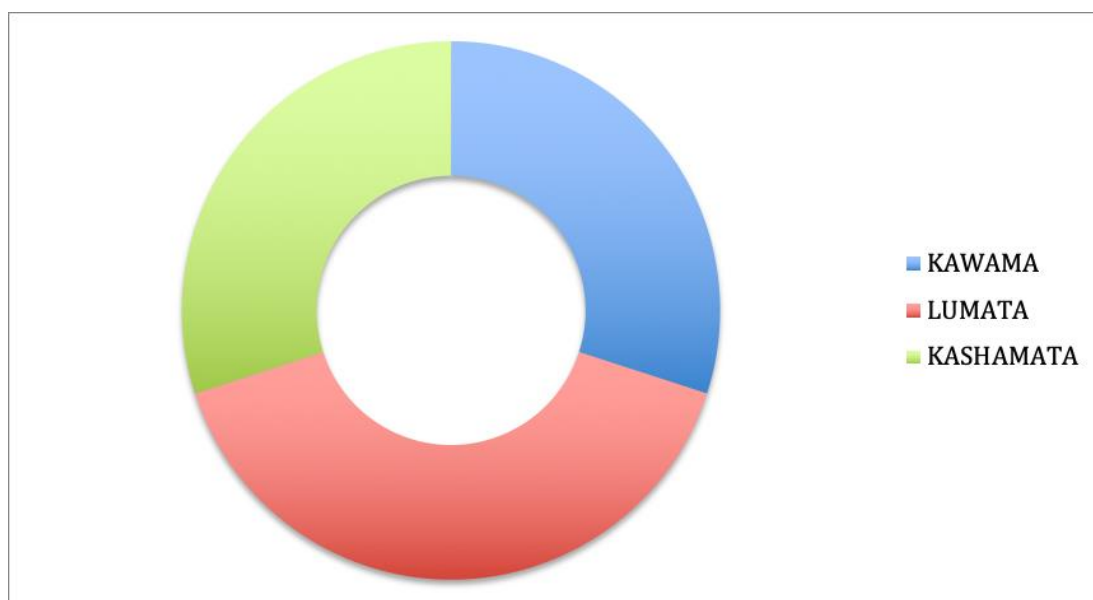


Figure 6 *Participants Per Villages*

As afore mentioned in the population sample, this research was carried out in three villages. The repartition of participants, as shown on the above figure, was as follow: 30 participants in Kawama, 30 participants in Kashamata, and 40 participants in Lumata.

Table 1 **Participant's Duration of Stay in the Villages**

Participants Duration of Stay in the Villages	
0 – 17 Years	31
17 Years >	69

The majority of participants (52%) were born in the villages (all three villages) in which they were living, compared to 48% who were not born in the sampled villages.

This suggests that the communities of villages in Lubumbashi constitute a gross sample and effective to critically analyze the implementation of the forest code, which was adopted 17 years ago.

3.3.2 Sampling

The research used convenience sampling, which is a type of non-probability sampling to select the respondents to the research study the researcher relies on data collection from population members who are conveniently available to participate in study. This was suited for the researcher because participants were easily accessible, since the researcher cooperated properly with the head of villages. Participants were also geographically reachable especially for Lumata village which was located near to the Mobutu national road. Furthermore, participants were available at a given time, and also willing to provide information especially women found at their place of living when the researcher was conducting the focus group discussion. The researcher relied on the availability of the head of villages, and most male participants selected were those easily available the days the head of villages agreed to assist the researcher. The researcher adopted this sampling method because it allows an easy access to respondents without an elaboration of any sampling frame as probability sampling techniques. Participants were recruited from the Lubumbashi villages located in the Miombo forest (Kawama, Kashamata, and Lumata) as mentioned above; and questionnaires were given to those who expressed their willingness to take time to respond, as well as for group discussion.

3.3.3 Key Informants Interviews

Despite villagers in the Miombo forest, the officials of the government that have link to the management of the forest in the province of Haut-Katanga constituted key

informants. The Ministry of Environment and Nature Conservation through the provincial coordinator constituted the main key informants, and from there the researcher was directed to other forest management offices as shown in Table 2 below.

Table 2 Key Informants

Name of Organization/ Government Department	Position in the Organization	Number of Participants
Ministry of environment and Nature Conservation	Haut-Katanga Provincial General Secretary	1
National Nature Conservation Institution	Haut-Katanga Provincial General Secretary	1
National Forestry Fund	Haut-Katanga provincial representative	1
FAO	Haut-Katanga provincial representative/ Miombo forest management branch	1
Total of key informants		4

All the four key informants were reached by the researcher directly in Lubumbashi, but all the government institutions enumerated in the above table are representation of the National Institutions on the local level.

3.4 Data Collection Procedure

3.4.1 Data Requirements

The study was carried out both primary and secondary data collection methods, these are two methods of data collection that may be considered when collecting data for research purposes.

3.4.2 Primary Data

To achieve the objectives of the research, primary data was collected through qualitative research. Hence, for the research, primary data was collected by via questionnaires that the researcher administered. The researcher intended rely more on primary data since the research is about people's attitude toward the forest, as it helps the researcher to know more about the reason behind stakeholders' behavior and forest management decisions. Moreover, most of primary data for this research were collected afresh and for the first time, and thus happen to be original. For this study, focus group discussions, questionnaires and observations were used as sources of primary data.

3.4.2.1 Questionnaire Method

Questionnaires are sometimes referred to as written interviews and defined as data generation statistical tools through the use of both open and closed ended questions which will be pre written down (Rankin, 2013). These questions may be written down on paper or electronic using pre designed software.

The researcher used questionnaires, which comprised of both close-ended and open-ended questions. The close-ended questions had options to select a suitable answer for the respondent, which enabled the researcher to quantify the responses when analyzing the data later. On the other hand, open-ended questions were used to supplement the responses on some of the close-ended questions by allowing the respondent to use their own words and explain in detail; for instance, when the participants were asked on the reasons that pushed them to migrate into Miombo forest. The method, which was used to administer the questionnaire, was the face-to-face method, which ensured the maximum rate of response possible on the reliance of the population to the forest, their implication in the implementation of the forest policy

in charge as well as how it affects their daily lives. Due to the illiteracy of many participants, the researcher administered the questionnaire and filled in the responses from the participants. The researcher used the face-to-face method that allowed clarifying all ambiguous and incomprehensible questions to the participants, especially when explaining their rights and obligations toward the forest. The questionnaires were distributed according to convenience in households (19%), public places such as charcoal markets (43%) and streets in the villages (23%) depending on the willingness of the participant to respond, following cluster sampling method under probability sampling method, which consists in dividing participants in clusters that represent the population. The other 15 % of questionnaires were carried out straight in the logging area and charcoal production.

3.4.2.2 Focus Group Discussion

These are small number group with a diverse people of different demography whose behaviors, reactions and opinions are studied in any area of research (Rankin, 2013). Focus groups was used to answer questions on how people consider the current forest policy and its impact on their daily life, and their own experience by creating conditions that enabled the participants to freely express themselves and their opinions on the subject at hand. Focus groups gave the researcher room to capture the reactions of participants to the comments and perspectives shared by other participants on sensitive questions; hence, they allowed the researcher to capture similarities and differences in viewpoints which were very interesting on the relationship between the government and the local community, the understanding of regulations on logging activities, and, community participation in decision making. Focus group discussions included all participants of this research, but more deeply women found on their place of living as they could give more time to the researcher to interact with them. Even

when some participants were given questionnaire, the researcher used that opportunity to have a gathering with them since they seemed to be more opened when asked to express themselves. The researcher also used the villages meeting as an occasion to interact with villages using the head of villages influence. The researcher chose the focus group method in order to be able to gather detailed information that the questionnaire method was not able to collect since some of the villagers were illiterate. The focus group discussion guide comprised of a set of questions, which were open-ended. These questions enabled the participants to respond spontaneously and get into detail without restrictions. The close-ended nature of the questions allowed the researcher to come up with even new issues that had not been foreseen to be in the scope of the study and new perspectives built through this in-depth conversation. Focus groups were assembled with all males in one group and all females in the other, for the simple reasons of availability of female participants who were mostly found on their place of living and male participants on the logging and farming sites.

3.4.2.3 Observation Method

The researcher used a structured non-participant observation method whereby the researcher just observed the activities that were going on in the area without being involved in the activities, uniquely on the logging areas and charcoal production. The researcher used an observation checklist to observe the conditions of the environment in the area and to verify the parameters that the researcher was investigating in line with the research objectives such as the forest cover, the farming areas, participants' daily routines. Observation was also done in terms of monitoring how the government is accomplishing different duties that involve the researcher. Besides, as mentioned on the checklist, the researcher also took pictures, recorded videos and audios without the inclusion of human faces as proof of the observations made.

3.4.3 Secondary Data

These were obtained through consulting of relevant literature that included articles, journals, books, dissertations, thesis, and official documents; and Internet sources on forest management, policy implementation assessment, policy analysis, and DRC forest. This provided a targeted perspective on policy implementation assessment concerning people's way of living and the broad perspective on forest management. These sources provided a comprehensive framework on forest management, as a result of good forest policy adopted, as for some countries like China or Kenya.

3.5 Data Analysis Tools And Procedure

As indicated above, qualitative data were collected. The qualitative data that was collected were coded, sorted, collated and grouped into similar themes. It was used in such a way to answer the study's objectives. Some items in the questionnaire that the participants and key informants filled generated quantitative data, and they were analyzed statistically. The data that ensued from the observation method was followed by the interpretational method, which was a means to clarify the entire shadow zones that the other data collection methods could not clearly explain. Triangulation was also used to gather and analyze data from different sources, as three villages have been involved in the research. For instance, after interviewing the 100 participants by respecting the repartition of 60 males and 40 females for reasons given above (population sampling), the information was used to do Statistics with the Microsoft Excel software to generate tables and % ages by coding the data using the variable and data views.

3.6 Ethical Considerations

The research was carried out legally and all participants' rights were made known to them. The participants were neither coerced nor exploited during the study and all potential risks were eliminated or minimized to ensure the safety of the participants. The researcher got consent from Lubumbashi's City Hall (Mayor of Lubumbashi), the Ministry of Environment and the FAO branch in charge of the Miombo forest. The data collection was done in both Swahili and French, languages which are spoken in Lubumbashi and there were all available and translated to these various languages.

3.6.1 Confidentiality and Anonymity

To uphold the codes of confidentiality and privacy that were required in research ethics, the researcher made sure that to eliminate the identification of the participants. No names were required for each questionnaire respondent hence that ensured that the identity of the participant is safe and would not be linked to the data collected at any given point, and all recording has been done in such a way that the face of participants was hidden.

3.6.2 Informed Consent

The process involved giving the research participants a detailed explanation of what the research entailed, what was expected of them, in terms of potential risks as well as the potential gains. In this research, the participants were informed about the study through translated consent letters from the researcher to the appropriate languages used in DRC and were told to be free to deny or accept without any form of penalty given. The informed consent form clearly explained that the participants could withdraw from the study at any point if they deemed it necessary. It also clearly be explained that no form of compensation would be given for their participation. All these activities were

done legally and ethically with permission granted by the town hall of Lubumbashi city, the Ministry of Urbanization, and the Ministry of Environment. All the permissions were verbal, and the researcher noticed that the officials did not want to be involved in case of negative outcomes.

3.7 Summary

The questionnaire method was useful in collecting demographic data which cannot be observed without a direct involvement with the research participants, while the focus group discussion method was convenient for getting more information that would give the whole research the weight and depth that it needed. The observation method helped in supporting and supplementing the data collected through the questionnaires and focus groups and helped to present data in graphs form to give the readers a better understanding of the set-up of the study area. Finally, the secondary data came to make a balance between the findings and the collected data, as well as giving a framework of the existing literature on the subject to give as a good direction in the data collection of the present research.

CHAPTER 4 DATA PRESENTATION, ANALYSIS & INTERPRETATION

4.1 Introduction

The previous chapter discussed the methodology used in this study by the researcher. It also describes the use of self-administered closed- ended questionnaire, face to face interviews in the collation of data and discussed how the data was gathered and transcribed into written text. In fact, this chapter presents the discourses that were dominant in the interviews and questionnaires and focuses on discussion on the implementation of the forest policy in Lubumbashi. Data is presented in relation to literature review and compared to the data collected from the field. The discourses discussed includes to evaluate the impacts of the forest policy on the local community in Lubumbashi, to identify the role of the state and other stakeholders in the implementation of the forest policy, to analyse transformation of the Miombo forest and its impact on the local ecosystem. The presentation of the findings are preceded by a description of study participants.

4.2 Data Presentation and Analysis

4.2.1 Questionnaire Responses

To start with, participants were asked on their understanding of the forest policy.

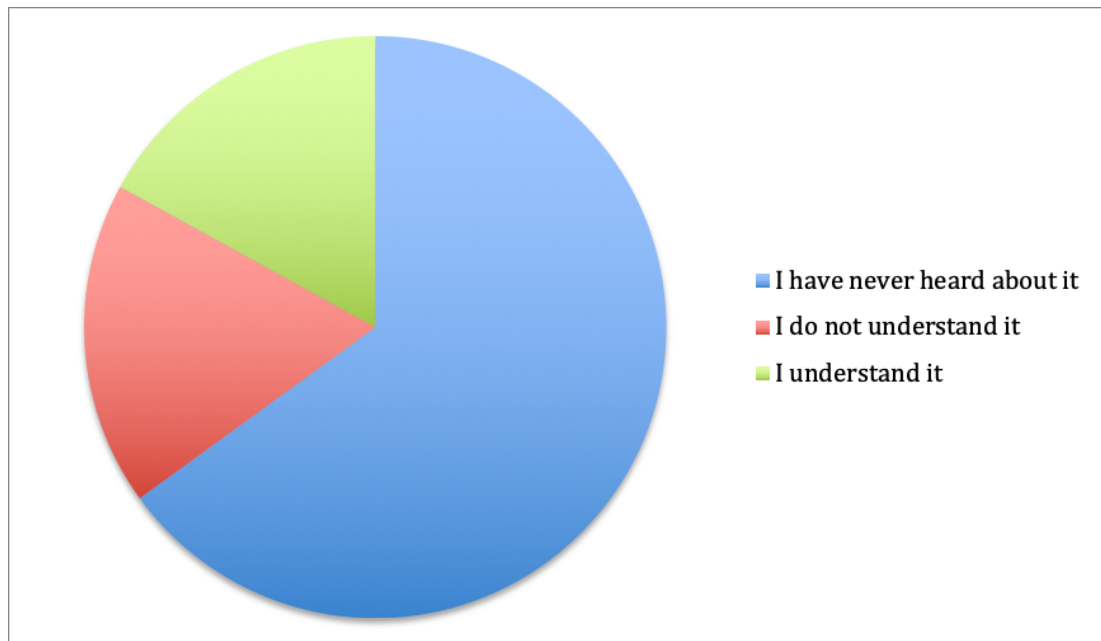


Figure 7 *Understanding of the Forest Policy by Respondents*

According to Figure 7, of the hundred participants, the majority (65) claimed that they never heard about it. The second group among respondents was constituted with participants who have heard about the forest policy but do not understand it (18%). In addition, the third group of respondents was villagers who know the forest policy and understand it properly (17%).

The figure 8 below summarizes the participants' un-interrupted stay in the three villages; Lumata; Kawama and Kashamata. It was observed by the researcher that the majority of respondents were born there with 49 from Lumata; 55 from Kashamata and 51 from Kawama. Less than 10 respondents have had stayed in the village for the past 20 years. 20 participants from Lumata had been there for the past 10 years and 20 had stayed for the past 10 years in their villages. Total number of respondents who had been in their villages for the last 5 years were: 21 in Lumatas; 21 in Kashamata and 38 in Kawama.

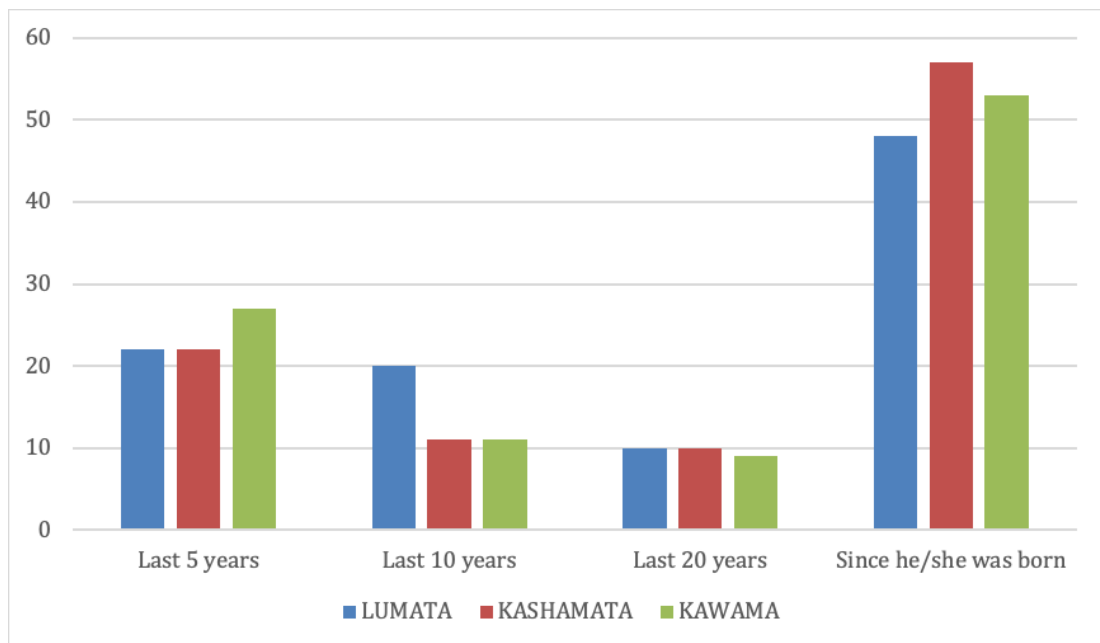


Figure 8 *Participants Un-Interrupted Stay in the Villages*

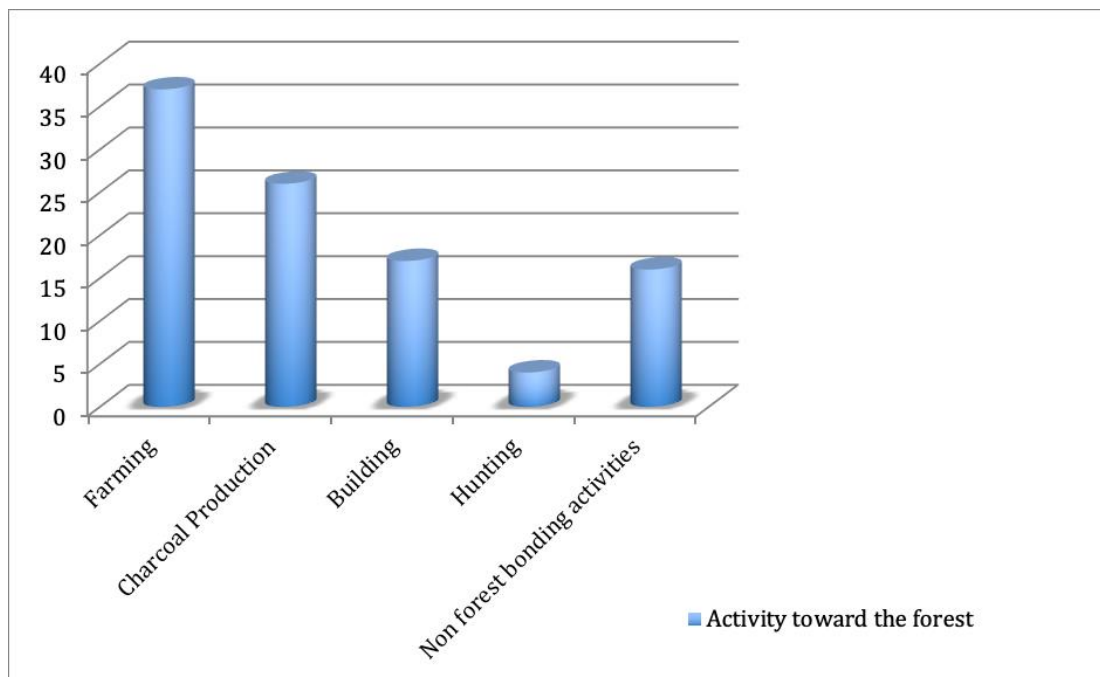


Figure 9 *Participants Main Daily Activities*

According to Figure 9 above, 37 participants were farmers (37%) practicing crop production and livestock; 26 respondents were producer of charcoal (26 %); 17 respondents were builders (17 %) practicing traditional building method with timbers; 4 respondents were hunters (4%) hunting principally birds and small mammals (mice);

and the remaining 16% who were mostly women did not have activities that have a direct relationship with the forest, like being homemade or sellers.

In addition to the above, to know the level of knowledge on the forest management, the researcher administered questionnaire to villagers with the purpose to see how many could answer at least 50 % correctly. The below Figure 10 Illustrates results in %age local community answers on the knowledge on forest management that exist in the Miombo forest (cultural as well as state and international regulations).

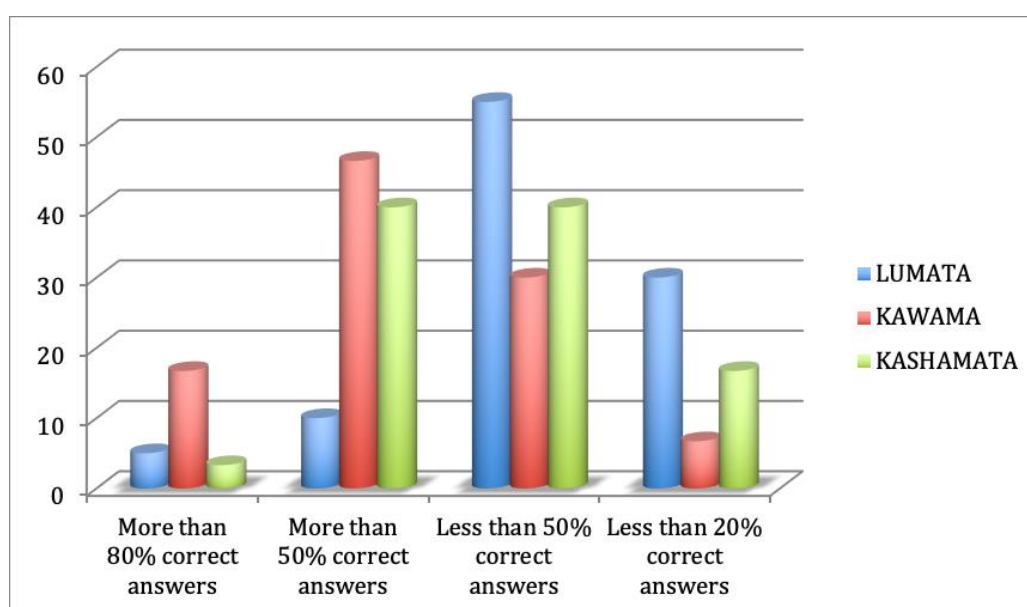


Figure 10 Forest Policy Questions % Ages Per Village

Participants in Kawama and Kashamata (Kaponda chiefdom) have more knowledge on the forest management than participants in Lumata village (Kalengwe chiefdom) according to Figure 10. That is the consequence of the cultural influence on participants in Kashamata and Kawama who still stick to their cultural values, which involves following and respecting what the head of village says.

The following Figure 11 will show the same results as Table 4, but all participants' answers compiled together.

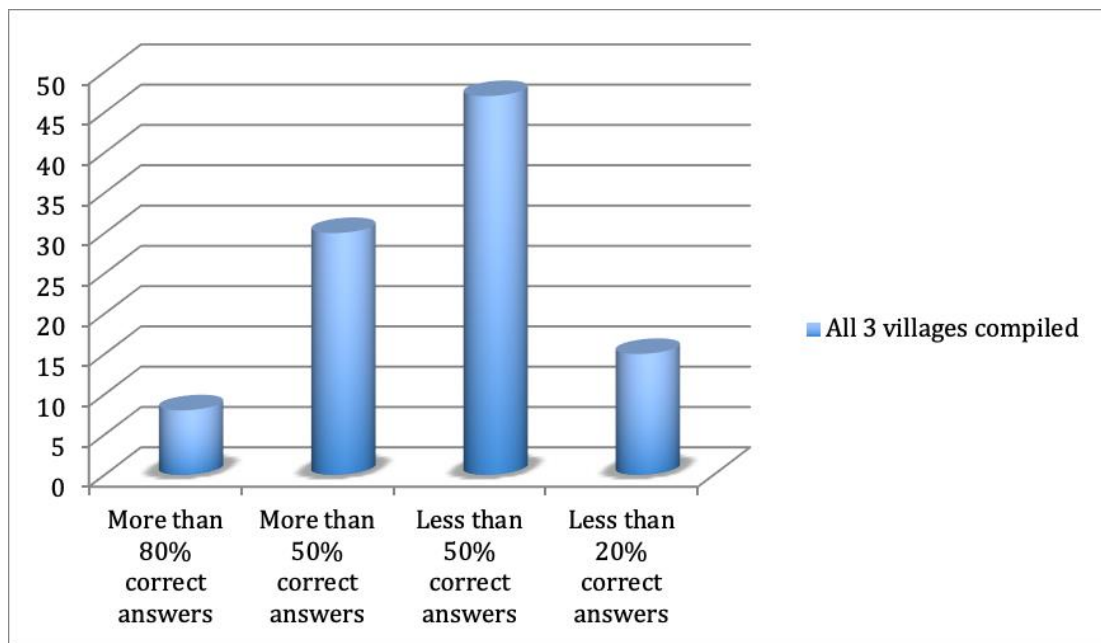


Figure 11 *Participants Correct Answers %Ages All Villages Compiled*

With reference to Figure 11 above, 6 villagers altogether gave more than 80% correct answers; 27 gave more than 50% correct answers; 45 gave less than 50% correct answers and 12 villagers from the 3 villages compiled gave less than 20% correct answers.

The Figure 12 presents results that shown in % age to the question land that local people have used in the Miombo forest.

The results presented in % age to the question related to size of land used for agriculture by participants. Despite farming, the non – timber forest product (NTFP) such as animals, fur-bearers, nuts, seeds, berries, mushrooms, etc. seems to be the most important sources of forest products used by communities inside and outside the Miombo forest. Therefore, local people plant trees that may be used as a fruit trees only.

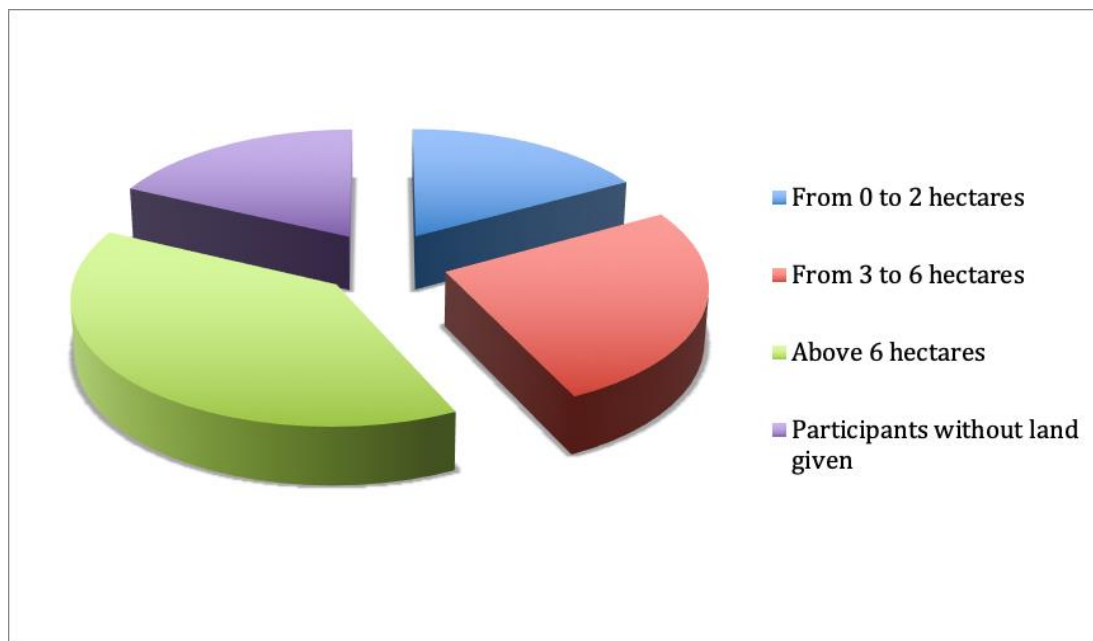


Figure 12 *Participants Land Occupied For Daily Activities*

The results in the above table show that, 39% of participants have more than 6 hectares of land to practice different kind of activities. According to the head of villages, land is given to villagers following some criteria such as longevity in the village, resources owned, function in the village. The head of villages could not precisely decide the criteria for land allocation, and some participants claimed to be disadvantaged, as they have never been granted any land.

4.2.2 Interview Responses

4.2.2.1 Interview On Urban Expansion And Local Community Growth

According to the Forest Division in Lubumbashi, the growing population in Lubumbashi has caused a massive movement of people in the Miombo forest. One of the Provincial Coordinator affirmed that by saying:

Mining activities in Lubumbashi attracted people from all over the country for employment. That caused a kind of exodus of people to the villages, especially those without any degree. That was very critical because it increased the threats toward the forest, and it was then difficult for the government to clearly identify the belonging of people

in villages, all of them being mixed now (Coordinator Interview, Friday 16 July 2019).

4.2.2.2 Interview Findings from the Ministry of Environment Level

During the interview with one of the Assistant of the Provincial Coordinator of the Ministry of Environment and Development of Haut-Katanga, explained that the Coordinator delegates for each refereed forest in the Province inspectors to go and meet with the head of villages:

On local level, which means in provinces, inspectors play the role of bridge between local communities and the Ministry of Environment. On the frequency of twice a month, they have to go and talk with villages' leaders who are local leaders and are easily understood by the villagers. The inspector submits to the hierarchy a report of the meeting, and measures may be taken. In the same way, if there is any communication to the villagers, we give them to the inspector in form of an official and signed document. The inspector will communicate to the head of villages (Coordinator Interview, Friday 16 July 2019).

In addition, while discussing with the Assistant of the Provincial Coordinator of the Ministry of Environment and Development of Haut-Katanga, he confirmed the statement whereby the Miombo forest is a protected forest. Regarding the measures put in place by the government to protect the Miombo forest, the assistant answered as follow:

Having regard to the relevant resolutions and declarations of the Stockholm and Rio de Janeiro conferences as well as those of the Johannesburg Summit relating to the universal concept of sustainable development on the rational use of natural resources for the benefit of present and future generations; the Miombo forest is regulated by the Ministerial Order N° 43, despite the forest code (Coordinator Interview, Friday 16 July 2019).

More so, the researcher could not find any other measure put in place by the government to protect the Miombo forest, despite the FAO project and the regulations

dictated by the forest code. The Assistant of the Provincial Coordinator of the Ministry of Environment and Development of Haut-Katanga added:

The local government is working hard to protect the Miombo forest as the degradation is becoming more and more alarming. We are facing challenges whereby all allocated funds from International Institutions are only allocated to the Equatorial forest, which is the most important forest of the country. The local government fights to create fund in this order by itself, to protect the Miombo forest from rapid degradation. The province is facing several other problems that require funds as well, reason why the overall budget of the province does not give to the Ministry of Environment sufficient fund to function properly. Actually, we rely on the FAO project as the only way of helping local community to develop other activities other than those having a strong reliance on the forest; and that will sharply reduce the current threats that the Miombo forest is undergoing through (Coordinator Interview, Friday 16 July 2019).

In order to have an understanding of the change in livelihood from the adoption of the forest code in 2002 up to now, the researcher decided then to rely on one of the chief experiences and knowledge of the Miombo forest, since he has been in power for more than thirty years. From the in-depth interview, the chief started by mentioning the mining activities in Lubumbashi city that had a serious impact on villagers' livelihood.

If we go back in 1990s, our villages were self-dependent in terms of all needs. Villagers were living with what they could produce from the land, or what they could catch from hunting or fishing if we consider villages outside the Miombo forest. But the situation has started changing at the beginning of the 21st century with the increasing number of populations in Lubumbashi due to mining activities. Our villagers were the first one to suffer from that situation, and that created lot of informal activities in our area from people who were coming from the city. Villagers habits started changing, because the increasing number of informal activities in the forest had harming effects on forest resources on which villagers rely on (Chief interview, 23 July 2019).

4.2.2.3 Transformation of Livelihood of People in Miombo Forest 2002

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4.2.2.4 Evaluation of Local Community Livelihood

Local communities in the Miombo are not well identified, and that has worsened the livelihood of native villagers in the forest. The head of the villagers mentioned several times that the situation is becoming more and more uncontrollable:

People coming from Lubumbashi do not care about any value shared in this community. Their only objective is to exploit forest resources, to use the land in a non-proper manner. They produce charcoal in abundance, they do not follow the norms that we use here as villagers, they go and sell the products in Lubumbashi that was supposed to be villagers' market. Our charcoal producer now struggles to sell their product because the market is too challenging and too competitive for them (Chief Kaponda interview, 17th July 2019).

4.2.2.5 Evaluating the Management of the Forest Resources

When we questioned the head of the village, who is the oldest and the one who has lasted long among the three chiefs questioned (more than thirty years in charge), he

clearly expressed his disappointment about the lack of involvement of the government in the protection of the forest.

All the complains that we have addressed to the government, i.e. to raise the control and security in the areas far from the households to fight illegal logging practiced by people who use logs for a diverse reason; to fight illegal fire operated by people who practiced illegal hunting and so on. None of these complaints have been answered and no actions have been undertaken by the government (Chief Kaponda interview, 17th July 2019).

4.2.2.6 Local Communities' Management

During the in-depth interview, the chief clearly expressed his opinion on the owning of the forest:

Our forefather fought to gain this land for us. The Balamba tribe deserves to total control of this land and all resources found in our boundaries, but the government seems not to understand many aspects of this culture's background (Chief interview, 23 July 2019).

Table 3 **Miombo Forest Cover Loss**

YEAR	STUDY METHOD	DISTANCE FROM DEFORESTATION TO THE CITY	ESTIMATE OF THE YEAR OF COMPLETE REMOVAL OF FOREST COVER AROUND THE CITY
1978	Observations	35	
1983	Investigation	25-50	
1985	Investigation	50	2030
1994	Observations	60	
1997	Observations	75	2010
2010	Investigation	77	
2015	Observation	98	2050

4.3 Discussion and Interpretations

4.3.1 Discussion on Questionnaire Findings

4.3.1.1 Local Community's Understanding of the Forest Policy

To begin with the study enquired about the understanding of the forest policy, on matters of applicability as far as implementation of the forest policy on local community was concerned. The researcher assumed that to understand exactly how local community interact with the forest, and to have a common language with local communities; she has to first know if the participants had an understanding of the forest policy.

It is important to note that the majority of villagers are illiterate and understanding only their native languages, and the forest code and other documents regarding the forest policy are written exclusively in French. Due to that, the participants who responded to have never heard about the forest policy (65%) actually do not understand the forest policy in place in the Miombo forest for reasons that will be given in the following lines. This is also in accordance with what the findings of the FAO in 2008.

4.3.1.2 Local Community's Activities and Practices Toward The Forest

The understanding of local community practices could not be properly understood without a clear identification of the belonging of people in the area. According to findings, an individual belongs to a village if he/she was born in the village, and has one parent who belongs to the local tribe of the chiefdom. An individual may also belong to the village if he has parent who possess the chiefdom tribe, regardless of where she/he was born. For the sake of this research, the local community in the Miombo forest was everyone living in the villages and had a direct relationship with the forest, because of the propensity of participants to lie on their tribe fearing rejection

of the community in the chiefdom. Therefore, participants were questioned on their duration of stay in the Miombo forest (see Fig 9).

4.3.1.3 Local Community Land Use

As mentioned, farming and charcoal production are the main activities practiced in the Miombo forest (Figure 9). The increasing number of people in Lubumbashi suggest more resources from the forest due the reliance of people on the forest (background), the researcher proceeded to an investigation with the head of villagers to confirm if the land given to villagers (participants) for farming and charcoal production are respected.

The research was carried out in three villages in the Miombo forest as mentioned in the study area, which have different realities and tribes. The village of Kashamata and Kawama villages constitute the Kaponda chiefdom with 514 households in total (Chief of the Village). Villagers in these two villages belong to Balamba tribe. The third village, Lumata, headed by chief Kalegwe bears the Baemba tribe. In these villages, which have the same climate and are geographically the same, the hundred respondents were questioned on their daily activities that have a direct relationship with the forest. According to data presented in figure9 It is important to note that despite the above activities, the local community has some traditional practices that have negative effect on the forest. In-depth interviews with one of the Chief in the village indicated that the Balamba tribe people refuse to modernize their way of living. They still rely on traditional health care using plants roots and bark, and that is a critical aspect in the local management of the forest. Furthermore, they sometimes willingly burn the forest as a practice of chasing away witchcraft according to their cultural beliefs, but the frequency and the damage could not be clearly said neither observed by the researcher, as those activities are extremely confidential to the public.

According to Figure 11, the results show that, the local community in the Miombo forest lack significant knowledge with regards to forest management. The majority of participants (59%) did not answer properly half of questions, and that is an alarming number regarding the success of management of forest resources at the local community level.

4.3.2 Discussion on Interview Findings

4.3.2.1 Interview on Urban Expansion And Local Community Growth

The Baemba tribe on their side is more modernized than the Balamba. During the time that the researcher visited the Lumata village, she observed that the forest cover in this village was less significant than in the Balamba areas. The researcher observed wide areas without adult trees, but only young and very small trees. That was the result of intense forest activities in this village as people are more advanced, and they do not give great importance to the forest like other tribes.

Moreover, the interview that the researcher had with among the chief clearly brought up the fact that he really lacked cultural knowledge and background on the village, and some villagers also mentioned that during the group discussion.

The Miombo forest is located in Lubumbashi's jurisdiction. With an urbanization rate of 4.1% (World Bank, 2018), Lubumbashi, is the second largest city in the DRC and has experienced a very fast population growth the past years.

During the in-depth interview with one of the chiefs, who has been in charge for more than 30 years, he expressed his worry about the increasing populations in the villages. The community in the Miombo forest increased dramatically in the past two decades because. That mixture between the native and non-native people has deteriorated the cohesion between villagers and therefore has weakened the power of the head of the

villagers on the population. The Ministry of Interior Affairs lacks data on the population in the Miombo forest, so the researcher relied on the head of villages' data. In the Kaponda chiefdom, the current number of 514 households constitutes five times the number of households at the beginning of the 21st century. One of the chief could not give any data since he has been in charge for the less than three years, but nonetheless some participants during our group discussion in Lumata village mentioned the dramatic increase of people in the village.

4.3.2.2 Discussion of Interview with the Ministry of Environment Level

Researcher also observed during interviews with the ministry of environment that, in the Democratic Republic of Congo, responsibility for forest management, administration, conservation, and monitoring rests with the Forest Ministry and Sustainable Development. The ministry works constantly in collaboration and consultation with other departments (listed as key informants) whose responsibilities may have an impact on the forest sector. It also involves other actors, including the private sector and non-governmental organizations (Forest Policy: Art. 25). That means that the Ministry of Environment (both local and national level) is responsible for the management of the forest. The Provincial Minister may, by a direct order, delegate in whole or in part, the management of a classified or unclassified forest to legal persons under public law or associations recognized to be of public utility with the aim of protecting and developing them and conduct research or other public interest activities as the forest policy grants him the right (Art. 28). It is created at the national as well as the provincial level a forestry cadaster ensuring the conservation of forest concession contracts and forest allocation acts to local communities.

Forest inspectors, who act as first line managers, monitor the management of the Miombo forest, on the government's hand. They receive direct instructions from the

Coordinator of the Ministry of Environment of Haut-Katanga who receives his from the Minister of Environment. During the data collection period (8 weeks), the researcher never met any forest inspector in all the three villages. When questioned on the frequency that forest inspectors visit them, both chiefs indicated that less than five times in a year.

4.3.2.3 Measures Government Put in Place to Protect Miombo Forest

The Miombo forest in Lubumbashi has been given to local communities since 2006 when the city started to increase its size due to massive urbanization (Ministerial Order No. 043 / CAB / MIN / ECN-EF / 2006 of 08 December 2006 laying down provisions relating to the obligation of environmental and social assessment of projects in the DRC OJ. RDC n°22). That means that, in accordance with the forest code, the Miombo forest shifted from reserved forest to protected forest which simply mean that certain activities like grazing, hunting etc. will not be banned as they were under reserved forest. The grant aimed to allow people to have sufficient land for diverse activities such as agricultural, housing construction and charcoal production as the first source of the energy for households. The forest, thus, remains the property of the state that manages it on the local level through its provincial ministry of environment.

In brief, the decree (APPENDIX 11) stipulated that any development project, old or new, established in the Democratic Republic of Congo will now be subject to an assessment of its environmental and social impact; and financial assistance will not be granted to communities that will be found to have activities that are harmful toward the forest for them to sharply reduce them.

Following that decree, in April 2019, the United Nations decided to contribute to reducing the irrational exploitation of dry and clear forests in the Miombo forest to

protect and manage them in a sustainable way. A project entitled "Community Management of Miombo Forests in South-East Katanga" has been created. Funded by the Global Environment Fund (GEF) and implemented by FAO, this project aimed to reduce carbon dioxide emissions from deforestation and forest degradation in Miombo forest on the one hand, by promoting sustainable management and restoration of forest ecosystems. And, on the other hand, by improving the sustainability of the livelihoods of local communities through the commercialization of woodfuel and non-timber forest products (NTFPs). The implementation of the project started in July 2019, monitored by the FAO in collaboration with the Ministry of environment of Haut-Katanga, and different NGOs acting as the launcher of awareness for the Miombo forest.

After spending one month working with the FAO in the implementation of the above-mentioned project, the researcher found that the project is partially doomed to failure. According to one of the chiefs, although the management of the Miombo forest is weak and led to forest degradation; management is not the main aspect that has to be addressed in the Miombo forest. The local government and the FAO reserved the right to disclosure the budget of the project to the researcher. Nonetheless, according to the head of the village, the beneficiaries of the fund claimed the insufficiency of the money that will result in the inefficiency of the project.

Nonetheless, the researcher discovered that the General Secretary for the Environment, Conservation of Nature, Water and Forests has created its local representation in Lubumbashi City. Unfortunately, despite countless efforts of the researcher to have an appointment with the local representative, all attempts were unsuccessful.

4.3.2.4 Transformation in Terms of Livelihood

A livelihood 'comprises the capabilities, assets and activities required for a means of living; a livelihood is sustainable when it may cope with, and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihoods opportunities for the next generation (Chambers & Conway, 1992). Official figures on Miombo forest local community livelihood during the past years were very hard to come by, since they do not exist.

Poverty was both the reason and consequence of people engaging in informal activities: they were driven to these activities because they were in need of resources, and yet many informal activities served for subsistence only. The vast majority of the villagers in Miombo forest are poor (Researcher's observation). Their condition of living, comparing from people in the center of Lubumbashi is still backward. The researcher observed that the poverty in the Miombo forest has many facets: low income, non-food needs, lack of access to health care, schooling and decent housing, etc. In accordance with the research participants' interviews, 43% of participants live with less than 1 USD per day, and rely principally on forest resources as their source of health care. Furthermore, 64% of participants never frequented school; 28% had basic education level (primary school level); and only 8% had a secondary level of education.

The Miombo forest did not benefit from the Mining activities "boom" in the Haut-Katanga province. According to one of the chiefs, the livelihood of people in the Miombo remained relatively the same during the past two decades. Nonetheless, in Lumata village, the researcher could observe a kind of urbanization with modern house construction, some shops with modern items, and even some medical health center with modern medicine practices. Unfortunately, many of those goods do not belong to

villagers, but to people coming from Lubumbashi. Many villagers cannot afford to buy the items sold in the shops neither to be treated in those medical centers.

4.3.2.5 Transformation in Density and Forest Activities in the Forest

The Ministry of Environment in Katanga did not have any quantitative data regarding the Miombo forest. The researcher turned to the United Nations through its branch, the FAO. During the interview with the local representative, she clearly mentioned that continuous deforestation and forest degradation in Miombo forest areas are leading to a decline in the provisioning of forest resources such as fruits and medicinal plants, with severe consequences for those communities most dependent on forest resources. Thousands of hectares have been lost since the beginning of the 21st century 1990 and 2015 in the Miombo woodlands (FAO, 2019). Although there is no concrete evidence or detailed data available on the deforestation rate and total area lost for Miombo forest alone, the researcher identified threats to Miombo forest through a screening of the annual reports of both the Government and the United Nations through its branch the FAO (2019) identified threats include:

- Collection of firewood and charcoal production;
- Agricultural activities;
- Fire—all resulting in the decline of the regenerative capacity of the woodlands.

This is not surprising, given the steep population growth experienced in the city, with populations having more than tripled within less than 20 years (background), as already mentioned. The researcher relied on the projections from the United Nations Population Division which estimated that population growth will continue to rise at an alarming rate. The question remains of how this population growth will influence the landscapes and the Miombo forest degradation in the future. Will the Miombo forest

still be sufficiently sustainable in the future years? The researcher could observe an existing link between population living standard and environmental degradation in the Miombo forest.

Drivers of global environmental change namely changes in land use, climate and biological diversity, including forests continue to impact negatively on local communities who depend on these resources, as emphasized by one of the chiefs. The forests act as a source of carbon dioxide through deforestation and degradation, as well as sinks through afforestation or avoided deforestation. With better management and growth, their role in the mitigation of greenhouse gas emissions may be enhanced (United Nations [UN], 2018). As mentioned above, there exists a wide variety of driving factors to the deforestation of the Miombo forest. These include agricultural expansion, timber and wood extraction, fire, and landscape fragmentation. The deforestation may have a severe negative impact on maintaining critical ecological connections. As a consequence, the researcher may observe that the Miombo forest is on a trajectory to becoming altered ecosystems following the United Nations criteria, with the degree of alteration dependent on the intensity and duration of the current human pressures coming from the center of Lubumbashi.

Following the FAO, the Miombo forest is critically changing in spatial extent as well as in the quality of their attributes. While the amounts of energy used vary across the season, certain tree species are used more frequently for their desired characteristics such as color or taste (villagers). This may lead to the depletion of such tree resources as well as the degradation of the forest. Table 1 shows the Miombo forest cover loss of the past forty years.

The transformation of the Miombo forest has been seriously negative, because, following the above table, in the 1970s the distance of deforestation from the city was around 35 kilometers while it was 98 kilometers in 2015. The past seventeen years, since the forest code has been changed, have seen the Miombo forest to critically degrade. The head of village told the researcher that he has been warned the government about the critical situation that the forest is undergoing since long ago (Near ten years). Unfortunately, none actions have been undertaken to end the rapid degradation that the Miombo forest is undergoing.

4.3.2.6 Evaluation of the Forest Policy in the Miombo Forest

Back to the background of the study, the forest policy in DRC aimed to produce and implement management plans ahead of any forest exploitation; promoting innovative management and finance models centered on payment for environmental services rendered the world community and serving local development needs; to protect the natural forests, support to the development of community forests to the benefit of local communities and indigenous people. The researcher based the evaluation on three major criteria which are: local community livelihood, protection of the ecosystem, and the management of the forest resources according to the forest accord which was the benchmark and the evaluation tool.

4.3.2.7 Evaluation in Terms of Local Community's Livelihood

The population size in the Miombo forest has nearly doubled as earlier mentioned. A crucial issue therefore arises from the increasing number of people in the villages, the identification of real “villagers”, according to the forest code, who are supposed to benefit from some advantages dictated by the forest code. When asked if the monitoring of forest policy implementation considers the fact that many people do not

respond to the forest policy criteria to be considered as villagers (Art. 38); the Assistant of the Minister of Urbanization/ Haut-Katanga responded that all people migrated to villages are considered to be villagers. Therefore, the forest policy grants them rights to exploit forest resources without any restrictions. Following local community's cultural values mentioned above as well as the general criteria of the Ministry of Urbanization in DRC (Ministère de l'urbanisation et habitat, 2018), people migrating from Lubumbashi to villages in the Miombo forest cannot be recognized as villagers. Therefore, the government has failed in the implementation of the policy; in failing to identify the membership of local people in the villages. Many people living in the villages do fit to the criteria dictated by the Ministry of Urbanization (Interaction between local communities and the forest). So, they do not have the right to exploiting the forest without restrictions as dictated by the forest policy. They should be taxed on their exploitation as planned by the forest code in its Article 102 which says: "Subject to the exercise of the forest rights granted to local populations, the exploitation of any forest product is subject to one of the authorizations prescribed by Article 98 of this Law and gives rise to the payment of tax whose base and the rate are fixed by joint decree of the Ministers having the forests and the finances in their attributions. Any logging outside a logging concession results in the payment of a slaughter tax." The current exploitation of the forest is a shortfall for the government, because the money that should have been collected from the current exploitation of the forest could have helped to empower and help local communities as dictated.

The researcher also observed a big concession used by non-villagers to produce crops destined to feed people in Lubumbashi. Those concessions, according to the head of the village, are given straight by the Central Cadaster Office in Lubumbashi, without even asking for the head of the village agreement. The Central Cadaster Office refused

to give to the researcher any appointment in order to have more clarifications on the concession distribution issue. The cultural background in the area has a great influence on their way of thinking. According to their beliefs, the forest is their property without what they cannot live. "Our forefathers fought to gain this land; the government never considers the interest of the poorest" are some of the answers that the researcher got from the villagers. That mixture between the native and non-native people has deteriorated the cohesion between villagers and therefore has weakened the power of the header of the villagers on the population.

Following the above statements, the forest policy in the Miombo forest did not have the wished effect on the local community. The adoption of the forest code, that happened at the beginning of the 21st century (2002), did not consider some of problems faced by villagers in the Miombo forest. People's livelihoods in the Miombo forest remain fragile, and the situation is not about to change unless strict measures are taken.

4.3.2.8 Evaluation in Terms of the Protection of the Ecosystem

Following Table 1. data (Miombo forest cover loss), the rhythm at which deforestation and forest degradation in Miombo forest are currently leading to a depletion of important forest resources, and other animal species with severe consequences for those communities most dependent on forest resources according to the head of villages. Some UN studies done in (2018) identified that the main driver of deforestation and degradation in the Miombo forest of Lubumbashi woodlands is conversion to agricultural land.

Continuous pressure on land for a fast-growing city like Lubumbashi is having a major impact on the ecosystem in Miombo forest, particularly in terms of increased charcoal production to meet the growing demand in the urban areas. Following the estimation made by the FAO, the land needed to meet charcoal production in 2015 was 1.6 million ha of forests per year; and by 2050 the area needed to meet the demand would be 4.4 million ha. These figures are alarming for the ecosystem in the Miombo forest, as deforestation may have a severe negative impact on maintaining critical ecological connections. As a consequence, the Miombo forest is on a trajectory to becoming altered ecosystems, with the degree of alteration dependent on the intensity and duration of the current human pressures.

The Miombo forest, as mentioned earlier, is critically changing in spatial extent as well as in the quality of their attributes. As with most forest systems, harvesting in the Miombo woodlands should be viewed as part of forest management, the impacts of which the system should be able to sustain. Studies have shown that harvesting intensity has a strong impact on the diversity of organisms. One of the many important traits found in the Miombo forest is their regenerative capacity, despite the general perception that charcoal production and agricultural activities have led to their loss in the few past years. Natural regeneration after cutting typically follows within relatively few years, according to the head of villages and the FAO investigation. It is estimated, by the FAO that the Miombo forest harvested for charcoal production may recover fully within 20 years. The problem is that the recovery period is often interrupted, leading to continuing degradation and, ultimately, the disappearance of the Miombo forest species having a destructive impact on the entire ecosystem in the area. While the amounts of energy used vary across the season, certain tree species are used more

frequently for their desired characteristics such as color or taste (villagers). This may lead to the depletion of such tree resources as well as the degradation of the forest.

The transformation of the Miombo forest is mostly in the negative way. According to the forest code, the forest estate is protected from any form of degradation or destruction, including illegal logging, over-exploitation, overgrazing, burning and burning, as well as clearing and over-harvesting. Are what is particularly prohibited, all acts of deforestation of the zones exposed to the risk of erosion and flooding (Art. 45/Forest Code).

The forest policy, which aimed to improve the sustainability of forest resources, has not been very helpful in the area. The forest code, in its Article 46, requires local leaders to take immediate actions when the sustainability of a forest is under serious threats. The head of villages has been warned the government about the critical situation that the forest is undergoing since long ago (Near ten years: Chief Kaponda). Unfortunately, no actions have been undertaken to end the rapid degradation that the Miombo forest is undergoing. Indeed, the ecosystem in the Miombo forest has experienced serious threats, but mostly negatively. The natural regeneration of the forest cannot completely cover the anthropogenic activities, and Lubumbashi city is becoming more and more crowded as time goes.

The Forest Code seems not to be adequately shaped to deal with this situation, and the United Nations and International Organizations are only focused on big forest in DRC. The researcher could not find documented list of endemic species of the Miombo forest. Nonetheless, group discussion with villagers rose up the fact that some species (especially trees: Kapeta Nsofu, Mabungo, Mishilu) may only be found in the Miombo forest, and most of them are used for medical purpose by villagers. The continuous

degradation of the Miombo may lead to the extinction of those species, and that may cause an imbalance of the entire ecosystem.

4.3.2.9 Evaluation in Terms of the Management of the Forest Resources

During the focus group discussion with the participants, we find out that even the basic regulations of the forest policy, which are critically important in the management of the forest, are not yet known and understood by the local population with the results shown by the Figure 7. The national forest plan sets the objectives to be achieved and defines the actions to be implemented. It includes the description of resources forestry; estimate of product needs foresters; the program of actions to ensure the conservation of forests and the development of the forest sector; forecasting the necessary investments; levels of intervention and the role of the different actors involved and all other indications useful for the execution of the national forest policy (Art. 4/Forest Policy). The researcher noticed a kind of mismanagement of forest resources in the Miombo forest, considering the regulations by the forest policy. That is principally due to the failure of the government in the fulfilment of its responsibilities dictated by the forest code, for this particular case the Article 4. No efforts have been made by the government to try to make understood the forest policy to the villagers by undertaking effective actions in that sense. No translation of the forest policy into indigenous languages has been done up to date. The majority of the villagers being illiterate (not able to read and understand French), and the meetings often organized by the head of the villagers in order to explain and clarify the policy and government expectations from the villagers not gathering many people; therefore, the population are not informed about the major points addresses by the forest policy. How may the management of the forest being successful if the principal stakeholders do not even understand what is about?

The mismanagement is also due to the failure of the government in the application of Article 5 and 6 of the forest codes which say, in the framework of the development of the national forest policy, the Minister implicates all the public and private actors concerned, at all the territorial levels. The national forest policy is adopted by the Council of Ministers on the proposal of the Minister and approved by the decree of the President of the Republic. To adapt the national forest policy to the particularities of each province, each provincial governor concerned draws up a provincial forest plan after consulting the provincial advisory council. The Governor involves both public and private actors in the forest sector in the management of the forest. After approval of the plan by the Minister, the Governor makes an order making it enforceable throughout the province".

Moreover, the researcher noticed that the last forestry plan that the governor is supposed to establish for the local management of the forest has not been changed for 6 years (2013). All the complaints made by the chief are nevertheless dealt with in the forest policy in its article 56 and 52: In order to prevent and combat forest and bush fires, the forest administration or the decentralized entities must, in particular, take the following measures: build, train and equip fire brigades, sensitization, training and supervision of local populations; Create observation posts in certain areas, particularly those threatened by fires (Art. 56/ Forest Policy). Any deforestation must be compensated by equivalent afforestation, in quality and area, to the initial forest cover achieved by the author of the deforestation or at his expense (Art. 52/ Forest Policy).

Unfortunately, none of the above-mentioned measures planned by the forest policy has been applied nor implemented. The forest Inspectors, nonetheless, come to meet the head of villages, but the villagers' complaints are not taken into account in the

establishment of the forestry plan. Thus, despite villager's effort to protect by themselves the resources of the Miombo forest, no concrete actions have been taken by the government as dictated in the forest policy to improve the management in the Miombo forest. Required instruments and finance are not yet allocated for the sake of sustainable management of the forest, as the Provincial Coordinator of the Ministry of Environment and Development of Haut-Katanga mentioned.

4.3.2.10 Local Communities' Management

During the data collection process, the researcher noticed that social, economic and cultural values of forest management were more important than ecological values for the local community. In the Miombo forest, the head of villages are the local leaders. They monitor any single activity performed by villagers in the chiefdom, and they are also in charge of educating them on forest management. During the time spent in the villages, the head of villages organized meetings. In Kaponda chiefdom, the researcher attended two meetings that were aimed at providing updates on the new regulations of the traffic on the national roads for charcoal producers. The charcoal producers use the national road to transport their goods from the village to the center of Lubumbashi, and the head of village announced them the new requirements of the government on wearing reflective jackets for their safety. The chief also insisted on the behaviour of villagers during that dry period (dry season) because according to the chief, forests are more likely to burn due to high temperature. That situation implied to villagers to avoid some of their practices such as throwing away cigarettes' butts, cooking near from the bush, incinerating households' waste, or any dangerous behavior that involves fire. The chief coordinates the forest management of villages under his responsibilities mostly for the sake of the community wellbeing.

The head of the village strongly protects forest areas that are under his jurisdiction. Some villagers indicated that he walked around the villages to see if all regulations mentioned in village meetings are followed and respected. Any violation of regulations given by the head of the village may result in a permanent exclusion out of the chiefdom.

On his side, the chief Kalengwe in Lumata village is more modernized than his counterpart in Kashamata and Kawama. During the research period, the researcher was lucky to attend to a meeting organized by the head of villagers since, according to villagers, the meeting happens less time that is has to. The meeting gathered less than twenty villagers, and the topics developed that day did not have any mention of the forest management. There is serious lack of required forest management knowledge in this village, as well as cultural values due to the mixture of its inhabitants as explained above. The modernization of Lumata village has attracted many people from the centre of Lubumbashi. That has caused the village to become heterogeneous in terms of dwellers. The researcher has noticed from group discussion that, taking reference to the Kaponda chiefdom where cultural values are strongly present, the forest in Kalengwe chiefdom does not have a great importance on villagers' point of view. The researcher observed the forest cover in Lumata village to confirm that statement. A considerable area of the village is covered with very young trees resulting from over-logging according to villagers.

The researcher faced difficulties to have in-depth interview with chief in Lumata. The chief seems to have more focus on the business development of his village, ignoring the cultural practices and values. The researcher noticed a contrast between the two chiefdoms, on the basis of forest management practices. The Kaponda chiefdom is

really concerned about the forest as they strongly follow their culture, whilst the Kalengwe chiefdom does exactly the opposite.

4.4 Summary

This chapter presented the main findings of the study with the ambition of assessing the implementation of the forest policy in the Miombo forest. Using the forest code as a guide for the assessment, the general outcome of the assessment reveals that the reality on the field is far different from what the government pretended. The local communities, which are supposed to benefit from different regulations of the forest code, are under critical threats, and the implementation of different articles that address their issues is totally absent. The recognition of stakeholders and their responsibilities was one of the great challenges that the researcher faced, and that caused a serious lack of information on that subject. There are many closed doors when it comes to assess any policy in the DRC, the government reserving the rights to disclose some information that would have been beneficial for the research. Nonetheless, different discussion that the researcher had with the officials of the government gave us more information. The findings were globally helpful for our research objectives.

5.1 Introduction

This chapter summarizes the research and pays particular attention to key findings emerging from the research and the subsequent recommendations that emanated from the findings. These recommendations are informed by some suggestions that were given by various stakeholders in the Miombo forest and the forestry advisory council during our data collection. It must be noted however that what this study presents as a summary and conclusion is not in itself all what is available to the study of assessing the implementation of a forest policy. As such room has been left for future research and debate on policy assessment. It is therefore, the researcher's sincere hope that conclusion drawn in this research will ignite debate on the subject to provoke discussion that will eventually lead to a reform of the forest policy in the Democratic Republic of Congo.

5.2 Conclusion**5.2.1 Government and Stakeholders' Responsibilities in the Miombo Forest**

Unclear policy and bad governance cause the forest policy implementation challenges. The Congolese authorities should focus on how to involve different stakeholders in the forest management that could be used to combat the forest cover losses problem in the Miombo forest. That loss is mainly due to expansion of local farming activities, that aims to feed up the city of Lubumbashi. Local community does not yet acknowledge the concept of community forest whereby local communities are involved in the implementation of the forest policy and individuals within the Miombo forest community are even just discussed it. However, the participation of communities in the management of the forest is sharply dropping and is currently known by both the central and local government. The adoption of sustainable forest

management by involving communities is very important to the local people in the Miombo forest, but the government of DRC has to provide a well detailed and clear policy implementation plan that will clarify rights and responsibilities of each stakeholder involved.

Providing required instruments in the management of the forest in DRC will surely improve a sustainable management of the forest, implementation of the forest policy. The Congolese authorities should now stop with corruption that is seems to be done at all level in the country. The local communities do not have adequate forest knowledge, especially by head of villages who are involved directly in the implementation of the forest policy. Educating local people on how to manage the forest will help to improve the management of the forest in which they are directly involved, and will therefore enable the understanding of the major aspects of the forest policy.

The failure in the assessment of the forest policy implementation in the Lubumbashi Miombo forest in Lubumbashi is mainly due to several reasons; among which we found the forest code itself that is fairly inactive, the forest institutions that are mostly inactive and human resources who lack training. Therefore, we notice that the government has not yet put enough efforts in rebuilding the forest sector on the community level in the Miombo forest. Currently, local communities in the Miombo forest in Lubumbashi have started to bring out their disagreements and disappointments with the forest management system. The local people, through their leaders, are asking for more rights in the management of their natural resources. The research study has found that local communities still use non– timber forest product (NTFP) as products that play a significant role in supporting their livelihoods. In the area outside the village, a larger part of land is not used by local people for their daily need, due to non-specified local management strategies. Instead, local people choose

to practice farming activities in the forest. These practices are unavoidably destroying the environment and increase the forest cover loss in the Miombo forest.

5.2.2 Policy Implementation and Forest Transformation

This study has given the results expected from the research questions. The results show that, there are no clear understanding of the forest policy major concepts and the basic in the management of forest by local people; this is one of the aspects that cause a failure in the implementation of the forest policy. The study also shows that the local communities are not aware of rights and duties related to the forest resources, they are still not gaining benefits from the forest resources and miss to accomplish what the forest policy is expecting from them. The forest policy has no clear distinction between rights and duties for local communities in the management of the Miombo forest.

During fieldwork, the observation shows that there is lack of communication and interaction between the government and the local communities. Therefore, in order to effectively ensure a good implementation of the forest policy in the Miombo forest, the communication issue has to be addressed in order to clear all misunderstandings that currently exist. The main task of the local government will be to make understood the forest code to all the stakeholders in the Miombo forest, so that they know what they are supposed to do and what they are not allowed to do. They should therefore know what forest activities they may practice within the Miombo forest, without harming the forest biodiversity.

One of the research objectives was to evaluate the impacts of the forest policy on the local communities in the Miombo forest. A recognition of traditional rights as way to understand the impacts on local people in the forest management was an important aspect that we focused on. In a management, circumstance of natural resources

identification and recognition of traditional ecological knowledge is vital for sustainable community forest management. All rights regarding access to forest, and to forest resources management need clarification, since the forest policy is clearly misunderstood by the local communities. Therefore, it has a negative impact in their daily life, and that cause conflict between the government and the stakeholders. In order for conflict to be avoided, all the involved stakeholders in the Miombo forest need to be consulted. Local communities' participation, which is already in action, will be very important if the above-mentioned issues are addressed and the forest code will have the expected impact on them, to a certain extend.

The lack of government of DRC to not provide adequate knowledge to community's forest activities has caused community forest management not well practiced; thus a clear failure in the implementation of the forest policy. The lack of financial support may also be considered has a driving force for that failure.

It is therefore, for the government of DRC to take serious measure to empower local communities. In addition to above thought; is that for success of this relation is through strengthening of local forestry institutions capacity, develop human resources capacity to cope with challenges posed by forest resources management. The government has also a big task to help develop community forest networks. This should be followed by promoting alternative piloting' projects direct to local communities in order to develop financial income opportunities.

One of the positive aspects of DRC state of forest is that the DRC has been a good partner of international community. The DRC has been also conserving forest ecosystems which make it rich in biodiversity due to conservation effort of the past. The efforts of forest conservation should also set a ground for "ecological state" to support this country to establish a sustainable community forest management.

As discussed above, the DRC lack trained human resource; so, for the country to better its management, the issue has to be addressed as soon as possible. That has to start with the training of forestry administrator, head of villagers, as they are the first line implementers of the forest policy. Continue giving money to local population will not ameliorate anything since the beneficiaries lack important knowledge on the management of the forest as dictated by the forest code. The groundwork shows that there is a not actually good management responsibility between the government and local communities. The implementation of the forest policy in general requires first an implementation of structure to sustainably manage the forest. The basic structure refer too, is basic administration, program, strategy and implementation plan.

Back to the background of the context of adoption of the current forest policy, the World Bank helped the Congolese government to make an important step in the adoption of a sustainable forest policy, but it does not guarantee that the forest code has made any change to Congolese people. This research clearly shows that, indeed a forest code has been done seventeen years ago, but forest ecological knowledge is also very important. The forest code, which has been adopted and implemented during economic collapse and weak institutions capacity has not save Congolese in any ways as it was meant for. According to local forest advisory council, foreigner companies and politicians influence more in the decision making than local community members at all. If this statement is true, that means the influence and interest of foreigners companies were strongly represented in the current forest policy and code than those for local people in forest management all level in the country, which also include the Miombo forest.

The reform of institution could not just start by make forest policy to Congolese people without deep knowledge of academic institutes or civil societies. Therefore, the

preparation of the forest policy for DRC was not inclusive enough. This shows that, the United Nations through the World Bank did not have good intention to assist the country to start a sustainable reform of forest institutions. The country needs a more inclusive and effective forest policy that may change the forest sector, and give more attention to local communities need especially in the areas near to very populated cities like the Miombo forest. The non-stop increasing number of people in Lubumbashi plays a serious role in the actual degradation of the Miombo forest and the forest code looks to do not address issues of overpopulated areas. The reliance of Congolese people on the forest due to lack of sustainable Energy sources is also one of the most important factor in the degradation of the Miombo forest in particular, and for the whole country at large. Continue blaming local communities for not respecting the forest law will not solve any problem. Because the forest code was elaborated on wrong basis, without taking into account the major issues of Congolese people. The forest code reform in DRC is more than ever necessary, as the implementation of the current one failed to address the issues that it was made for, not only due to lack of strong state institutions but also due to the context of its adoption. The population in the Miombo forest are more suffering than benefitting from the forest code, and lack important knowledge to be considered as major stakeholders in the implementation of the forest policy. Therefore, all the responsibilities regarding the failure of the implementation of the forest policy in the areas comes to the government.

5.3 Implications

The research study has actually given the results that were expected from the research questions. The results show that, there are no clear and secure property rights; this is one of the aspects that cause forest degradation in Miombo forest in Lubumbashi. It also shows that community people are not aware of rights related to management of

forest resources, community are still deprived from their rights to gain benefits from forest resources. The state document regarding to forest policy have no clear distinction in rights and no clear management responsibility.

The transect observation during fieldwork shows that there is strong evidence for lack of dialogue between officials and community members. Therefore, in order to develop community forest management to be feasible in Miombo forest, there is a need for serious engagement in dialogue between local officials and local communities in Miombo forest. This step will help to find a sustainable solution from the difficulties' that is preventing community forest management from not being properly practice. The main task of the local forestry authorities will be to explains the forest code to the local communities for local people to know their limitation to forest resource utilization. Rural community need to know what activities are allowed and those are not allowed by the forest law. At the same time local community should be aware of what forest activities they may practice within the Miombo forest, while continue preserving their cultural diversities alongside with forest biodiversity.

5.4 Recommendations

- 1) Strong forest management must be established or developed in the Miombo forest as soon as possible, until the forest code is reviewed. Being poor, the population in the Miombo forest rely on the forest has the only resource that provide to them any benefit. That strong forest management asks for government to collaborate with local communities in a strong perspective. Participatory approach in decision-making process is currently the sustainable option for the forest management to succeed. The participatory management will require the government to motivate local people to participate in all activities that will be carrying out. Additionally, the collaboration of the government with local people will definitely end the

conflicts that exist in the Miombo forest. Priorities have to be set while establishing mechanism of forest management, and that will act as a booster for local community to solve community forest dynamic. There is a need to develop provincial community forest regulations that will recognize and supported by central government.

- 2) The Congolese government on national level should be encouraged to have multilateral approach in its relation with other countries. The collaboration should also base on clear term, for example rights in regards to forest management, utilization and duration of the agreement as well as how to secure these agreements for future contract. The main point is that all requirements should indicate that collaborative action would require tools that improved natural resource management and policies. Sufficient social responsibility, management capacity and sensitiveness from all prominent stakeholders, such as governments, forest industries and local communities will be effective.
- 3) The Country needs to collaborate with developed countries in order to set a strong forest management at all level in the country, which will allow a effective implementation of the forest policy. One of the mechanisms that may allow that is the concept of “Ecological states”. The “Ecological states” is defined as countries from developed countries that sustainably practice forest ecological knowledge on ground and have an active forest policy in place to manage sustainably forest ecosystem (Rufinga, 2012). The contribution of that concept will also help the country to improve its academic level, especially regarding the management of the forest. The second step is to develop more possibility of having more research on forest resource in DR- Congo. The results from different research contacted

particularly in forest sector could assist Congolese authorities to start making better decision. This practical measure may also assist DRC to start knowing how to build better national governing institutions capacity on their own.

- 4) The forest code has to be clarified by the Congolese government on what to do with its forest resource principally at community level. That means that all stakeholders in the forestry sector should promote a culture of transparency and active partnership. The application of laws and regulations is not only the responsibility of the state, but of all stakeholders. That being said, political elites should set the moral tone and cannot simply leave the management of the forestry sector to the private sector and development partners. Moreover, to end the vicious cycle of dependency, a change in mentality and behavior is required. The current situation of ‘guidance from the top (or outside)’ should be changed to one in which stakeholders are ‘agents of collective contribution’. Experts are urged to think about ways to stimulate equitable citizen involvement in decision-making through innovative mechanisms of community involvement and empowerment. The state should mobilize all stakeholders to swap a rent-seeking logic for one of investment seeking to fight against the illegal timber trade. Development partners should support the government at both national and provincial levels in their efforts to regulate the artisanal, semi-industrial logging sector.
- 5) Further research on the assessment of the implementation of the forest policy should have a close focus on the central government as well, to understand exactly why all the claims and awareness’s have never been take into account and why that high negligence to reform the forest code.

5.5 Suggestions for Further Research

Further research on the assessment of the implementation of the forest policy should have a close focus on the central government as well, to understand exactly why all the claims and awareness's have never been take into account and why that high negligence to reform the forest code. There is thus a need to carry out further research to determine the same process in a number of other forests in DRC to find out how the current forest policy is being implemented nationally. Thereafter, the impacts of forest policy in the country under the context of the Forests policy 2002, should be determined. Such a study will provide knowledge on the forest recovery process and indicate if the country is on the right track towards achieving the internationally recommended 10% level of forest cover by year 2030 as envisioned in the country's Vision 2030 development blueprint.

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APPENDICES

APPENDIX 1: Institutional Introductory Letter



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26 June 2019

TO WHOM IT MAY CONCERN

Re: Permission to Undertake Research for Dissertation June - August 2019

BUPE MBOYA MERVEILLE student registration number **141094** is a student at Africa University. She is enrolled in the Masters in Public Policy and Governance and is currently conducting research for her dissertation, which is required for completion of the programme in July 2019. The research topic is "ASSESSMENT OF THE IMPLEMENTATION OF THE FOREST POLICY IN DEMOCRATIC REPUBLIC OF CONGO, CASE OF LUBUMBASHI (MIOMBO FOREST)"

BUPE is expected to undertake her data collection from June – August 2019 before the dissertation can be submitted to the College in August 2019. The student will share with you the results of this research after its approval by the College.

We thank you for your support and cooperation regarding this research.

Yours sincerely

Ms. B. Dodzo

Ms. B. Dodzo
CBPLG Administrator



APPENDIX 2: AUREC Approval Letter



INVESTING IN AFRICA'S FUTURE

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

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Ref: AU1016/19

27 May, 2019

Bupe Mboya Merveille
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MUTARE

**RE: ASSESSMENT OF THE IMPLEMENTATION OF THE FOREST POLICY IN
DEMOCRATIC REPUBLIC OF CONGO, CASE OF LUBUMBASHI (MIOMBO
FOREST)**

Thank you for the above titled proposal that you submitted to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

- a) Research proposal
- b) Questionnaires
- c) Informed consent form

• **APPROVAL NUMBER** AUREC1016/19

This number should be used on all correspondences, consent forms, and appropriate documents.

• **AUREC MEETING DATE** NA
• **APPROVAL DATE** May 27, 2019
• **EXPIRATION DATE** May 27, 2020
• **TYPE OF MEETING** Expedited

After the expiration date this research may only continue upon renewal. For purposes of renewal, a progress report on a standard AUREC form should be submitted a month before expiration date.

- **SERIOUS ADVERSE EVENTS** All serious problems having to do with subject safety must be reported to AUREC within 3 working days on standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

Yours Faithfully

**MARY CHINZOU – A/AUREC RESEARCH ETHICS OFFICER
FOR CHAIRPERSON, AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE**



APPENDIX 3: Participant Consent Form English Version

My name is BUPE MBOYA MERVEILLE, a Masters student doing public policy and governance at Africa University in Zimbabwe. I am carrying out a research on the assessment of the implementation of the forest policy in Democratic Republic of Congo case of Lubumbashi (Miombo forest). I am going to give you relative information and kindly invite you to be part of this research. You do not have to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research. There may be some words that you do not understand, please ask me to stop as we go through the information and I will take time to explain. The information you give will be treated with confidentiality, therefore you will not be required to indicate your names anywhere on this questionnaire as a measure of confidentiality. The information provided will be used for the purpose of this study. I kindly request you to fill the questionnaire and your responses will be highly appreciated.

PURPOSE OF THE RESEARCH

The overall purpose of this study is to assess the effectiveness of the current forest policy in the Democratic Republic of Congo, since its implementation in 2002. The study will contribute in providing information on the progress of that policy, since the forest plays an important role in the daily life of us Congolese population.

PROCEDURES AND DURATION

If you decide to participate in this research, you will be required to complete the questionnaire or answer interview questions. It is expected that this will take only about 15 to 20 minutes. To avoid work disruptions, you will be given three days to complete the questionnaire form so that you can fill it at your spare time. The short interview will be conducted upon placing an appointment.

RISKS AND DISCOMFORTS

No risk or discomforts associated with this study.

BENEFITS AND/OR COMPENSATION

There will be neither direct benefit nor any incentive to you to take part in the research, but your participation is likely to help us find a balance between you as stakeholders and the government in the implementation of the forest policy, for a good forest management.

CONFIDENTIALITY

I am the only one who will know your name and number, and we will lock that information up with a lock and key.

VOLUNTARY PARTICIPATION

Your participation in this research is entirely voluntary. It is your choice whether to participate or not. Whether you choose to participate or not, all your rights as a citizen will continue to be observed and nothing will change. You may change your mind later and stop participating even if you agreed earlier.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORISATION

If you have decided to participate in this study, please sign this form in the space provided below as an indication that you have read and understood the information provided above and have agreed to participate.

Name of Research Participant (please print)	Date
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Signature of Research Participant or legally authorised representative

If you feel that you have been treated unfairly and would like to talk to someone other than the researcher, please feel free to contact the Africa University Research

Ethics Committee on telephone (020) 60075 or 60026 extension 1156 email aurec@africau.edu Name of Researcher: BUPE MBOYA Merveille.

APPENDIX 4: Participants Consent Form French Version

Je soussigné BUPE MBOYA MERVEILLE, étudiante de maîtrise en politiques publiques et gouvernance. Je suis entraîné d'évaluer le bilan de la mise en œuvre de la politique forestière en république démocratique du Congo en prenant cas de la ville de Lubumbashi (forêt de Miombo). Je vous donnerai des informations relatives à cette présente étude et vous inviterai gentiment à faire partie de cette recherche. Vous n'êtes pas obligé de décider aujourd'hui si vous participerez ou non à la recherche. Avant de vous prononcer, vous pouvez parler de la recherche à toute personne avec qui vous vous sentez à l'aise. Il y a peut-être des mots que vous ne comprenez pas, veuillez s'il vous plaît demandez de m'arrêter pendant que nous parcourons les informations et je prendrai le temps de vous expliquer à nouveau afin de vous éclaircir. Les informations que vous donnez seront traitées de manière confidentielle. Par conséquent, vous ne serez pas obligé d'indiquer vos noms sur le questionnaire, à des fins de confidentialité. Les informations fournies ne seront utilisées qu'aux fins de cette recherche. Je vous demande de bien vouloir remplir le questionnaire et vos réponses seront très appréciées et souhaitées.

BUT DE LA RECHERCHE

L'ensemble de cette étude consiste à évaluer l'efficacité de la politique forestière en vigueur en République démocratique du Congo depuis sa mise en œuvre en 2002. L'étude contribuera à fournir des informations sur l'évolution de cette dernière, étant donné que la forêt joue un rôle important dans la vie quotidienne de nous population congolaise.

PROCÉDURES ET DURÉE

Si vous décidez de participer à cette étude, vous devriez remplir le questionnaire ou répondre aux questions de l'entrevue. Cela ne devrait prendre que 15 à 20 minutes. Pour éviter des quelconques interruptions dans votre travail, vous disposez de trois jours pour remplir le questionnaire et le remplir pendant votre temps libre. La courte entrevue aura lieu lors de la prise d'un rendez-vous.

RISQUES ET INCOMPATIBLES

Aucun risque ou inconfort n'est associé à cette étude.

AVANTAGES ET / OU COMPENSATION

Il ne vous apportera aucun avantage direct ni aucune incitation à participer à la recherche, mais votre participation n'aidera probablement qu'à trouver un équilibre entre vous en tant que parties prenantes et le gouvernement dans la mise en œuvre de la politique forestière, pour une bonne gestion forestière.

CONFIDENTIALITÉ

Aucun nom ne sera inscrit sur les questionnaires et les entretiens. Seuls moi le chercheur saurai quel est votre numéro et nous verrouillerons cette information avec un code.

PARTICIPATION VOLONTAIRE

Votre participation à cette recherche est entièrement volontaire. C'est votre choix de participer ou non. Que vous choisissiez de participer ou non, tous vos droits en tant que citoyen continueront à être respectés et rien ne changera. Vous pouvez changer d'avis plus tard et arrêter de participer même en ayant convenu d'y participer plus tôt.

OFFRE À RÉPONDRE AUX QUESTIONS

Avant de signer ce formulaire, veuillez poser des questions sur tout aspect de cette étude qui n'est pas clair pour vous. Vous pouvez prendre tout le temps nécessaire pour y réfléchir.

AUTORISATION

Si vous avez décidé de participer à cette étude, veuillez signer ce formulaire dans l'espace prévu à cet effet ci-dessous pour indiquer que vous avez lu et compris les informations fournies ci-dessus et que vous avez accepté de participer.

Nom du participant à la recherche (en caractères d'imprimerie) Date

Signature du participant à la recherche ou d'un représentant légalement autorisé

Si vous sentez que vous avez été traité injustement et que vous souhaitez parler à quelqu'un d'autre que le chercheur, n'hésitez pas à contacter le Comité d'éthique de la recherche de Africa University au 020 60075 ou au 60026 poste 1156, email aurec@africau.edu

Nom du chercheur: BUPE MBOYA Merveille

APPENDIX 5: Villagers Interview Guide English Version

PEOPLE ON THE GROUND

1. Do you know that you must ask for an inventor before forest exploitation?

r/ YES

r/NO

2. How many taxes are you aware of and how many do you pay?

Indicate Please

3. Are you aware that the forest is a state property?

r/ YES

r/NO

4. Did you ever hear of someone be arrested or have a lawsuit because of non-respect of the forest code?

r/ YES

r/NO

5. Do you know that you risk a penal punishment of one year or above if you don't respect the forest code?

r/ YES

r/NO

6. Do you know that any activity in the forest (Exploitation, tourism, hunting) must be approved by the Ministry of environment before to be done?

r/ YES

r/NO

7. Do you know that no one is allowed to collect any kind of tax directly from you except you go and pay directly to the Ministry of environment?

r/ YES

r/NO

8. Even though as native people you have the right to exploit the forest surrounding you, but do you know that everything must be approved by the local administrator?

r/ YES

r/NO

9. Any foreign plant (alive or died) must be approved by the Ministry of Environment before been introduced in the country; are you aware of that?

r/ YES

r/NO

10. How do you identify a forest inspector?

Indicate Please

11. Are you aware that an area of 100 m around a river is prohibited from any kind of forestry activity?

r/ YES

r/NO

APPENDIX 6: Villagers Interview Guide French Version

AUX PERSONNES SUR LE TERRAIN

1. Savez-vous que vous devez demander un inventaire avant l'exploitation forestière?

a/ Oui b/Non

2. Combien d'impôts êtes-vous au courant et combien payez-vous?

3. Savez-vous que la forêt est une propriété de l'État?

a/ Oui b/Non

4. Avez-vous déjà entendu parler de quelqu'un qui aurait été arrêté ou poursuivi en justice pour non-respect du code forestier?

a/ Oui b/Non

5. Savez-vous que vous risquez une peine pénale d'un an ou plus si vous ne respectez pas le code forestier?

a/ Oui b/Non

6. Savez-vous que toute activité dans la forêt (exploitation, tourisme, chasse) doit être préalablement approuvée par le ministère de l'environnement?

a/ Oui b/Non

7. Savez-vous que personne n'est autorisé à percevoir un roi d'impôt directement auprès de vous si vous n'allez pas payer directement au ministère de l'Environnement?

a/ Oui b/Non

8. Même si en tant qu'Autochtones, vous avez le droit d'exploiter la forêt qui vous entoure, mais savez-vous que tout doit être approuvé par l'administrateur local?

a/ Oui b/Non

9. Toute plante étrangère (vivante ou morte) doit être approuvée par le ministère de l'Environnement avant d'être introduite dans le pays; êtes-vous au courant de cela?

a/ Oui b/Non

10. Comment identifiez-vous un inspecteur forestier?

11. Savez-vous qu'une activité forestière est interdite dans une zone de 100 m autour d'une rivière?

a/ Oui b/Non

12. Connaissez-vous des produits forestiers protégés par le ministère de l'Environnement?

a/ Oui (Lesquels) b/Non

13. Quand avez-vous commencé votre activité forestière?

14. Etes-vous à Lubumbashi depuis 17 ans?

a/ Oui b/Non

15. Si non, De quel milieu venez-vous?

16. Quelles raisons vous ont amené à Lubumbashi?

a/ Affaire b/Souffrance c/Autres

17. Signalez-vous à l'administration locale tout problème ou observation que vous pourriez rencontrer sur le terrain?

a/ Oui (Combien de fois) b/Non

APPENDIX 7: Villagers Interview Guide Swahili Version

1. Je! Ulijua kuwa lazima uulize mvumbuzi kabla ya kukata miti?
2. Je! Unajuwa ushuru kiasi gani na unalipa pesa ngapi?
3. Je! Unajua kuwa msitu ni mali ya serikali?
4. Je! Umewahi kusikia juu ya mtu ambaye amekamatwa au kushtakiwa kwa kukiuka msimu wa msitu?
5. Je! Ulijua kwamba unahatarisha hukumu ya jinai ya mwaka mmoja au zaidi ikiwa hauheshimu msimbo wa msitu?
6. Je! Ulijua kuwa shughuli yoyote katika msitu (ukataji miti, utalii, uwindaji) lazima idhiniwa mapema na Wizara ya Mazingira?
7. Je! Unajua kuwa hakuna mtu anayeruhusiwa kukusanya mfalme wa ushuru kutoka kwa moja kwa moja ikiwa hautalipa moja kwa moja kwa Wizara ya Mazingira?
8. Hata ikiwa kama watu wa kabinabara una haki ya kuvuna msitu unaokuzunguka, laki unajua kuwa kila kitu lazima kiidhinishwe na msimamizi wa eneo lako?
9. Mtambo wowote wa kigeni (aliye hai au aliyekufa) lazima apitishwe na Wizara ya Mazingira kabla ya kuingizwa nchini; unajua hiyo?
10. Je! Unamtambua je mhakiki wa misitu?
11. Je! Ulijua kuwa ukataji miti ni marufuku katika eneo la mita 100 kuzunguka mto?
12. Je! Unajua bidhaa za misitu zilizolindwa na Wizara ya Mazingira?
13. Ulianza lini shughuli yako ya misitu?
14. Je! Umekuwa wapi Lubumbashi kwa miaka 17?
15. Unatoka wapi?
16. Je! Ni sababu gani zilizokuleta Lubumbashi?
17. Wilaya yako ya sasa ni nini?
18. Je! Unaripoti shida au uchunguzi wowote ambao unaweza kukutana nao kwenye uwanja kwa uongozi wa eneo?

APPENDIX 8:Key Informants Interview Guide English Version

1. What is the current identified regional forest resources in Lubumbashi?
2. Which actions have been taken since 2002 to ensure the forest conservation in Lubumbashi?
3. What are the current actors (public and private) in the Lubumbashi forest management?
4. What are the actions plans that have been taken by the governors of Katanga province in order to adapt the national forest policy in the province?
5. What are the current classified and protected forest in Lubumbashi?
6. What are the criteria that must be completed before giving a piece of forest to local people?
7. What are both the attributions and restrictions of the forest police?
8. In which case can the Ministry of environment choose a citizen who is not employed as a forest manager?
9. What is the main objective of the forestry hammer?
10. What are the attributions of the forest cadaster and what is their implication in the forest management?
11. Which criteria, uses the provincial forest council, to classified or declassified a forest?
12. What are the current forests NGOs, which are carrying out their activities in Lubumbashi, agreed by the Haut-Katanga Governor?
13. How is done the forest inventory?
14. What are the state branches that are involved in the planning and realization of forest research?
15. How can the Ministry of environment be able to identify the belonging of people in rural areas?
16. What are the current forest products allowed by the local government to be commercialized in Lubumbashi?
17. What is the updated list of woody forest product, and how many have been added or removed since 2002 in Katanga province?
18. What are the formalities that any moral person must fill before deforest a land given to him and how the ministry controls that the reforestation is done equivalently?

19. On which basis does the Ministry of environment charge taxes on deforestation?
20. How have been spent the taxes income for the past seventeen years in Lubumbashi?
21. What fulfillments have done the forest fire brigade since 2002 in Lubumbashi?
22. How many unwanted forest fire have been recorded since 2002 in Lubumbashi?
23. What activities does the local government in Katanga benefit from the forest management?
24. Which forest in Lubumbashi have benefited from a renovation due to the forest management policy?
25. What are the people who have been involved in the forest management implementation in Lubumbashi?
26. How is the forest administration in Lubumbashi monitoring all forest resource by following the development plan?
27. Which forest in Lubumbashi benefited from the national reconstitution plan since 2002?
28. What facts are involved in the investigation, which comes before a forest concession granting?
29. How many public investigations have been done and how many forest concessions have been given to individuals since 2002 in Lubumbashi?
30. How is the local administration monitoring the forestry concession contract toward on moral person whom has been given a forest concession?
31. What size of forest containing woody forest product can local people exploit when they don't have a forestry concession contract?
32. Are native people in Lubumbashi's forest also obligated to reforest after exploiting the forest?
33. Which criteria come into play when determining the numbers of technical controllers in the rural areas while native people exploit the forest?

APPENDIX 9: Key Informants Interview Guide French Version

1. Quelles sont les ressources forestières régionales identifiées actuelles à Lubumbashi?
2. Quelles actions ont été entreprises depuis 2002 pour assurer la conservation de la forêt à Lubumbashi?
3. Quels sont les acteurs actuels (publics et privés) dans la gestion de la forêt de Lubumbashi?
4. Quels sont les plans d'action mis en place par les gouverneurs de la province du Katanga afin d'adapter la politique forestière nationale de la province?
5. Quelles sont les forêts classées et protégées actuelles à Lubumbashi?
6. Quels sont les critères à remplir avant de donner un morceau de forêt aux populations locales?
7. Quelles sont les attributions et les restrictions de la police forestière?
8. Dans quel cas le ministère de l'environnement peut-il choisir un citoyen qui n'est pas employé en tant que gestionnaire de forêt?
9. Quel est l'objectif principal du marteau forestier?
10. Quelles sont les attributions du cadastre forestier et quelle est leur implication dans la gestion forestière?
11. Quels critères, utilise le conseil forestier provincial, pour classer ou déclassifier une forêt?
12. Quelles sont les ONG forestières actuelles qui mènent leurs activités à Lubumbashi, approuvées par le gouverneur du Haut-Katanga?
13. Comment se fait l'inventaire forestier?
14. Quelles sont les branches étatiques impliquées dans la planification et la réalisation de la recherche forestière?
15. Comment le ministère de l'environnement peut-il identifier l'appartenance des habitants des zones rurales?
16. Quels sont les produits forestiers actuels autorisés par le gouvernement local à être commercialisés à Lubumbashi?
17. Quelle est la liste mise à jour des produits forestiers ligneux et combien ont été ajoutés ou supprimés depuis 2002 dans la province du Katanga?
18. Quelles sont les formalités qu'une personne morale doit remplir avant de déboiser une terre qui lui est donnée et comment le ministère contrôle-t-il le fait que le reboisement est effectué de manière équivalente?
19. Sur quelle base le ministère de l'environnement prélève-t-il des taxes sur la déforestation?
20. Comment les recettes fiscales ont-elles été dépensées au cours des dix-sept dernières années à Lubumbashi?
21. Quelles sont les réalisations des pompiers forestiers depuis 2002 à Lubumbashi?
22. Combien de feux de forêt indésirables ont été enregistrés depuis 2002 à Lubumbashi?
23. Quelles activités le gouvernement local au Katanga bénéficie-t-il de la gestion forestière?

24. Quelles forêts de Lubumbashi ont bénéficié d'une rénovation en raison de la politique de gestion forestière?
25. Quelles sont les personnes qui ont été impliquées dans la mise en œuvre de la gestion forestière à Lubumbashi?
26. Comment l'administration forestière de Lubumbashi surveille-t-elle toutes les ressources forestières en suivant le plan de développement?
27. Quelle forêt à Lubumbashi a bénéficié du plan de reconstitution national depuis 2002?
28. Quels sont les faits en jeu dans l'enquête, qui précède une concession forestière?
29. Combien d'enquêtes publiques ont été effectuées et combien de concessions forestières ont été attribuées à des particuliers depuis 2002 à Lubumbashi?
30. Comment l'administration locale surveille-t-elle le contrat de concession forestière avec une personne morale à qui une concession forestière a été attribuée?
31. Quelle est la taille de la forêt contenant des produits forestiers ligneux que les populations locales peuvent exploiter s'ils n'ont pas de contrat de concession forestière?
32. Les autochtones de la forêt de Lubumbashi sont-ils également obligés de reboiser après avoir exploité la forêt?
33. Quels critères entrent en jeu pour déterminer le nombre de contrôleurs techniques dans les zones rurales pendant que les autochtones exploitent la forêt?

APPENDIX 10: Forest Code Articles Mentioned in the Research

TITRE PREMIER:

DES DISPOSITIONS GENERALES

Article 4 :

Il est institué une politique forestière nationale dont l'élaboration incombe au ministère ayant les forêts dans ses attributions.

La politique forestière nationale définit des orientations générales qui sont traduites dans un plan forestier national.

Le plan forestier national fixe les objectifs à atteindre et définit les actions à mettre en œuvre. Il comporte notamment:

a. la description des ressources forestières; b. l'estimation des besoins en produits

forestiers ;

c. le programme des actions à mener en vue d'assurer la conservation des forêts et le développement du secteur forestier;

4. la prévision des investissements nécessaires;

5. les niveaux d'intervention et le rôle des différents acteurs concernés et

6. toutes autres indications utiles pour l'exécution de la politique forestière nationale.

Article 5 :

Dans le cadre de l'élaboration de la politique forestière nationale, le Ministre implique l'ensemble des acteurs tant publics que privés concernés, à tous les échelons territoriaux.

La politique forestière nationale est adoptée en conseil des Ministres sur proposition du Ministre et approuvée par décret du Président de la République.

Article 6 :

Afin d'adapter la politique forestière nationale aux particularités de chaque province, un plan forestier provincial est élaboré par chaque gouverneur de province concernée après avis du conseil consultatif provincial. Le gouverneur implique les acteurs tant publics que privés du secteur forestier.

Après approbation du plan par le ministre, le gouverneur prend un arrêté le rendant exécutoire sur toute l'étendue de la province.

CHAPITRE TROISIÈME:

DES INSTITUTIONS DE GESTION ET D'ADMINISTRATION DES FORÊTS

Article 25 :

Le Ministre peut, par arrêté, déléguer en tout ou en partie, la gestion de forêts classées à des personnes morales de droit public ou à des associations reconnues d'utilité publique dans le but de les protéger et de les mettre en valeur et d'y conduire les travaux de recherche ou d'autres activités d'intérêt public.

Article 28 :

Il est créé au niveau tant national que provincial un cadastre forestier assurant la conservation :

1. des arrêtés de classement et de déclassement des forêts ;
2. des contrats de concession forestière
3. des actes d'attribution des forêts aux communautés locales ;
4. des arrêtés d'attribution de la gestion des forêts classées ;
5. des arrêtés de délégation de pouvoir d'administration des forêts ;
6. des documents cartographiques ;
7. de tous actes constitutifs de droits réels, grevant les actes cités aux literas b, c et d ci-dessus.

TITRE IV :

DE LA PROTECTION DES FORETS Chapitre premier :

Des mesures générales de protection et des essences protégées

Article 45 :

Le domaine forestier est protégé contre toute forme de dégradation ou de destruction du fait notamment de l'exploitation illicite, de la surexploitation, du surpâturage, des incendies et brûlis ainsi que des défrichements et des déboisements abusifs.

Sont particulièrement interdits, tous actes de déboisement des zones exposées au risque d'érosion et d'inondation.

Article 46 :

L'introduction sur le territoire national de tout matériel végétal forestier, vivant ou mort, est soumise à l'autorisation préalable du Ministre ou de son délégué, sur présentation d'un certificat d'origine et d'un certificat phytosanitaire délivrés par l'organisme compétent du pays de provenance.

**CHAPITRE DEUXIÈME :
DU CONTRÔLE DU DÉBOISEMENT**

Article 52 :

Tout déboisement doit être compensé par un reboisement équivalent, en qualité et en superficie, au couvert forestier initial réalisé par l'auteur du déboisement ou à ses frais.

Article 56 :

Afin de prévenir et de combattre les feux de forêts et de brousse, l'administration forestière ou les entités décentralisées doivent prendre notamment, les mesures suivantes : constituer, former et équiper des brigades chargées de la lutte contre les feux, ainsi que de la sensibilisation, de la formation et de l'encadrement des populations locales ; créer des postes d'observation dans certaines régions particulièrement celles menacées d'incendies.

**TITRE VII :
DE L' EXPLOITATION FORESTIERE**

Article 98 :

Les autorisations d'exploitation sont strictement personnelles et ne peuvent être ni cédées ni louées. Elles ne peuvent être accordées qu'à titre onéreux. Elles sont réglementées par arrêté du Ministre qui en fixe les types, les modalités d'octroi, les droits y attachés et la durée de validité et détermine les autorités habilitées à les délivrer.

Article 102 :

Sous réserve de l'exercice des droits d'usage forestiers reconnus aux populations locales, l'exploitation de tout produit forestier est soumise à l'une des autorisations prescrites par l'article 98 de la présente loi et donne lieu au paiement d'une taxe dont l'assiette et le taux sont fixés par arrêté conjoint des Ministres ayant les forêts et les finances dans leurs attributions. Toute coupe de bois en dehors d'une concession forestière donne lieu au paiement d'une taxe d'abattage.

APPENDIX 11: Field Observation Checklist

FIELD OBSERVATION CHECKLIST

Date:

Inspected by:

Site:

Participants:

Items	Comments/Actions
Forest cover	
State of Roads and other access	
Surface	
Weather of the day	
Deforested area	
Forest products observed	

General observation:

Researcher Signature:

APPENDIX 12 : Anti Plagiarism Report

The image is a screenshot of a PDF document titled "Urkund Report - BUPE MBOYA.docx (D63732095).pdf" opened in Adobe Reader. The document features the Urkund logo at the top left. The main content is titled "Urkund Analysis Result" and contains the following information:

Analysed Document:	BUPE MBOYA.docx (D63732095)
Submitted:	2/11/2020 9:09:00 AM
Submitted By:	djeranyama@africau.edu
Significance:	1 %

Sources included in the report:

- Examensarbete Sofia.docx (D53075357)
- Final Master's thesis Report. Aimable..pdf (D44656809)

The screenshot also shows the Windows taskbar at the bottom with various application icons and the system clock indicating 23:29 on 2020/04/21.