



‘The Forest is no longer ours’.

The controversial aspects of Participatory Forest Management in Kereita Forest



Authors

Susanna Camerlengo – gvl953

Radka Famfulova - wsh210

Caio Garcia - lqh901

Seifu Gebrehiwet Gebremichael - qms200

Supervisors

Ebbe Prag

Martin Skrydstrup

Declaration

By signing this document, we certify that all members have reviewed and agreed that this is the final version of the study report. Moreover, we declare that the research is our own and all sources of information have been duly acknowledged.

Signed in Copenhagen, Denmark
1st of April 2015

The Students

Susanna Camerlengo – gvl953

Radka Famfulova - wsh210

Caio Garcia - lqh901

Seifu Gebrehiwet Gebremichael - qms200

Abstract

The Forest Act 2005 introduced participatory forest management in Kenya. This has implications on the livelihoods of the communities dwelling in the proximities of forests. We thus wanted to assess the extent of this effects by conducting a case study in Kambaa, a village belonging to the Kiambu County, adjacent to the forests of Kereita and Nyamweru.

In our field research we used a variety of social sciences data collection techniques. We used these different techniques in order to enhance triangulation and data validity. And thus get an insight in the participatory management process in Kereita.

In our analysis, we followed a comprehensive and investigative approach to systematically answer each of our research sub-questions.. Accordingly, our findings show that there is a gap between what is stated in the Forest Act 2005 and in its implementation. The Findings show that the PFM seems somehow failed in the area because of the power struggle and conflict on benefits among CFAs. Moreover, KFS still remains the powerful decision maker about the forest. Nonetheless Kereita Forest is an important part of the community's livelihood, even if agroforestry practices are not possible due to the presence of elephants. Moreover the population cannot benefit from timber harvesting because the legislation requires that, in order to participate in the tendering, community members must be registered in a company with access to a saw mill. Thus, we found there is a poor enabling environment for the community to utilize the important forest products apart from fuelwood and grass.

Acknowledgments

First of all we would like to thank the SLUSE staff in both University of Copenhagen and Nairobi University for guiding, supporting and supervising us in classes and during the fieldwork. In line to this we are thankful to our supervisors Dr. Martin Skrydstrup (University of Copenhagen, Denmark) Dr. Ebbe Prag (Roskilde University, Denmark) and Dr. Thenya (University of Nairobi, Kenya). We also appreciate the SLUSE Coordinator Dr. Thilde Bech Bruun for her continuous updates and great coordination of the program beginning to end.

This field report is the result of a two weeks research trip in the Kiambu County in Kenya, about 10 days stay in the village of Kambaa adjacent to the Kereita Forest. We are therefore very thankful to all the members of the community who have welcomed and helped us during our fieldwork by answering many tiresome questions we posed to them. We are also grateful to the Key Informants for their willingness to participate in the interviews.

A special and warm appreciation goes to our interpreters and guides John Mburu and Paul Njehu, who spent long hours translating the whole interviews and helping us approach cultural differences of which we may not have been aware.

Our Kenyan counterparts, Mary Njeri and Harrison Simotwo deserve to be thanked as well. Their hard work and inside information has been of incredible value for our study and understanding of their country. Additionally, we are incredibly grateful to our two interpreters Mr. Paul and Mr. John,

The hospitality of our hosting families in the Kambaa Village was really appreciated, and made us feel at home. We hope our relationship with the family will go long, lasting beyond the short time we had with them.

Finally, we want to express our thankfulness and appreciation to KENVO and its director Mr. David Kuria. They made our field work more successful by providing important data and linking us with important key informants. We also appreciate their community based environmental and forest related activities. Last but not least, We would like to thank the Wangari Maathai Institute for Environment and Peace for co-hosting the program and Pauline and all the staff at the Green Belt Movement Langata Center for having welcomed us so carefully and warmly during our stay in Nairobi.

The very last appreciation, not in terms of importance, goes to Melanie Mason, our dear friend in Copenhagen, who supported our research by helping in the final editing of the report.

Table of Contents

Declaration.....	I
Abstract.....	II
Acknowledgments.....	III
Table of Contents.....	IV
Table of Figures.....	VI
Table of Authors.....	VII
Abbreviations	VIII
1. Introduction	VIII
1.1 Historical Background of forest management in Kenya	1
1.2 Study Area	1
1.3 Forest Management in Kereita	2
The Aberdare Range Electrified Fence	3
Kereita Forest Participatory Management	4
2- Problem Statement	6
2.1 Research Question	6
Research sub-questions	6
3. Rationale behind the analysis	7
3.1 Theoretical Framework.....	7
4. Methods and samplings	8
4.1 Methods applied.....	8
Key Informant Interviews.....	9
Questionnaires.....	9
Semi-structured interviews	10
Participatory Rural Appraisal.....	10
Participant observation, GPS Mapping, Forest and Village walks	12
Focus Group Discussion	12
4.2 A reflection on the methods not applied	13
4.3 Biases and Triangulation.....	13
5. Results.....	14
5.1 Community, Institutions and Natural Resource Governance	14
Preliminary data.....	14

Access to natural resources	15
Participation of the community in the forest management	15
Frictional dimension of the forest associations	16
Knowledge on forest regulations by community members.....	17
5.2 Livelihoods and Dependence on the Forest	18
The livelihoods of the Kambaa community	18
6. Discussion	20
6.1 Community, Institutions and Natural Resources Governance.....	20
6.2 Livelihoods and Dependency on Forest Resources.....	26
Conclusion	28
References	30

Table of Figures

Figure 0	Location of Kereita Forest	Page 2
Figure 1	Map of the Electric Fence around Kereita Forest	Page 3
Figure 2	Sampled areas around Kambaa	Page 8
Figure 3	Participatory mapping, initially one of the group members was asked to draw on behalf of the respondents	Page 11
Figure 4	Example of license to collect fuelwood	Page 14
Figure 5	Basic sources of livelihoods in Kambaa	Page 18
Figure 6	Women collecting fuelwood in Kereita	Page 19
Figure 7	Actors around PFM in Kereita	Page 20
Figure 8	Formation of the KICOFA	Page 21
Figure 9	The Chairman of KICOFA and KIFOMACO	Page 22
Figure 10	Income Generating Activities as one of the dimension of benefit sharing	Page 23
Figure 11	Good performance of tree plantations within the PELIS in Nyamweru	Page 27

Graphics credits:

Cover: Graphics by Susanna Camerlengo, photograph by Radka Famfulova
Graphic artworks in the report: SC= Susanna Camerlengo, RF= Radka Famfulova

Table of Authors

Sections	Main Author	Contributing Authors
Historical Background of Forest Management in Kenya	Seifu	All
Study Area	Radka	All
Forest Management in Kereita	Susanna	All
Problem Statement	All	
Rationale behind the Analysis	Seifu	All
Methods		All
Questionnaire	Radka	All
Semi-structured Interviews	Caio	All
PRA	Susanna	All
Participant Observation	Caio	All
Key Informant Interviews	Caio	All
Focus Group	Seifu	All
A Reflection on the Methods	Susanna	All
Biases and Triangulation	Susanna	All
Results	All	
Discussion		
Conclusion		
Editing and Formatting	Susanna	

Abbreviations

CBO- Community Based Organization
CFA - Community Forest Association
IGA - Income Generating Activity
GWC- Gatamaiyu Wildlife Conservancy
KENVO - Kijabe Environmental Volunteers
KFS - Kenya Forest Service
KII - Key Informant Interviews
KPFMP - Kereita Participatory Forest Management Plan
KFWCA - Kereita Forest and Wildlife Conservation Association
KICOFA - Kereita Integrated Community Forest Association
KIFOMACO - Kereita Forest Management and Conservation
KWS - Kenya Wildlife Service
PFM - Participatory Forest Management
PRA - Participatory Rural Appraisal
SSI - Semi-structured Interviews

1. Introduction

1.1 Historical Background of forest management in Kenya

Forest management in Kenya can be divided into three major historical categories; pre-colonial, colonial and post-colonial. ‘Each of these timeframes reflects the economic, social and political realities of the time’ (Mwangi 1998).

During the pre-colonial period (pre-1895), forest in Kenya was managed through the use of traditional systems. The Colonial forest management era (1895-1962) was a period in which many new interventions were introduced to Kenya which replaced the traditional forest management systems. One of the important milestones of these changes was the colonial government’s creation of a forest department in 1902. This led to the alienation of prior community-managed forests. Since that time, the forest department has controlled all the forests with in the country under the justification of conservation (Ogada 2012).

All of the colonial period laws and legislations were aimed at maintaining forest reserves for the purpose of providing user rights for timber by the colonial authorities’ These legal precedents were also implemented partly to preserve important water catchments, ecosystem and wildlife . The interests of local communities and their access rights to the forest were not a priority (Matiku Paul 2012).

In 1910, during the colonial period, an agro-forestry system (‘Shamba-system’) was introduced in Kenya. This system allows farmers to grow crops in the forest with tree plantations until the canopy closure (3-5 years); then they are able to shift to another plot. The system was banned in 1987 due to rampant corruptions in the system (Barrow et al. 2002). However, the result of the ban has caused unprecedented destruction of forest, especially in the late 1970s and 1980s. This has been blamed on the lack of legislation which is supposed to include the communities as part of the forest management within the country (Ongugo 2007).

In order to solve these problems, the government and other stakeholders have been developing a forest policy that includes the community in forest managing and receives some shares of the benefits from the forest. Hence, the government has approved the historical forest act of 2005. The forest act of 2005, according to article IV, section 46 (1) says that “communities that are the users of particular forests can be involved in the management of such forests only by forming Community Forest Associations (CFAs)” (*Ibid*: 3)

1.2 Study Area

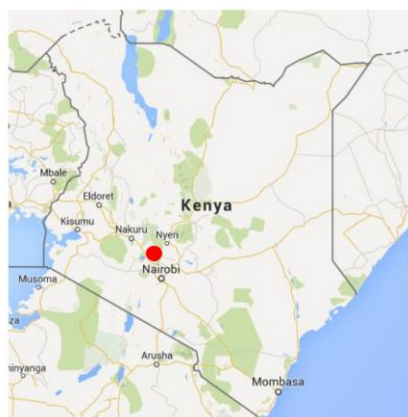
This paper is based on a case study carried out in Kambaa village in Central Kenya. The village is located in Kiambu County, adjacent to the northern border of Nairobi County. The area is characterized by hilly topography, and farmland. The county’s population is 1,623,282 in total (Kenya county fact sheets, CRA, 2011) with most predominantly depending on agriculture and in case of Kambaa, collecting forest products from the adjacent Kereita forest.

Covering 4,722.6 hectares in total, the forest forms part of the escarpment forest within the Upper Highland Zone, forming an extension of the Aberdare Range at an altitude of 1,800 meters above sea level. Aberdare range is a valuable ecosystem and provides a stable water supply to local communities (Massey et al., 2014). It lies within 1°03' and 1°09' South and 36°49' east. The forest is threatened by charcoal burning, forest fires, illegal logging, community encroachment through illegal grazing and cultivation, elephants, monkeys and an increase in population in forest adjacent communities. (KPFMP, 2010)

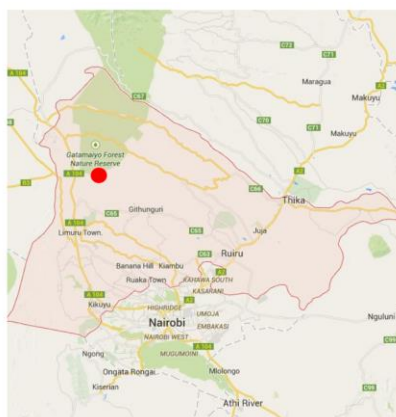
The geology was influenced by the volcanic activities within the Mount Kenya region, forming dissected ridges and valleys that are characteristic of this area. The soils are very fertile and well drained with a dark red-brown coloration. Most of the rivers and streams emerging from the area have sources in the forest. (KPFMP, 2010)

The temperatures range from 20°C in March/April to 12°C in July/August. The average annual rainfall is 1373 mm and up to 1409 mm in the Uplands Forest (Farm Management Handbook of Kenya vol. 2, 1982). There are two rainy seasons, the long rainy period occurring from April to June and the short rainy period occurring from November to December. (Massey et al., 2014)

Figure 0: Location of Kereita Forest. Source Google Maps



Kereita Forest in Kenya



Kereita Forest in Kiambu County



Kereita Forest and Kambaa village, spatial context

1.3 Forest Management in Kereita

The two main approaches characterizing the management of Kereita Forest are symbols of two different conservation ideas, which are not necessarily polar opposites. The older one is represented by the almost 400 Km long electric fence that encloses the Aberdare Conservation Area (see Fig.1), thus also surrounding Kereita Forest. The other one is represented by the community based participatory management which follows the directions of the Forest Act 2005. The two approaches are currently contributing in a synergistic way to the forest management of the area, though their effectiveness contains controversial aspects, as discussed further on.

The Aberdare Range Electrified Fence

Built during a time-span of 20 years, starting in 1989, the Aberdare Electric Fence was constructed as a conservation strategy in order to stabilize the human-wildlife conflict that affected the area (Butynski, 1999). The project was carried out by the Rhino Ark, an US-Kenya Charitable Trust, ad hoc founded in 1988. The initial aim was to help the KWS finance the enclosure of a salient area that contains the highest concentration of wildlife in Aberdare

(<http://www.rhinoark.org/>). The project was then expanded, eventually surrounding the entire Aberdare Conservation Area (766 km²). The fence has a height of 3.3 m and a cost of 20.000 USD/Km (Lamarque et al., 2008). An economic, social and environmental assessment of this conservation tool, was published in 2011 by the Biotope Consultancy Agency. This report shows an overall appreciation on the part of the adjacent communities who benefit from an increased food supply and personal security due to the impossibility of the large mammals trespassing and destroying crops.

However, as shown from our data, and discussed further on, there are some aspects related to the fence subject to controversy.

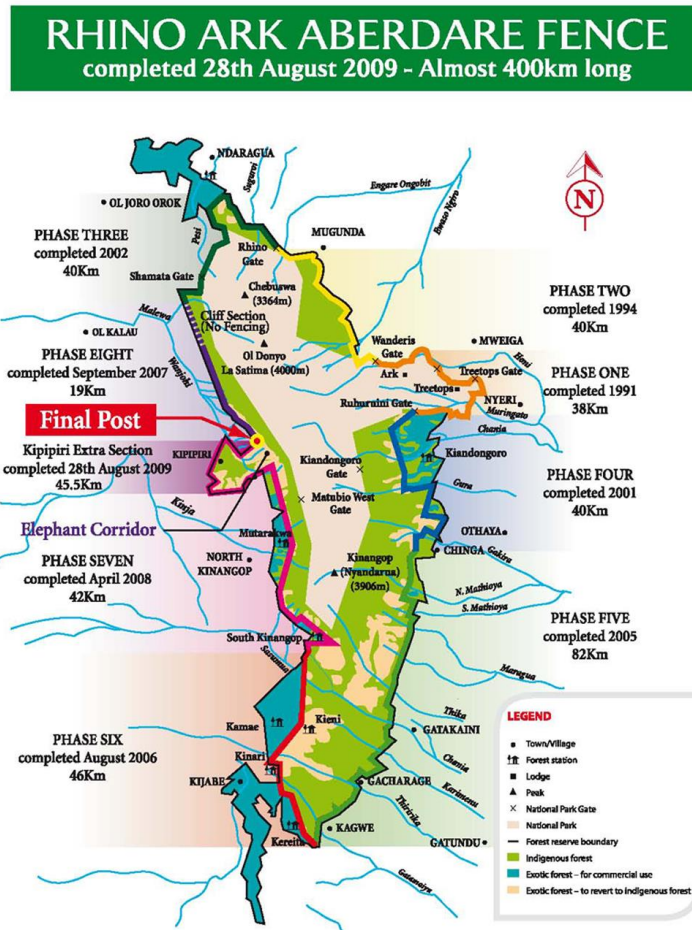


Figure 1: Map of the Electric Fence around Kereita Forest.
Source Biotope, 2011

Kereita Forest Participatory Management

Following the path traced by the Forest Act 2005, many forests in Kenya are now participatory managed through signed agreements between local Community Forest Associations and the KFS. The Kereita Participatory Forest Management Plan was signed in 2010 by the chairman of the Kereita Integrated Community Forest Association (KICOFA), Bernard Kamanu, and the Director of the KFS, David K. Mbugua. However, the development plan was taking shape even before the Act was officially signed, back in 2003, when collaboration between various stakeholders, among others KFWCA and KENVO (see KPFMP) began. The Ford Foundation and the UNDP financed the process with 600000 KES (KFWG, 2013).

The main objectives of the plan include the preservation of the area from the illegal activities that have been plaguing the forest (logging, poaching, over-collection of fuelwood, etc.) and the promotion of IGAs based on the sustainable exploitation of natural resources (*ibid.*).

As previously mentioned, the plan was implemented through an agreement signed by the official CFA community representative in the area, and the KFS. The **Kereita Community Forest Management Agreement** was thus been signed in 2009 also by Kamanu (KICOFA) and Mbugua (KFS), in the presence of the KICOFA's secretary and treasurer. The main objective stated is co-participation in the conservation and management of the 4,722.6 ha of the Kereita Forest Reserve, with an established duration of 5 years, meaning that it is currently starting the revision process. The structure of the forest management and the interactions among the different actors will be presented in the *Results* and in the *Discussion* sections, since they are related to some of the most important findings from our fieldwork.

To promote a better understanding of our research findings, an overview of the main actors around the community forest management of Kereita is provided in the **table 1** next page:

Table 1: Actors in the Kereita Forest management.

Kenya Forest Service (KFS)	The Kenya Forest Service is the Kenyan Governmental Agency created in 2007 following the prescriptions of the Forest Act 2005, 'to conserve, develop and sustainably manage forest resources for Kenya's social-economic development' (Ref. www.kenyaforestservice.org/)
Kereita Integrated Community Forest Association (KICOFA)	The KICOFA is the only official CFA currently present in Kereita. It was founded in 2009 with the aim of easing the conflicts between the three existing CFAs (KFWCA, KIFOMACO and GWC) in addition to implementing the directives of the Forest Act 2005 which prescribed the existence of one CFA per forest. As stated in the report from the joint CFA meeting held in 2009, the constitution was condoned by the 3 CFAs who convened to shape the so-called CFA 'Umbrella', by contributing both financially and in terms of members. In the by-laws it is in fact written, that all of the members of the KICOFA must also be members of any of the 3 existing CFAs. The KICOFA was the only CFA entitled to sign agreements with the KFS.
Kereita Forest and Wildlife Conservation Association (KFWCA)	The KFWCA is among the oldest CBOs in Kereita. It was founded in 2000 (and registered in 2003) by community members guided by the KFWG in order to sensitize the community on the new forest management approach that was at the time being discussed in Parliament (EMPFAFORM, 2006). The association was initially formed by various stakeholders, including shamba system farmers, water harvesting groups, bee-keepers and electrical fence groups (<i>ibid.</i>). According to the same source, and as reflected also from our research, KFWCA has been very active in the area through various projects aimed at the improvement of local livelihoods and forest conservation. Many of these projects have been conducted in partnership with international and local organizations, like UNEP and KENVO. In 2009 the KFWCA entered the KICOFA, formally becoming a Forest User Group.
KIFOMACO and GWC	The Kiirita Forest Management and Conservation association, and the Gatamaiyu Wildlife Conservancy, are the other 2 CFA's who merged under KICOFA.
Kijabe Environmental Volunteers (KENVO)	KENVO is an organization started back in 1996 with the objective to inform and educate local communities about the needs of conservation and to promote environmentally-friendly businesses. They operate in the Kijabe area of the southern slopes of the Aberdare Range. The main office is located adjacent to Kereita Forest where, just like in the whole Kikuyu Escarpment, they are trying to combat the degradation of the forest. Some of the main activities of KENVO consist of tree nurseries, ecotourism, bee-keeping, or fish farming, though they are also involved in other areas such as community workshops, mentoring local youth groups, or youth involvement in the Canada World Youth international Exchange program.

2. Problem Statement

Forests in developing countries are often considered as a form of “natural insurance” that rural communities hold against hardships (Pouliot and Treue, 2013). Thus management practices and policies which affect such natural capital have indisputable effects on the livelihoods of adjacent populations.

In recent years, major changes have occurred in Kenya’s forestry legislation, which shifted from a deeply centralized to a more participatory approach. Particularly of interest, is the renewed promotion of community-based agro-forestry systems, like the shamba\PELIS (Plantation Establishment and Livelihood Plantation Establishment and Livelihood Improvement Scheme).

However, there seems to be a very few studies which investigate the effects of this policy change on the livelihood of rural communities. Therefore, we would like to contribute in filling this knowledge gap by conducting a case study in the Kambaa village, in Kiambu County. The population of the area lives in close proximity to the Kereita forest, on the southern part of the Aberdare Range. This range is a protected area which has become famous for its 400 km electric fence which prevents human-wildlife interactions. We wanted to investigate the relationship between the adjacent community and the forest, the degree of their dependency on the forest and to what extent recent forestry policy changes (Forest act 2005) affected their livelihoods.

2.1 Research Question

What are the effects of the Forest Act 2005 and its implementation impacts on the livelihoods of the communities settled around the Kereita Forest area, in the Kiambu County?

Research sub-questions

- 1. In which way is the new participatory forest management approach implemented among the Kereita communities?*
- 2. What is the level of participation of the local community in the forest management, following the implementation of the Forest Act 2005?*
- 3. To what extent is the community dependent on the forest?*
- 4. What are the effects of the Forest Act 2005 on the livelihoods of the community adjacent to the Kereita Forest?*

3. Rationale behind the analysis

3.1 Theoretical Framework

The interactions and relations between natural resources (forests) and people are mediated through institutions. Institutional arrangements shape access to and control of natural resources, and are fundamental to understand the patterns of different stakeholders' interests (Matiku Paul 2012). In this paper, we originally wanted to use the Ladder of Participation framework that was first described by Arnstein's (1969) and again by Cornwall (2008). The aim was to identify the different stakeholders within the Kereita forest and identify their role in the decision making process. The data collected would then be used to the participation level of said stakeholders.

Nevertheless, after a thorough analysis we decided to abandon this approach and instead use Agrawal & Ribot's (1999) Power, Actors and Accountability framework. This framework can be used to assess how decentralization functions in resource management. Allowing for an explanation of the dynamics in the decision making processes related to the Kereita forest. The authors divided Power broadly into four hierarchies: *1.The power to create rules and modify old ones, 2.The power of decision making about how resources are allocated or used, 3.The power to implement and insure compliance to the rule and 4.The power to adjudicate disputes.*

The actors are the stakeholders of the resource being management and benefit from sharing, and accountability is relational but it is the actors' responsibility on their action and they are accountable to their constituents. So, we used this framework to analyze how the actors like KFS, CFAs, CBOs, Village leaders and the Community are exercising their powers and accountabilities in managing and benefiting in Kereita forest by comparing what is written in the Forest act 2005 and the data we collected in the ground. We also found theory of access to clearly identify what is the right of the community on the Kereita forest and what is their ability to access it because '*access right* is different from *ability to access*' (Ribot & Peluso 2009). As it is argued in the Theory of Access, it is important to see the larger contexts when analyzing access to resources because; it is not only the policy environments that give the right of access, but also the platform on the ground and the 'ability' of the community to exploit what is stated in the policy. By doing so, we use this framework in our power structure analysis around the management of the Kereita forest, in order to examine who has not only access right but also the enabling environment and 'ability' to participate in the management and get benefits out of the Kereita forest.

4. Methods and samplings

In this paper, we made use of a mixed-method approach to collect data from different sources in order to obtain more comprehensive answers to our research questions. The data collection was facilitated by the local guides provided by the SLUSE program, and their skills proved to be helpful in accessing the different sources necessary in our research. The choice of adopting a mixed-method approach, was made in order to increase the scientific validity of our data, enhancing the research triangulation at the same time (See the *Biases and Triangulation* section).

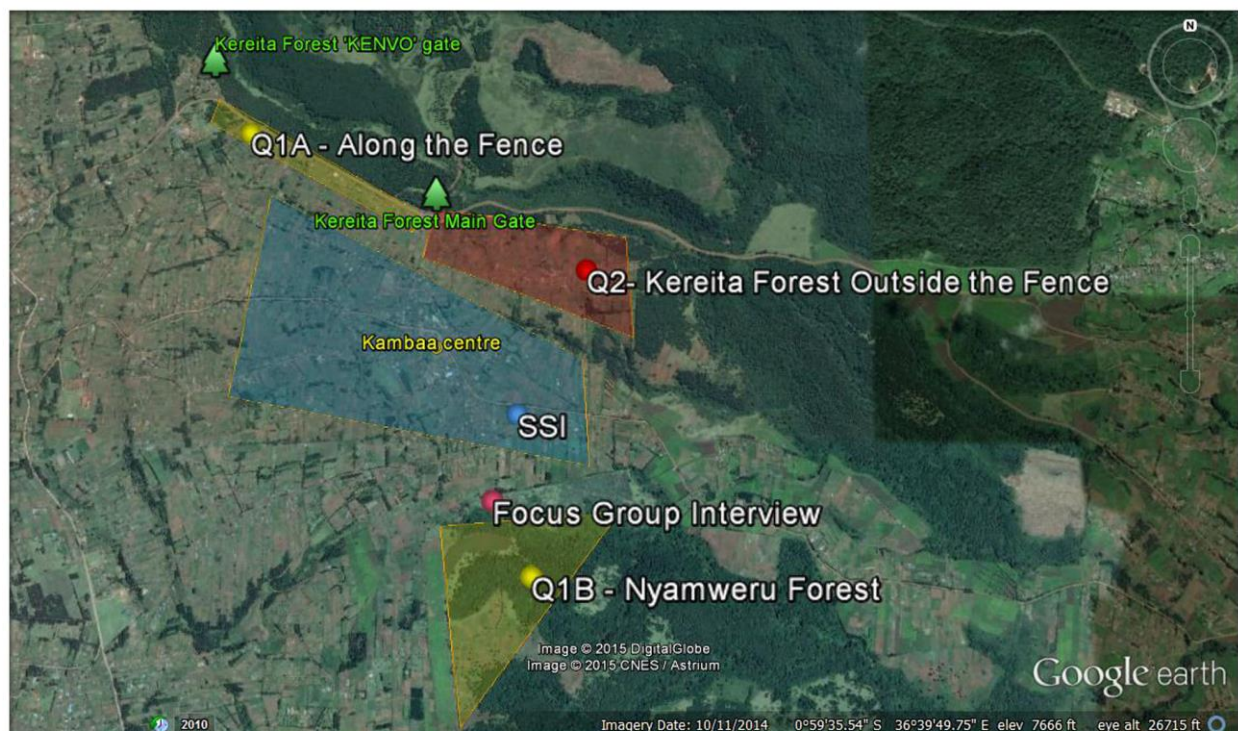


Figure 2: Sampled areas around Kambaa. Q1A, Q1B and Q2 are areas surveyed through questionnaires, SSI indicates the area where most of the semi structured interviews took place. Source: Google Earth

4.1 Methods applied

The methods applied are described providing a textbox where the strengths and weaknesses of their application during the fieldwork is highlighted.

What worked and what did not work – KII

The team has been satisfied with the conduction of the interviews, we could get hold of almost all our planned respondents (eight out of eleven). The reasons why we didn't conduct all the planned KII are either because we judged some of them being not any more relevant to our research, or because of the impossibility to reach the desired person. Although small changes were made, due to sudden new opportunities emerged, none of these setbacks affected negatively the data. The semi structured approach contributed substantially for a better understanding of the Institutions involved on the forest management and the historical development of the forest use.

However, it is important to note that the group experienced some difficulties in getting hold of some of the desired respondents. One morning was completely wasted because of no-shows. Nevertheless, we interpreted that as a will to not reply to our questions, suggesting the existence of hidden aspects that the person didn't want to reveal.

Key Informant Interviews

Key informant interviews were done in order to obtain a more precise information about the background of the institutions involved in the forest management, the general trends in the use of the forest, the changes and the status of implementation of the new policies. These interviews also followed a semi structured approach, for the reason explained in the SSI section. The focus of these interviews were people with higher level of involvement on the forest management or the regional politics; a list is provided in the Appendix under the A2. *Table of Methods Applied* section.

Questionnaires

In order to generate a larger amount of quantitative data, and obtain general information on the field-site a questionnaire survey was conducted with the total number of 26 respondents. This was done to obtain more specific data on the way the forest is accessed, its usage, and the relation between the local population and the forest. A purposeful sampling strategy was applied in order to choose areas for further investigation. Three specific areas were investigated as shown on **figure 2** page 8: one in close

What worked and what did not work – Questionnaires

Since the questionnaires were developed in Copenhagen before get to the field, due to time constraints and low cooperation among the group, the results were not as good as they could be, if they were redesigned based on information obtained while being in the field. When revisiting the questionnaires to analyze the data, it is clear that some of the questions did not lead to any useful results. The group should also have done some trials in order to standardize the way the questionnaires were conducted and the data collected. On the positive side, the questionnaires provided us with quantitative data in important subjects in relation to forest management and satisfaction.

proximity to the Kereita forest fence (Q1A), second further from Kereita forest, in proximity to Nyamweru forest (Q1B) and third outside the Kereita forest fence (Q2). The number of questionnaires performed was restricted due to limited time on the field-site.

Semi-structured interviews

The semi-structured interview method was chosen due to its controlled flexibility during the fieldwork (Gilham 2000). Since different directions can be taken, adding new questions, moving

What worked and what did not work – SSI

Due to the interesting aspects that were emerging during the fieldwork, the group did not always follow the same patterns during the semi structured interviews. This fact, as reflected in retrospect, generated big differences in the type of data collected from the different interviews, creating some difficulties for the analyses and the triangulation of the information. Even though there was variability of the data collected, the information from the interviews is valid for our research, since relevant topics were addressed and new information following certain patterns were also observed

around different topics and having the opportunity to gather new unexpected information. Moreover, the use of SSI allows the interviewer to explore deeper aspects of a respondent's opinion. Differently from what was planned before the fieldwork, the semi structured interviews were done following random sampling. The main reason for this change was the lack of time to select the respondents from the questionnaire analyses, together with sudden opportunities to conduct unplanned interviews, that we decided to take.

In total, 14 interviews were conducted, with respondents ranging from 24 to 67 years old, composed by 6 men and 8 women. The interviews were facilitated by the 2 interpreters (guides).

Participatory Rural Appraisal

The PRA session has been planned together with members of the community, right from the first day of our arrival in Kambaa. The 'games', as we presented to the population, were conducted at Mama Nelly's, our group-work headquarter, since the community lacks in an accessible place for common activities. The participants were 6 women, summing 8 with our host Mama and the community leader, although a larger share of the population was invited. However the number revealed to be acceptable, seen also to the time constraints (the activity was scheduled at 3 pm to allow every participant to dedicate to their daily activities).

What worked and what did not work – PRA

As Krantz (2001) recalls, appraisal methods don't fully realize their potential, if not conducted during a sufficient amount of time. The author thus argues that "continuous dialogue and critical reflection" are determinant in order to allow the respondents to properly "express their views on crucial issues", and this activities require time. Therefore, even if a few interesting data were collected, we could not be fully satisfied with our PRA session.

However, when asked to give us a feedback on the activity, the respondents showed a high appreciation for the ranking exercise: "At least now we have a slight idea of who might be managing the forest" said one of the women, adding that thanks to the PRA, now they had some "food for thoughts" about the forest governance

A **Participatory Mapping** exercise was meant to give us an insight of the relation between the Kambaa population and the forest, showing the location of the households and the paths

followed by the different participants to reach the forest, in order to assess its accessibility and learn more on the patterns behind such human-environment relation.

In order to gain useful information about the community's perception of the power structure governing the forest, we planned a **Ranking** exercise. Here we asked the participants to rank from 1 to 10 a list of 9 people and institutions, according to the respondent's opinion of the influence each of the 9 actors have on the forest management. The activity seemed to be more exciting for the respondents, and in order to obtain accurate results and reduce the possible biases, we adopted the following precautions:

- The better educated people were given the last turns, in order to prevent the other participants from being influenced in their choices;
- The respondents were told that there were no right or wrong answers, but we were interested only in their opinion;
- Finally, we tried to make the participants at ease, telling them to take their time to think before ranking, since we wanted to obtain genuine outcomes, not answers given in a hurry.



Figure 3: Participatory mapping, initially one of the group members was asked to draw on behalf of the respondents

Participant observation, GPS Mapping, Forest and Village walks

The objective of the combination of these methods, was to create a more detailed view of the relationship between the community and the forest, and how the policy changes affected both. It

What worked and what did not work – Participant observation, GPS mapping and Walks

Initially, transects walk were planned as part of the participant observation and mapping. However, due to lack of time, the group agreed that the random walks were enough, since they provided us with useful data. A positive aspect of this methods was the map the group was able to create, which was helpful for us while planning the different areas to be sampled for the questionnaires.

was the first method used once on the field, generating a comprehensive view of the area, of the community practices in relation to the forest, its physical characteristics and forest management. Through the time we were at the field, we went in two walks on the forest and one main walk around Kambaa village, both using a GPS device in order to observe the tracks and the data collected with different perspectives. The walks were followed by the

local rangers (in the forest), the interpreter and the community leader that provided us with useful information about different aspects of the forest.

Focus Group Discussion

Originally, focus group discussion as a data collection technique was not in our plan (synopsis). But as a matter of chance, we found a group of farmers, organized as Forest Users Group, who were having a meeting. Thus, we decided to have a focus group discussion with them. The group was consisting of 4 women and 2 men. We made a brief introduction about the objectives of our presence in the area and we posed some topics for discussion. Some of the topics discussed were 'the meaning of the forest for the livelihood of the community and to the group members', 'how the group is using the forest', 'why having a users' group is important', 'how they compare the fenced Kereita forest with the unfenced forest called Nyamweru'; in which the group were practicing the "PELIS-Shamba" or agroforestry practice, 'how they perceive or understand the different actors like KFS, CFAs, KENVO etc in the forest management in the area' and so on. From the discussion, we could gather very insightful information which we used to triangulate the validity of our data collected using the other techniques.

What worked and what did not work – Focus Group

It could be more valid and reliable data had we been conducted the focus group discussion with more than one group. A rules of thumb in focus group discussion are: "(a) use homogeneous strangers as participants, (b) rely on a relatively structured interview with high moderator involvement, (c) have 6to 10 participants per group, and (d) have a total of three to five groups per project"(Morgan 1997). But we couldn't made all because of time constraint and difficulty to get people in group. However, it was an opportunity for the group to apply the techniques which was not in the original plan. Because, it helped us to get the group impressions about the forest and livelihood of the community

4.2 A reflection on the methods not applied

The data collection helped us to reflect on our research strategy. The team has been generally satisfied with the ideas proposed in the synopsis, and their applicability on the field. The research question revealed to be relevant, and the methods planned were actually useful in order to gain the information we expected to get from the fieldwork. A specific discussion of the effectiveness of their application, has been already provided under the section relative to each method. However, we need to acknowledge that the application of some natural sciences methods, would have probably completed our research.

Forest Assessment

Considering the topic of our research, it would have been interesting investigating also the environment protection outcomes of the policies, in order to express a more complete judgment of their effectiveness also from the conservation side. This is even more true when we take into account some of the findings from our observatory walk in the forest, when we could witness the bad performance of indigenous tree seedlings in some of the re-plantation areas (more in the *Results* section).

Soil sampling

Since Kereita Forest has been inhabited until the 80's (according to some of our respondents), it could have been interesting analyzing the soils where the shamba system was practiced during that time. In this way we could have a scientific back up to the considerations about restoring the shamba systems in the area within the fence (more in the results section).

Box 1: *Description of potentially useful methods not applied during the fieldwork.*

4.3 Biases and Triangulation

Among the benefits derived by the application of a mixed-method approach, triangulation is the most recurrently cited by social scientists (Bryman, 2006). Through the fieldwork we could confirm this statement. And moreover, we witnessed the truth behind Angelsen et al. (2011) words: “field research enables corroboration or confirmation of data via triangulation”. By confronting the information obtained, for example through Key Informant Interviews and Questionnaires, we could actually estimate the reliability of our informants, while seeking confirm to our guesses at the same time. Another good way of triangulating our findings was through the participant observation and the collection, in loco, of pictures and soft copies of important documents. Finally, literature research is an important source of data to triangulate the research findings with. In fact it provides the opportunity to confront our findings and guesses with previously published works by other scholars or institutions.

Two situations could have provided the main biases to the research: not having tested our questionnaires and interviews guidelines in advance, and having chosen a main semi-structured approach for the interviews. This could have resulted, in some occasion, in a “driving” of the answers, although we were always careful in trying to avoid that. Another possible element that might have affected our research, was the need to make use of a translator. Even if in many cases, most of all for the KII, we could conduct them in English, often the translator was indispensable, and that made impossible to have a full control of the interview.

However, the frequency of similar answers on a same topic among the respondents, made us consider the validity of our work acceptable.

5. Results

The main findings from our data collection are presented in two different sections according to the research sub-questions. This methodology has been chosen in order to avoid repetitions and facilitate the reader in following our analysis.

5.1 Community, Institutions and Natural Resource Governance

Analysis of the empirical findings to address the following research sub-questions:

- 1) *In which way is the new participatory forest management approach implemented among the communities in Kambaa village?*
- 2) *What is the level of participation of the local community in the forest management, following the implementation of the Forest Act 2005?*

Preliminary data

The data collection on this topic started with a participant observation walk in the village to understand the contextual setup of the area. Kambaa village is adjacent to both the fenced and unfenced parts of Kereita, and to an unfenced forest called Nyamuweru. Another interesting aspect was the historical background of the area we were introduced by the elders. We were told that before the fence the community used to grow crops inside of the forest, and human - animal conflicts were a serious problem as the elephants were destroying the crops. The respondents also argued that there was uncontrolled use of the forest and degradation. Again they explained that the community is “happy” about the fence because it helped them ease the human-animal conflicts. But we found very difficult to accept the notion of “community’s happiness” about the fence, due to the controversial aspects it implies (how to measure happiness, from which point of view, etc...). Finally, an important element emerged, the



Figure 4: Example of licence to collect fuelwood

idea that the community, even if happy about the fence, might prefer having still access to farming land in the forest.

Access to natural resources

Since the assessment of the accessibility of natural resources for community members is also a scope of our research, we collected data on the regulations regarding that aspect. The walks and the interviews contributed to verify the implementation of the prescriptions. As the Forest Act says, the forest must be accessed by community members that are part of a CFA or a Forest User Group. The management plan requires the payment of a monthly fee for the issue of an access permit, depending on the activity to be undertaken (e.g. 100 KES/month give access to the forest 5 days a week once a day to collect fuelwood, another 100 KES/month must be corresponded to graze a cow, and a lower amount is due per sheep.) A part of the monthly fee should go to the umbrella-CFA, but what we could witness is that it is not always the case. Moreover there is ambiguity regarding the possibility to redistribute the 10% of such revenues to the CFA members. This is a fact mentioned by some of the respondents, but we couldn't triangulate it. However the walk showed that there are ways to bypass the law. First of all we witnessed that the fence presents damaged points, indicating ways for illegal trespassing. Then the KFS officers who guided us in the forest stated that they are actually monitored by people engaged in illegal activities. That is, there are ways, by using a smartphone, to control the position of the rangers and thus find the right moment and place to engage in some illegalities. We could actually witness, during our first walk, an on-going illegal logging activity, undertaken because the "criminal" knew that the officers were busy in guiding us. After the interview with the same officers we found out that the majority of the illegal activities within the forest are undertaken by young people, and this aspect will be better analyzed in the following section.

Participation of the community in the forest management

The community's involvement in the forest management of Kereita has been analyzed based on two aspects: the citizens' level of awareness about the forest policies and their ability to raise their voice about the forest management. On this regard we also tried to analyze the accountability that the CFAs held within the community members, since, as Agrawal & Ribot (1999) state: "representation and accountability are critical if devolved powers are to serve local needs efficiently and equitably". From the documents accessed and from some of the KII we got an overview of The Forest Act 2005 prescriptions on the topic. The Act dictates that community members can participate in forest management through CFAs and signing a management agreement with the KFS. Originally 3 CFAs were established around the Kereita forest independently namely KFWCA, GWC and KIFOMACO. However, due to the recommendations of the Forest act 2005 (one CFA in one Forest) the 3 CFAs were forced to merge and establish an 'umbrella-CFA' called KICOFA in 2009. Accordingly, the PFM in Kereita was implemented through a PFM Plan signed by KFS and KICOFA. The KII highlighted an important

controversial aspect related to that: the chairs of the CFAs are always occupied by the same people. This aspect has been interpreted as a threat to the representativeness of the elected members of the 4 main organizations, and induced us to think about accountability issues within them. The membership of the different user groups is open to every member of the community, however it is still unclear the way the “normal people” can access the elected boards, since apparently there is a very static system of powers. Moreover some of the respondents showed reluctance to express their opinions because they felt that their voices were ignored. That finding echoes to Cornwall (2008) when the author states that “*community exclusion may result from failure to make spaces for the participation of less vocal groups*”. The inability, or unwillingness, of the community to express their voice on forest management, could thus be an evidence of a low level of participation in it.

African Forest Lodges in Kereita: An Example of Income Generating Activity Involving the CFAs

A project is planned in Kereita, promoted by African Forest Lodges, which has been awarded with three licenses from KFS to build a lodge, SPA, visitor center and conference center, together with the promotion of ecotourism activities. There are many partners involved on the creation of the lodge and among them KENVO, an *ad hoc* created community based investment company called Lari Investment Company Ltd, and KWFA of which African Forest Lodge is a fully paid member. The community participation is promoted through the selling of shares: each share will cost 10 KES and the minimum amount sold is 1000 shares (10 000 KES). The community involvement also comes from a pledge done by the African Forest Lodges that at least 75% of the staff will come from the forest adjacent villages, for both male and female in equal basis. The management plan states that over 1 000 000 KES will be injected in the communities only through salaries. Furthermore African Forest Lodges will promote the use of KENVO forest guides and camping sites, however, there are no clear mention of the benefit sharing between these two partners. An interesting point on the management plan is the controversial affirmation that KWFA is not only a CFA but the umbrella CFA “representing all the 39 community association that exist in the area”. We interpret this data as the clear evidence of conflict of interest among the different CFAs, with the real umbrella – CFA that appears to have no role at all in the management of the forest and the activities undertaken within.

Box 2. An example of controversial IGA conducted in Kereita

Frictional dimension of the forest associations

Furthermore, our fieldwork highlighted some possible leadership conflicts between the 4 CFAs. A part of this fact, one of the leaders interviewed casted some doubts on the transparency of the electoral process in the ‘umbrella’ CFA and both the leaders interviewed referred to the community members as “my people” inducing us to think at a conflicting dimension (‘my’ against ‘their’). We tried to triangulate this data by asking members of other associations and they revealed that the CFAs are not working as according to their constitution (as per the electoral process, the inefficient internal monitoring system, the promotion of activities, etc.).

An evidence of this grey zone is found in the two Eco-Tourism projects planned in the forest. One (an eco-camp) involves one User Group that refers to the KICOFA and in which the leader

of KICOFA (and of KIFOMACO) is personally involved as a “guide” (his words) for the young people promoting it. The second one proved to be the key to clarify the grey aspects around the conflicts on leaderships and the benefit sharing from Income Generating Activities in the CFAs present in Kereita. The detailed findings on the topic are provided in the **box 2** on page 16.

Knowledge on forest regulations by community members

About the community awareness of the forest policies, we found that only 9 people out of 14 have a knowledge about any forest regulation, but in some cases this is limited to basic rules, like “do not cut tree” or “collect only dry wood”. Apart from the key informants, the community members have no idea about the Forest Act 2005, although they are aware of some of the implementations (e.g. possibility to form a forest user group or association). Some of the SII respondents gave controversial answers saying that they don’t know about policies but they are members of forest user groups. This information in our opinion, is an evidence of the low awareness about forest policies among the community adjacent to Kereita.

Actors	Scores											Average	Rank
KFS	10	10	10	10	10	10	10	10	10	10	10	10	1
KWS	9	7	9	9	8	9	8	8	9	7	8		2
KENVO	8	8	2	7	6	8	6	6	9	6	7		3
COUNTY	4	3	7	3	9	7	9	5	8	8	6		4
CFAs	7	4	8	8	7	9	6	7	7	5	6		5
COMMUNITY	2	5	3	5	5	5	7	5	5	9	5.5		6
CHIEFS	5	6	5	6	3	1	3	3	2	2	3.5		7
TIMBER FIRMS	6	2	4	4	2	4	4	1	4	1	3.5		7
CBOs	3	9	6	2	4	3	2	4	3	4	3.5		7

Box 3: Results from the Ranking activity, showing how KFS is unanimously still considered by the respondents the most powerful actor in the forest management

Moreover, 77% of the respondents to the questionnaires, and 100% of the participant to the PRA activity, identified KFS as the main manager of the forest. Among the respondents to the SSIs, 3 people out of 14 declared to have been previously members of a CFA, but decided to drop it either because of no-benefit gained, or because of the possibility to access the forest directly through the KFS. These elements are coherent with our hypothesis of distrust of the community in regard to PFM.

Summarizing the findings in regard of the implementation of the PFM approach in Kereita (our first and second research sub-questions) the most important result is the fact that community members cannot really participate in the forest management as introduced by the Forest Act 2005. This is due to the weak performance of the CFAs (as above discussed), the strong presence of the KFS and the low voice of the community (both due to members’ unwillingness to express

their opinion, and to the difficulty to be heard from the leading boards). The impression we got is that PFM, as promoted by the Forest Act 2005, is still left on the paper only.

5.2 Livelihoods and Dependence on the Forest

Analysis of the empirical findings to address the following research sub-questions:

- 3) *To what extent is the community dependent on the forest?*
- 4) *What are the effects of the Forest Act 2005 on the livelihoods of the community adjacent to the Kereita Forest?*

The livelihoods of the Kambaa community

The data collection on the topic started through the use of both SSI and Questionnaires, for a total of 40 respondents. The majority of the respondents (82%) are farmers, but not everyone owns a farm. 32.5 % of the interviewees declared that they are renting shambas. This aspect is inline with our findings regarding landlessness as an ever-growing issue in the area (See the Discussion section). However, all the people interviewed in the sampled area adjacent to Nyamweru forest (4) are undertaking PELIS activities (Ref. figure 11 on page 27). They have been given shambas to cultivate in the forest while planting and taking care of indigenous trees. However, since it is forbidden to harvest indigenous trees, when the forest will be totally replanted there will be no more land available for community members (and we interpret this data as a frictional element between the need to preserve the environment and providing a livelihood to the citizens).



Figure 5: Basic sources of livelihoods in Kambaa: maize, potatoes, sukumawiki (kale)

of the forest, suitable enough to host the whole of the elephants and leave the rest of the forest ready for agroforestry practices. However the only attempt made so far to drive the big mammals there, failed and was never tried again because of unclear reasons.

Regarding the collection of forest products, the whole of the respondents who declared to access the forest on a daily or weekly basis, indicated fuelwood being the main product collected from it. According to the Forest Act 2005 and to the interviewees, only dried, fallen or pruned wood is collected.

The second most collected product (60% of the respondents to the questionnaires) is grass used by the community in two ways: free grazing and cut and carry. One of the most important findings under this topic is that among the landless people 10% access the forest to graze cattle, and 25% to collect fuelwood. In our opinion these are the community members most reliant on Kereita forest, since it represent their main source of livelihood. Finally, none of the respondents declared to have access to forest timber, even if timber is the main building material in the area (finding from the personal observation) and the most lucrative product collected from the forest (according to the interviewees). The KIIs showed that it is due to the legislation, which states that in order to participate in the timber tendering, community members must organize themselves in companies and have access to a sawmill. However, when asked on the possibility to enter in partnership with an existing sawmill, instead of establishing a new one, the leader of the KICOFA



Figure 6: Women collecting fuelwood in Kereita

surprisingly replied that they never thought about that. In our opinion this could be an evidence of the scarce commitment that the leading boards of this community based organization have towards the improvement of the livelihoods of the same community members (even if this is one of the goal of the association, as per its constitution). It is also important to remark that both the impossibility of harvest the forest timber, and the focus on the plantation of indigenous trees (which is anyway a positive tool for conservation) are indicated by some of the respondents, as a threat for the future generations. As put from one of the interviewee: “Our children won’t have any wood to build their homes”.

About the positive impacts of the Forest Act 2005 we must mention again that theoretically there are benefits derived from the membership to a forest association or user group (as promoted by the Act) by engaging in Income Generating Activities (IGAs) within the forest. One of the main IGAs undertaken by the respondents is represented by tree nurseries. Theoretically this represents a source of living through the selling of the tree seedlings. However we witnessed that in some cases there is not much to gain, since the institutions who buy the seedlings for plantation establishment don’t buy from the small forest user groups. In our opinion this represents a weakness in the implementation of the forest policies, and we hope that this gap could be filled in the future. Another IGAs present in Kambaa is the bee-keeping, and this

actually helps someone to improve their livelihood through the sale of honey or beehives (but only for the members of some groups or associations).

6. Discussion

The data collection revealed to be the construction of a mosaic, where after each method applied we collected new fundamental pieces. Such 'tiles' contributed to form a comprehensive picture of people, facts and dynamics linked together in a spatial and temporal dimension. In order to disclose this picture to the eyes of the reader we followed the structure presented in the *Results* section, dividing the discussion in the two topics of forest management and community livelihoods. Highlighting the different aspects and elements that provide answers to the 4 sub-questions we trace the path to the conclusion, finally answering our main research question: *how are the national forest policies impacting the livelihoods of the community adjacent to Kereita forest in Kambaa?*

6.1 Community, Institutions and Natural Resources Governance

The importance of *community* in this report, and a lacking clear definition of the term in the Forest Act 2005 created the need for us to determine what exactly is meant when we refer to "community". Without clarifying this, we may be unable to evaluate aspects such as community

participation, in a correct and accurate way. With that said, it is essential to note, as remarked also by Agrawal & Gibson (1999), that community, is a heterogeneous group of people, with different characteristics, interests, and backgrounds who are linked together by social ties and are living and mutually involved in the same geographical area. And as the above mentioned authors suggest, in order to

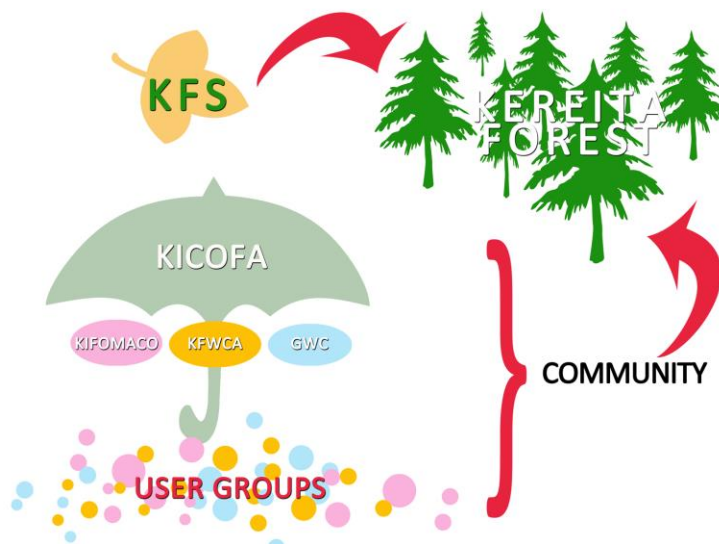


Figure 7: Actors around PFM in Kereita. The three pre-existing CFAs should have been dissolved into the big 'umbrella-CFA' in 2011. Our data show that this actually never happened. Furthermore, according to the leaders of KIFOMACO and KFWCA, each forest user group must be (and actually is) registered through one of the CFAs. Graphic work by SC

understand the role and position of the community in the context of conservation, it is better to focus on the actors, especially institutions, and their interests, analyzing their roles and interactions.

The point of departure of our discussion is actually the answer to the first research question: in which way is the PFM approach implemented in Kereita? The Forest Act 2005 states that the community participation in the forest management must be realized through an agreement between the KFS and an approved local CFAs. Thus the 2011 KFS - KICOFA agreement presented in the introduction, is the fundamental tool through which participatory forest management is implemented in Kereita. According to this agreement then, the two main actors on the stage of PFM in the area should be KICOFA and KFS. Our data though, show a different picture.

After the constitution of KICOFA, the three CFAs in the area should have been dissolved becoming simple user groups, thus referring to the KICOFA (also called the ‘umbrella – CFA’) as the only authorized association to participate in the conservation and management activities. But our data indicate that the dissolution never took place. Moreover, the leaders of KIFOMACO and KFWCA during the interviews clearly stated that the

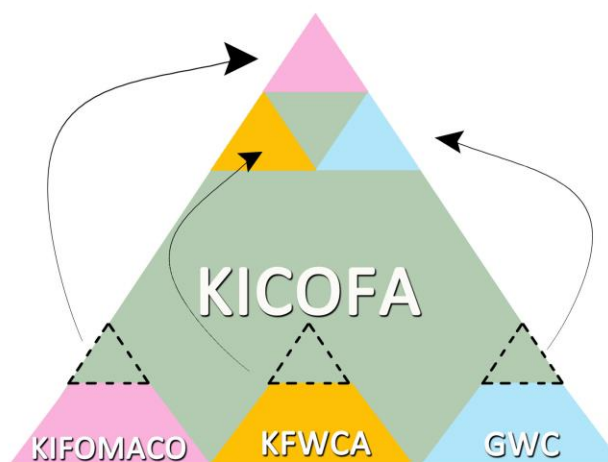


Figure 8: Formation of the KICOFA from the three existing CFAs. Graphic work by SC

Forest User Groups of the area must be registered in any of the three CFAs. But why should it be like that, since the three old CFAs, according to the legislation, should have become their selves simple user groups? Many pieces of the above mentioned mosaic initially didn't fit. Thus we decided to look at the picture from another perspective. We started to investigate the mechanism that led to the formation of the big umbrella, while assessing who were actually the people occupying the chairs of these co-existing 4 CFAs. Fig.8 shows the mechanism through which the KICOFA was formed, highlighting the fact that the same leaders of the three old CFAs actually were elected on the high chairs of the integrated one (KFWCA's leader as the treasurer, the one from GWC as the secretary, and the chairman of KIFOMACO is now also occupying the chair of the KICOFA). In addition to that we need to mention that both the two leaders interviewed stated that they have always covered the same position in their respective association, and so far also in the umbrella one. Here comes another controversial element. Our results show that there seems to be no agreement on the frequency and effectiveness of both the Annual General Meeting (AGM) of KICOFA and the internal elections. The bylaws states that the AGM is the “supreme organ of the association”, but there are discordant opinions on its effectiveness. The only element

that we could triangulate is the fact that the same people seem to eternally occupy the same chairs.



Figure 9: The chairman of KICOFA and KIFOMACO after the interview: 'I was born a leader' he says, showing the portraits of his father and grandmother, a community leader and a Mau Mau warrior

At this point of the discussion we can analyze another important finding. The majority of the respondents who declared to be, or having been, members of any of the three ex-CFAs, reported the presence of conflicts being one of the main issues within the association or among the different associations. Initially the nature of these conflicts has proved hard to clearly define. However a 'late-hour' important finding, discussed further on in these section, suggests that the main driver of the frictional dimension could be represented by interests (benefit sharing over Income Generating Activities – IGAs) and powers (the will to hold onto their positions by the CFAs leaders). This information was clearly confirmed also by our KIIs results. Moreover, as reported by other sources (see for example Mwangi et al. 2012) the frictional dimension seems to be frequent among the community associations engaged in forest management in Kenya. A study

from 2008 by Ongugo et al. shows that the 71% of the 12 Kenyan CFAs surveyed in a time span of 10 years, reported internal conflicts. As the author state, one of the effects of the forest management power devolution to the CFAs is "the formation of splinter groups due to power and leadership wrangles". Our case is even more complicated, since the conflicts are not only within the CFAs but also among them. According to our data this frictional dynamic contrasts with the scopes listed in the constitutions of the different associations that we could access and is preventing the effective application of policies and norms.

In this regard we can move to a deeper analysis of 3 aspects of the implementation of PFM in Kereita Forest, that in our view represent its main controversial elements:

- The issuing of User Rights permits
- The undertaking of Income Generating Activities in the forest
- Environmental Protection.

The legislation says that the forest, and the relative user rights, can be accessed after the payment of a fee by the members of KICOFA, the umbrella-CFA. This means that the community members must be members either of the integrated CFA or a User Group (which is in turn member of the integrated one). According to some of our respondents, though, there are ways to jump the association, and have a user right permit (especially for the collection of fuelwood and grazing) issued directly by KFS without any relation with the CFA or any other User Group. That is one of the elements that induces us to think of a grey zone between the legislation and its application. The conflicts within and among the CFAs revealed to be also

Income Generating Activities

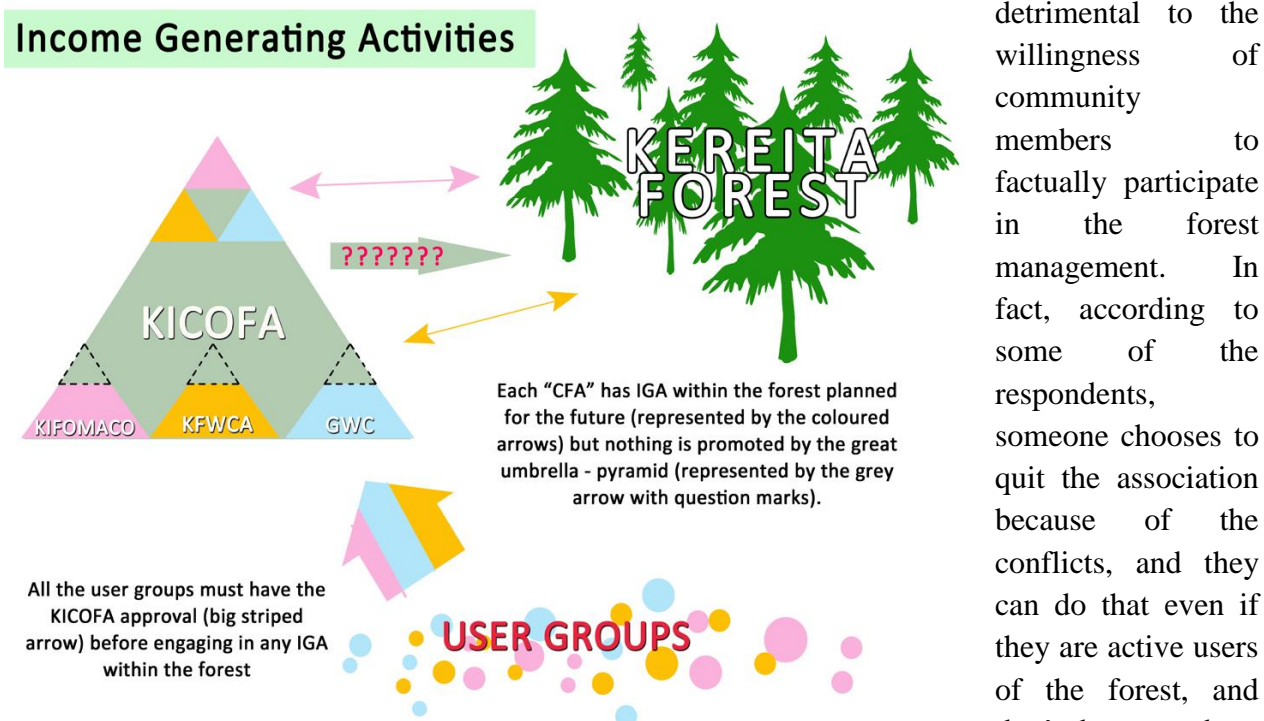


Figure 10: Income Generating Activities as one of the dimensions of Benefit Sharing.
Graphic work by SC.

detrimental to the willingness of community members to factually participate in the forest management. In fact, according to some of the respondents, someone chooses to quit the association because of the conflicts, and they can do that even if they are active users of the forest, and that's because there seem to be ways to access it passing directly through the KFS. This supposition is actually backed up by the opinion of the majority of the respondents (see the Results section) who identify the KFS as being still the main actor in the forest management. A question is thus raised: if the KFS is still the most powerful on this matter, then what are the leaders of the CFAs struggling for? The only answer we were able to find, is that interest might be the main reason. Most likely interests around the benefit sharing of the IGAs. The key to understand the situation, as shown further on, lies in the Management Plan of one of the Eco-Tourism projects planned in Kereita.

Since alleviation of poverty is one of the goals of the participatory approach on forest management (Ongugo, 2007) it is important to both guarantee access to natural resources and benefit sharing from their exploitation to the broader community.

Apart from the collection of forest products, the Kambaa community seems to have little benefit from the forest. First of all (as shown further on) they cannot access the forest fertile land for sustainable exploitation, as promoted by the Forest Act 2005. Then, there are a few economic activities planned to be undertaken within the forest. One is an Eco-camping site, promoted by a User Group who refers to KICOFA (in which the leader of the integrated CFA is personally involved in order to “guide” -his words- the young people that are undertaking the project). Another one is illustrated in **Box 2** in the *Results* section. The reason to devote a separate section to this aspect, lies in the fact that we evaluate this project being the key to light up the controversial aspects around forest management in Kereita. But before enlightening the picture, we need to complete the analysis of its contours.

Even if we want to navigate just the surface of the picture, we can see that both the planned IGAs are promoted by single user groups (or CFAs) for the benefit of the members of the user groups (“my people” as expressed by the two ‘CFAs’ leaders interviewed). And the most lucrative resource in the forest (timber) is actually not accessible from the community, since the legislation says that only registered companies related to saw mills can undertake tendering bids, and so far none of the CBOs has the capacity to do that. In that case the above mentioned conflicts are even more determinant: the community cannot really benefit from the natural resources (in terms of benefit sharing and timber exploitation). Considering now the third aspect about forest management that we consider most relevant for our research. From our surveys it seems that the only activity in which community is really involved, it is the environmental protection. That doesn’t happen only through the various user groups’ activities, but also with the help of non-organized members of the community, individual citizens, who report to the KFS the cases of illegal activities they witness within the forest. One important element to mention here, is that some of the respondents actually would like to see the young generations more involved by the KFS in the environmental protection (e.g. special training focused on community members).

Apart from benefit sharing and patrolling activities, an evidence of the actual (or not) involvement of the community in the forest management, is represented by their ability to express their opinion on the topic and understand the related legislation.

The community as stated in the Forest Act 2005 is to be represented by CFA, which is the only legal entity through which community members can enter into a management agreement with the Director of KFS, thus participate in the decision making process of the management of the forest. However, it is important also to consider, as Cornwall (2008) argues, that being involved in a process is not equivalent to having a voice. The majority of all the respondents claimed the community does not have a voice in the decision making process, partially because their voices don’t reach the leaders of the forest associations (or don’t get any feedback from them) or because there is a sense of distrust that prevents them to express their voices. Moreover

in the majority of cases, respondents did not know any forest policy and believed it is the KFS only which has an influence on the forest management (refer to the PRA ranking exercise results, among others). This element can be interpreted together with the three aspects already analyzed (issuing of user rights permits, benefit sharing from IGAs and environmental protection and we can now try to view the picture through the lenses proposed by Agrawal & Gibson 1999. For the purposes of this study we consider as actors the KFS and the Community, the latter distinguished in the main categories emerged by our analysis (CFA's, User Groups and non-organized members). As powers we considered the above mentioned three aspects of forest management. The level of power is graded from 0 (no power) to XXX (the highest level) according to our findings.

TABLE 2: Actors, Powers and Accountability among the actors of forest management in Kereita. The evaluation has been made on a four steps scale, from --- = no powers, to XXX= the greatest power.

Actors	Powers			Accountability
	Issuing of Permits	Benefit Sharing From IGAs	Conservation	
KFS	XXX	In partnership	XXX	As a paramilitary force KFS as its internal monitoring system and the general impression from our surveys is of a good level of accountability among the population.
KICOFA	X	XXX (IGAs only for members)	XXX	Not clearly defined. Their constitution defines rules to monitor this aspect (AGM, elections, conflict management) but the effectiveness of this monitoring system seems to be very low.
KIFOMACO	XX	XXX (IGAs only for members)	XXX	We couldn't access the bylaws of this CFA, but the information gathered from our respondents, and the fact that the present chairman has always been occupying the same position, poses a threat to the achievement of an acceptable level of accountability.
KFWCA	XX	XXX (IGAs only for members)	XXX	Same as above
GWC	We don't have sufficient data, but we can guess that the situation is not dissimilar to the other two old CFAs (KIFOMACO and KFWCA)			
User Groups	0	X	XXX	Even if the data collected on this topic is little, from the answers we got we imagine that accountability is a contentious aspect for user groups as well.
KENVO	0	XXX (revenues reinvested within the association)	XXX	KENVO resulted to be the most accountable actor among the community, with a general positive feedback from all the respondents.
Non-organized citizens	0	0	XX	0

The table clears the view on this first part of the mosaic, showing that an effective definition of community is needed in order to assess the efficacy of policies, since different actors have different interests, even if the legislation puts them under the same category. Moreover, even within the different CFAs there seem to be leadership conflicts showing that not only it is specific groups of people truly participating in the forest management of Kereita (the CFAs and

partially the User Groups), but actually very few people within them are the true actors in that (the high chairs). In this case the question raised by the same Agraval and Gibson 1999 reveals to be pretty actual: "What if communities are dominated by elites?". As Measham & Lumbasi (2013) recall, one of the reason for the promotion of a community based approach in natural resource management, was to prevent the risk of centralizing the benefits from conservation in the hands of elites and tourists. If we look especially at the Forest Lodge project, we assume that this is actually what happened in Kereita, with the "elite" being composed by chairmen of the CFAs, KFS and probably members of some community based organizations. This leads us also to the answer of the second sub-questions: What is the level of participation of the local community in the forest management, following the implementation of the Forest Act 2005?

Our discussion shows that the level is very low, and most of all it is necessary to distinguish who we refer to when we say "Community".

6.2 Livelihoods and Dependency on Forest Resources

The investigation on the impacts of forest policies on the community's livelihoods, must necessarily start with the study of the present sources of livelihood for the people in Kambaa, moving towards the assessment of their level of dependency on forest resources (our third research sub-question).

Our survey shows that Kambaa is a predominant agricultural area, with low opportunities for an alternative source of income, with the majority of the population being farmers. The main issue we could assess on this regard is the problem of landlessness, worsen by two dynamics: land inheritance patterns, which ever-reduce the amount of available land, and population pressure (both from family size increase and migrations linked to the ethnical conflicts occurred in 2007). Our research showed that the main coping strategy against land scarcity and poverty resulted the exploitation of forest resources. But as we already discussed, the population cannot entirely benefit from them. Only fuelwood and grass seem to be the products accessible from the greatest share of the population. However they can provide only subsistence means to the families of Kambaa. Next to this aspect we need to consider that even among the landowners, the forest represents a source of income, considering the opportunity to collect and sell the fuelwood, and engaging in IGAs in the forest (although with all the controversial aspects already analyzed).

Thus we can answer our fourth research sub-question: *What are the effects of the Forest Act 2005 on the livelihoods of the community adjacent to the Kereita Forest?*

As shown from our data, if we consider the largest share of the population in Kambaa being dependent on the forest, for subsistence or income improvement reasons, we can assume that every forest policy in this area will affect substantially the livelihood of the community. This will be in the following ways:

- By determining their accessibility to forest resources (meaning also cultivable land through PELIS)
- By providing a source of diversified income, thus representing a factual coping strategy

Both these aspects can be enhanced by the actual participation of the community in the forest management, but as we discussed in the previous section, this is not yet the case of Kambaa.

The problem in our opinion lies in the implementation of the Act, which shows grey zones in which who is actually benefitting is not the entire community, but only some of its members. We see in fact that the participatory forest management cannot be properly implemented in Kereita because the community in the broader sense, lacks of a proper enabling environment.

Thus, we realized that the problems was created neither from the Forest Act 2005 itself neither from the access rights. The problem was the enabling environment in the ground and lack of the community's *ability* to access the important benefits from the forest, as stated by Ribot and Peluso (2003).



Figure 11: Good performance of tree plantations within the PELIS plots in Nyamweru. An example of the good interaction of agriculture and forestry through community based activities, benefitting both environmental conservation and community livelihoods

Conclusion

“The Forest is not ours, it is of the rich people living in the city”.

This was the conclusive sentence of the interview we had with a farmer who lost faith in the decision-makers. And this is unfortunate to experience in a Country where a participatory approach is promoted as a means to improve the livelihoods of the community, while preserving the environment.

But if this is the perception that some of the community members have, then it could be that something went wrong in the implementation of the forest policies. According to our research, the elements that contributed to the fact that until today, an effective enforcement of PFM in Kambaa was not achieved, are:

- The multi-level conflicting dimension (KFS vs KWS, KICOFA vs the 3 old CFAs, etc...)
- The lack of awareness of the community about the policies and regulation governing Kereita
- Controversial accountability at the community associations level

All that created an impasse in the effective enforcement of the participatory approach. The conundrum seems to be so hard to overcome, that in our eyes the only real actor actually participating in the Kereita Forest management and decision making remains the KFS.

But not all the hope is lost. If we look at the situation from the perspective of the environment conservation, many good things have been achieved. Many respondents in fact declared to be willing to help KFS in patrolling the forest and planting new trees. Especially there is evidence of some user groups involved in conservation with success. Moreover, volunteering seems to be the most efficient dimension of community participation in the area. We couldn't analyze too in depth this aspect, but a positive element that we could witness in Kambaa is represented by KENVO, the oldest community based organization involved in conservation. Many of our respondents in fact, mentioned KENVO as one of the most important figures around the management of the forest. This is due to the fact that the association has been living within the community for a long time, organizing activities for the benefit of everyone. This resulted in enhancing KENVO's accountability among the population, which is not the case of what happened to the various CFAs. It should be mentioned however that just like in the case of the CFA'S, even in KENVO the leadership has been unchanging ever since.

That said, since laws and policies are meant to be issued for the improvement of the life and livelihoods of the citizens, more efforts must be made to achieve these goals. Transparency must be promoted on all levels: from a clear definition of “community” in the legislation, to the accountability monitoring systems within the forest associations. There is a need to define the benefit sharing mechanism and promote effective ways for the improvement of people's

livelihoods, involving a bigger share of community members, and the young generations in particular.

The controversial aspects related to the African Eco-Lodges project may induce a risk of drift from Conservation to what many authors define as *Commodification* of Natural Resources (Cf. Benjaminsen & Bryceson 2012; Fairhead et al. 2012; West et al. 2006). This concept refers to the idea that conservation can be enhanced by adding monetary values to natural resources, which thus become marketable goods. But this can be nothing but an aspect of “Green-grabbing” (Vidal, 2008), that is the appropriation of natural resources for environmental ends (Fairhead et al., 2012). The same author identifies indeed eco-tourism as a driver of this phenomenon. Thus if what is supposed to be a measure to enhance the participation of the community in the forest management, becomes instead a means to benefit just a very small share of the population (the ‘shareholders’) it is not hard to imply that the community is actually being dispossessed of their rights to truly benefit from the forest.

Concluding, as Agrawal and Gibson (1999) put it: “If communities are not involved in the active management of their natural resources, they will use resources destructively”. This risk is evident if we consider one of our findings about the illegal logging activity undertaken by the youngsters in Kereita forest. There are ways to avoid that, but nothing is possible without the true and effective involvement of the community in the broader sense, not only the members of forest association, but the whole of the citizens of Kambaa and the other four villages around Kereita forest.

References

- Agrawal, A. & Ribot, J.C., 1999. Accountability In Decentralization A Framework With South Asian And West African Cases. *The Journal of Developing Areas*, 33(4), pp.473–502.
- Angelsen A, Larsen HO, Lund JF, Smith-Hall C, Wunder S. 2011. Measuring livelihoods and environmental dependence: methods for research and fieldwork. Bogor, Indonesia: CIFOR
- Arnstein, S., 1969. A ladder of citizen participation. *AIP Journal*, July, pp. 216–214.
- Barrow, E. et al., 2002. Analysis of Stakeholder Power and Responsibilities in Community Involvement in Forest Management in Eastern and Southern Africa
- Benjaminsen, T.A. & Bryceson, I., 2012. Conservation, green/blue grabbing and accumulation by dispossession in Tanzania. *The Journal of Peasant Studies*, 39(2), pp.335–355
- Biotope Consultancy Services Nairobi, 2011. Environmental, social and economic assessment of the fencing of the Aberdare Conservation Area. A report for: The Kenya Wildlife Service, Kenya Forest Service, Kenya Forests Working Group, United Nations Environment Programme and Rhino Ark, Nairobi
- Byron, N. & Arnold, M., 1999. What futures for the people of the tropical forests? *World Development*, 27(5), pp.789–805.
- Bryman, A., 2006. Integrating quantitative and qualitative research: how is it done? *Qualitative Research*, 6 (1), pp.97–113.
- Butynski, T.M., 1999. Aberdares National Park and Aberdares Forest Reserves wildlife fence placement study and recommendations. Unpublished report for the Kenya Wildlife Service and Kenya Forest Department, Nairobi. 453 pp
- Chambers, R., 1994. The Origins and Practice of Participatory Rural Appraisal. *World Development*, 22, pp. 953-969
- Cornwall, A., 2008. Unpacking “Participation” Models, meanings and practices. *Community Development Journal*, 43(3), pp.269–283.
- EMPAFORM, 2006. REPORT ON KEREITA FOREST AND WILDLIFE CONSERVATION ASSOCIATION (KFWCA) - CAPACITY ASSESSMENT REPORT, Kereita Forest, March 8-10, 2006.
- Fairhead, J., Leach, M. & Scoones, I., 2012. Green Grabbing: a new appropriation of nature? *The Journal of Peasant Studies*, 39(2), pp.237–261

Gillham, Bill (2000). Case study research methods. London: Continuum

Jaetzold, R., Schmidt H., 1983. Farm Management Handbook of Kenya vol. 2, 1982. Part B, Central Kenya (Rift Valley and Central Provinces), 508, Ministry of Agriculture, Nairobi

KEFRI et al., 2007. PROCEEDINGS OF THE FIRST NATIONAL PARTICIPATORY FOREST MANAGEMENT CONFERENCE, KEFRI Headquarters, Muguga Kenya, June 6-8, 2007.

KFS, KFWG, KICOFA, 2010. Kereita Forest Participatory Management Plan

KFWG, 2013. Participatory Forest Management Plans (PFMPs), Development, Implementation Review and Proposed Monitoring Framework Report, Nairobi.

Kenya National Bureau of Statistics, 2010. The 2009 Kenya Population Census

KICOFA and KFS, 2009. Kereita Community Forest Management Agreement, Kereita Forest Station

Krantz, L., 2001. The Sustainable Livelihood Approach to Poverty Reduction - An introduction. Sida - Swedish International Development Cooperation Agency.

Lamarque, F., Anderson, J., Chardonnet, P., Fergusson, R., la Grange, M., Osei-Owusu, Y., Bakker, L., Belemsobgo, U., Beytell, B., Boulet, H., Soto, B. & Tabi Tako-Eta, P., 2008. Human-wildlife conflict in Africa: an overview of causes, consequences and management strategies. FAO, Rome

Lessman, C., 2012. Regional Inequalities and Decentralization: an empirical analysis. Environment and Planning A(44), pp. 1363 – 1388

Massey, A. L., King, A. A., Foufopoulos, J., 2014. Fencing protected area: A long-term assessment of the effects of reserve establishment and fencing on African mammalian diversity. Biological Conservation 176 (2014) 162–171

Matiku Paul, 2012. Is participatory forest management (PFM) an asset or liability to local community households adjacent to Arabuko Sokoke Forest, Kenya? Journal of African Studies and Development, 4(April), pp.96–104.

Measham, T.G. & Lumbasi, J. a., 2013. Success factors for community-based natural resource management (CBNRM): Lessons from Kenya and Australia. Environmental Management, 52, pp.649–659.

Morgan, D.L., 1997. Focus Groups as Qualitative Research. , pp.32–46.

Mungai, D. et al., 2011. Environmental, social and economic assessment of the fencing of the Aberdare Conservation Area. *Environment*, (September), p.140 p.–140 p.

Mwangi, E., 1998. Colonialism , Self-Governance and Forestry in Kenya : Policy , Practice and Outcomes.

- Ogada, M.J. & Analysis, R.S., 2012. The New Forest Management Regime in Kenya : Effects on Household Farm Forestry in Kakamega. , pp.18–24.
- Ongugo, P.O., 2007. Participatory Forest Management in Kenya : Is There Anything for the Poor ? The Precursor for PFM. *Forestry*, (September), pp.1–10.
- Ongugo, P.O. et al., 2008. EXAMINING THE ROLES OF COMMUNITY FOREST ASSOCIATIONS (CFAs) IN THE DECENTRALIZATION PROCESS OF KENYAN FORESTS. Paper presented to the IASC Conference held on 11th-19th July 2008, England.
- Owiti, Z., 2012. Spatial distribution of rainfall seasonality over East Africa. *Journal of Geography and Regional Planning*, 5(15), pp.409–421.
- Oucho, J.O., 2007. Migration and Regional Development in Kenya. *Development*, 50(4), pp.88–93.
- Pouliot, M. & Treue, T., 2013. Rural People' s Reliance on Forests and the Non-Forest Environment in West Africa: Evidence from Ghana and Burkina Faso. *World Development*, 43(June 2011), pp.180–193.
- Ribot, J.C. & Peluso, N.L., 2009. A Theory of Access*. *Rural Sociology*, 68(2), pp.153–181.
- TSPGP, 2012. Risk Assessment - The risk of genocide in Kenya. The Sentinel Project for Genocide Prevention, Canada: Toronto.
- Selener, D., Endara, N., Carvajal, J., 1999. Participatory Rural Appraisal and Planning Workbook. International Institute of Rural Reconstruction, Quito, Ecuador.
- United Nations Development Programme. 2012. Kijabe Environment Volunteers (KENVO), Kenya. Equator Initiative Case Study Series. New York, NY.
- Vidal, J. 2008. The great green land grab. *The Guardian UK*, 13 February. Available from: <http://www.guardian.co.uk/environment/2008/feb/13/conservation> [Accessed 31/03/2015]
- West, P., Igoe, J. & Brockington, D., 2006. Parks and Peoples: The Social Impact of Protected Areas. *Annu. Rev. Anthropol.*, 35(251-77)
- World Bank, 2004. Sustaining Forests: a development strategy. The International Bank for Reconstruction and Development, Washington DC, USA.

Appendix

A1. Synopsis

University of Copenhagen

Interdisciplinary Land Use and Natural Resource Management (ILUNRM)

RESEARCH SYNOPSIS



Placing the last pole of the Aberdares' 400km electric fence at Kipipiri Hills. Source: Daily Nation, article by JAMES KARIUKI (2009)

Forest Act 2005: the effects of its implementations on the livelihoods of communities adjacent to the forest.

A case study on the Kereita Forest, Kiambu county, Kenya.

Authors

Susanna Camerlengo – gvl953
Radka Famfulova - wsh210
Caio Garcia - lqh901
Seifu Gebrehiwet Gebremichael - qms200

Supervisors

Ebbe Prag
Martin Skrydstrup

Table of Contents

Abbreviations.....	34
Introduction.....	34
Problem Statement.....	35
The study area	36
Research Question.....	36
Subquestions	37
Methods	37
Rationale behind the choices	37
Key Informants	38
Literature Review & General Data Collection.....	38
Preliminary Questionnaire Survey.....	38
Participatory Rural Appraisal & Diverse Qualitative Methods.....	39
Semi-Structured Interviews (SSI).....	39
References.....	40
Appendix.....	42
a. DATA MATRIX	42
b. TIMETABLE	Error! Bookmark not defined.

List of abbreviations

CBO – Community Based Organization
CFA - Community Forest Association
CFUG – Community Forest Users Group
DFID - Department For International Development
HH - Households
KENVO - Kijabe ENvironmental VOLunteers
PFM - Participatory Forest Management

Introduction

According to Agrawal, et. al. (2008) the approaches to forest governance system can be centralized or decentralized: the management power is on the Government and the community respectively. But, the most important issue is its effectiveness. Many forests continue to be owned by Governments. However, the effectiveness of the governance is independent of formal ownerships.

There are ambitious efforts to restore forests, ecosystem services and biodiversity throughout the world. However, the restoration process not only takes many decades but also depends on the relationship with the community who habit or share the benefits from the landscapes (Kaipu, et. al. 2008)

Many poor people are dependent on natural resources to sustain their livelihoods. The World Bank's Forest Strategy states that: "more than 1.6 billion depends to varying degrees on forests for their livelihoods, about 60 million indigenous people are almost wholly dependent on forest and some 350 million people who live within or adjacent to forests depend on the forests to a high degree for subsistence and some income" (World Bank, 2004: 16). From the above findings, we can imagine how forest is highly linked to rural communities especially to those who live adjacent to the forests. Hence, such a community could be affected by the governance system of any forest as it is linked to their livelihoods. In Africa, especially Sub-Saharan Africa (SSA) in particular, about 70% of the population depends on forest and woodland for their livelihoods, 20% of disposable income for the landless is the same source. Furthermore, 60% all energy source and 80% building materials for the whole continent comes from forests and woodland (*Ibid*: 40).

Kenya is one of the Sub-Saharan Countries in which Forest management systems are an important area of research. Forest in Kenya has gone through different management stages before and post colonization. According to Thenya et. al. (2007), the Forest Act 1964 (Cap. 385) was the first forest act developed immediately after the independence, which empowered the Forest Department. This one was created in 1902 in the colonial era, to establish, control and regulate the central forests and un-alienated government lands. Forty years later, a legislation to repeal the Forest Act (Cap. 385) emerged, and this led to the Current Forest Act. No. 7 of 2005, which established the Kenya Forest Service – a government lead agency charged with the responsibility of forest management in the Country. The new Forest Act (2005) included provisions that allowed for the involvement of communities in the management of forests in Kenya, with Participatory Forest Management (PFM), as one of its significant milestones.

However, there are researches indicating some problems derived from this approach. Mwaniki J. (2010) states that though the PFM approach was accepted positively by the community but he mentioned some implementation challenges like "limited benefits compared to cost incurred in PFM and political interference P:(PAGE REFERENCE NEEDED)..... ". Ongugo P. (2007) lists four main challenges that need to be addressed by the stakeholders in order for the PFM to achieve its objectives, focusing on the process of formation of the CFAs and their capacity on managing the forest. The author ends his thoughts with mentioning that the democratization of the forest alone is not enough to reduce poverty, the commercialization of forest products and the fair distribution of the benefits from this distribution are the main contributor for poverty alleviation.

Problem Statement

Forests in developing countries are often considered as a form of "natural insurance" that rural communities hold against hardships (Pouliot and Treue, 2013). Thus management practices and policies which affect such natural capital, have indisputably effects on the livelihoods of adjacent populations.

In recent years, major changes occurred in Kenya's forestry legislation, which shifted from a deeply centralized to a more participatory approach. Particularly of interest, is the renewed promotion of community-based agroforestry systems, like the shamba\PELIS (Plantation Establishment and Livelihood Plantation Establishment and Livelihood Improvement Scheme). However, there seems to be a very few studies which investigate the effects of this policy change on the livelihood of rural communities. Therefore, we want to contribute in filling this knowledge gap, by conducting a case study in the Kambaa village, in Kiambu County. The population of the area lives in the proximity of the Kereita forest, on the southern part of the Aberdare Range, a protected area become famous for its 400 km electric fence which prevents human-wildlife interaction. We are going to investigate the relation between the adjacent community and the forest, the degree of their dependency on the forest and to what extent recent forestry policy changes affected their livelihoods. In order to get a better understanding of the situation, we will try to integrate our results with a general overview of the state of the forest environment.

The study area

The Kereita Forest is located on the southern part of the Aberdare Range, which is surrounded by four counties: Kiambu, Muranga, Nyandarua and Nyeri. This area has a latitude of 00° 00'-01° 00' South and longitude of 36° 30'-36° 55' East. The altitude ranges from 1850 m to about 4000 m with a total area of 2185 km². The forest area is a main source of biodiversity in Kenya; it is a water tower of the country, for agriculture, livestock and human consumption including the population in Nairobi. The forest area is surrounded with a highly dense population with intensive agriculture (ibid). Due to this fact, there was high human pressure on the forest and conflict between the farmers and the wildlife which led to the establishment of the Rhino Ark in 1988. The organization had the aim of protecting the environment and the farmers through the construction, in a 20 years time span, of a 400 km electric fence with the objectives of fencing the Aberdare National park.

A first analysis of the effects on the environment and the livelihoods derived from this conservation strategy, is presented by Mungai *et al.*, (2011). The authors shows the macro level economic, social and environmental effects of the fence from its inception until its final phase (2009). Many of the findings show positive impacts in all aspects. However, the report includes some challenges arising like fewer gates to some communities which limits access to the forest. Due to this fact *'some farmers are vandalizing the fence, digging holes beneath the fence to get access to the forest'* etc (ibid: 67).

Research Question

What are the effects of the Forest Act 2005 and its implementations on the livelihoods of the communities settled around the Kereita Forest area, in the Kiambu County?

Subquestions

- 1) *To what extent is the community dependent on the forest?*
- 2) *What are the effects of the Forest Act 2005 on the livelihoods of the community adjacent to the Kereita Forest?*
- 3) *What is the level of participation of the local community in the forest management, following the implementation of the Forest Act 2005?*
- 4) *In which way is the new participatory forest management approach implemented among the Kereita communities?*

Methods

Rationale behind the choices

The impacts of national and local policies on the livelihoods of rural communities can be assessed through the use of a variety of methods. Some authors prefer a classical cost/benefit analysis, like the one engaged by Biotope (2011) in order to assess the social effects of the Aberdare Range Fence. An economic approach is also the one used by Pouliot and Treue (2013), which identify in the households survey the best way to collect data about people's reliance on forests for their livelihood strategies. However, due to means constraints (mostly the small amount of time available) and lack of deep economical skills among the members of our group, we decided that the most immediate and effective way to obtain the information we need, is through the "full-immersion" within the community itself. This will give us the opportunity to touch by hand the reality of the human-nature relation in our field-site, and the ability to directly discuss and confute our findings among the very actors.

Moreover, already from the preliminary meetings, the group agreed on tackling our research through the application of specific social science tools, designed to assess livelihood impacts, degree of community participation, and the structure of powers from the national level to the County government and the local community. These tools have been identified in:

The **DFID (1999) Sustainable Livelihood Framework** (specifically adjusted for our needs and means)

The **Ribot & Peluso (2003) Theory of Access**

The **Arnstein's Ladder of Participation** (Ref. Cornwall, 2008)

In his masterpiece from 1998, Ian Scoones argues that the best way to analyze livelihoods' sustainability, is through the application of a combination of methods, creating a "hybrid" methodological approach comprehensive of both quantitative and qualitative research strategies.

Agreeing with Scoones, and inspired by the works of other authors (see Lund and Treue, 2008) our group decided to conduct the research through the use such a mixed-method approach, as shown in the following sections. A Data Matrix which includes all the information about the strategies we outlined to answer the single Research Sub-questions is included in the Appendix.

Key Informants

The key informants have been selected based on their relation to the research topic, and our ability to have access to them.

- **Dr. T. Thenya from Nairobi University & our counterparts (Mary Njeri and Harrison Simotwo)**
- **Interpreters**
- **KENVO responsible**
- **Mr Kinyua (local informant suggested by Dr. Thenya)**
- **Village Chiefs**
- **KFS officers**
- **Elders**
- **Local NGOs**
- **Heads of Farmers\Hunters associations (if any)**
- **Responsible from CFA**
- **Responsible from CFUGs and CBOs**

Literature Review & General Data Collection

This is the first step in order to get a general overview of the situation, in order to get data about:

- The national and local forestry legislation
- The national and local governance structure
- The state-of-the-art of the literature about the topic
- The state of the local environment, specifically the Kereita Forest (with the aid of online resources, like Google Earth)

The research started in Copenhagen and will be carried on during the fieldwork, with the help of our counterparts and local informants.

Preliminary Questionnaire Survey

This tool is meant to provide us with general information on the field-site and its constituent elements. Due to the difficulty in accessing more specific data for the area before being there, it will be greatly important for us to collect such preliminary information in order to better structure our work.

The respondents to the questionnaire survey will be purposefully selected once in the field, with the help of our counterparts and the key informants. From the data collected here, we will then

develop a specific sample strategy in order to identify the respondents for the next methodological activities.

Participatory Rural Appraisal & Diverse Qualitative Methods

We argue that a qualitative approach is the most effective research strategy to get an immediate grasp of the situation and in-depth understanding. Most of all, since we want to investigate possible contentious aspects of the life and livelihood of a small community, being a part of that is essential in order to properly use our “sensorium” skills.

Participatory activities will include:

Participant Observation: we will try to keep our eyes and minds open during our entire stay on the field-site, in order not to lose important information that might emerge from all the daily activities

Mapping and Transect Walks: in order to have an idea of the perception that the community has of the Forest and the way they relate to it, most of all how, why and how often they access it. This activity will be followed up by a GPS mapping conducted during a Transect Walk in order to triangulate the information obtained. We think that having at least 2 transect-walks, one with a KFS officer and/or a KENVO volunteer, and another one with a normal member of the community, CFA will give us a good overview of the situation and its issues.

Pair Rankings about the importance and use of specific Forest and Non-Forest products (to be preliminary chosen from the survey).

Semi-Structured Interviews (SSI)

This is the main tool in order to get, in a good time, important and more or less in-depth information from respondents. These will be selected through a purposeful sampling strategy after the analysis of the data collected through the surveys. However, in case new interesting elements will rise from the SSIs, we are ready to prepare new interviews with possible people related to them. SSI are a good tool to get sensitive information, and they will be conducted starting from the second half of our stay. The reason behind that, is that we need to gain the trust from the population in order to let them disclose their views and opinions for us.

References

- Agrawal, et al., 2008. Changing Governance of the World's Forests, *Science* 320, DOI: 10.1126/science.1155369
- Cornwall, A., 2008. Unpacking "Participation":models, meanings and practices. *Community Development Journal*, 43(3),pp.269–283.
- Department for International Development, 1999. Sustainable livelihoods guidance sheets. London: DFID
- Kaipu, Y. et al., 2008. Forests in Flux. *Science*, 320(June), pp.2008–2008.
- Kariuki, J., 2009. Huge benefits expected after completion of 400-km fence around the Aberdares. *Daily Nation*. [online] Available at: <http://www.nation.co.ke/news/-/1056/652422/-/4ee9g4z/-/index.html> [Accessed 3 Feb. 2015].
- Kenya Forest Act. 2005. available at <http://www.law.pace.edu/sites/default/files/IJIEA/ForestsAct2005.pdf>
- Lund, J.F. & Treue, T., 2008. Are We Getting There ? Evidence of Decentralized Forest Management from the Tanzanian Miombo Woodlands. *World Development*, 36(12), pp.2780–2800. Available at: <http://dx.doi.org/10.1016/j.worlddev.2008.01.014>.
- Mungai, D. et al., 2011. Environmental, social and economic assessment of the fencing of the Aberdare Conservation Area. *Environment*, (September), p.140 p.–140 p.
- Oduol, P.A., 1986. The Shamba system: an indigenous system of production from forest areas in Kenya., 1(20).
- Ongugo, P.O., 2007. Participatory Forest Management in Kenya : Is There Anything for the Poor ? The Precursor for PFM. *Forestry*, (September), pp.1–10.

Pouliot, M. & Treue, T., 2013. Rural People' s Reliance on Forests and the Non-Forest Environment in West Africa: Evidence from Ghana and Burkina Faso. *World Development*, 43(June 2011), pp.180–193.

Ribot, J.C. & Peluso, N.L., 2003. A Theory of Access *. *Rural Sociology*, 68(2), pp.153–181

Scoones, I., 1998. SUSTAINABLE RURAL LIVELIHOODS - A FRAMEWORK FOR ANALYSIS. IDS WORKING PAPER, (72).

Thenya, T. Wandago, B. O. B., Nahama, E. T. and Gichanja, M. (2007): Participatory Forest Management Experiences in Kenya (1996-2007). Kenya Forest Working Group.

Witcomb, M. & Dorward, P., 2009. An assessment of the benefits and limitations of the shamba agroforestry system in Kenya and of management and policy requirements for its successful and sustainable reintroduction. *Agroforestry Systems*, 75, pp.261–274.

World Bank, 2004. Sustaining Forests: a development strategy. The International Bank for Reconstruction and Development, Washington DC, USA

Appendix

a. DATA MATRIX

What are the effects of the Forest Act 2005 and its implementations on the livelihoods of the communities settled around the Kereita Forest area, in the Kiambu County?			
<u>Subquestions</u>	<u>Data Needed</u>	<u>Methods</u>	<u>People and Materials</u>
To what extent is the community dependent on the forest?	<ul style="list-style-type: none"> -Population size and distribution. -What kind of forest products are the households most reliant on -What are the important factors that hinder their accessibility -Recent contingent changes in their accessibility -How often do the HH's members access the forest and main reasons for that -The share that forest products have in the HH's income -Recent shocks for the HH and the role of the forest products as a coping strategy 	<ul style="list-style-type: none"> -Literature Research -Preliminary questionnaire -Interviews -PRA (mapping and preference ranking, transect walks) 	<ul style="list-style-type: none"> -Key informant (NGO workers, chiefs, officers) -householders from different groups in the communities -pen, paper, dictaphone, gps
What are the effects of the Forest Act (2005) on the livelihoods of the community adjacent to the Kereita Forest?	<ul style="list-style-type: none"> -National policy on forest (history and present) -Power structure of the forest management -community access to forest resources (possible licence needed, time and space limitations) -community level committees and their accountability -Individual citizens role in the decision making -who enforces the decisions, what is the mechanism? 	<ul style="list-style-type: none"> -Multi-sources literature-review -Semi-structure interviews to the sample community -key informant interview 	<ul style="list-style-type: none"> -Policy Documents -Related literature and Reports -Sample households from the community -key informants from the community and the forest service office <p>Materials: paper sheet, pen, voice recorder</p>
What is the level of participation of the local community in the forest management, following the implementation of the Forest Act 2005?	<ul style="list-style-type: none"> -Analysis of the power structure and decision making process in the forest management -What are the community-based forest organizations of the area, how do they operate, what kind of activities are they engaged with or promote, and how to become a member -Level of social awareness about the legislation: do the people know what changes occurred in the last 10 years? Are the regulations understandable for everyone? -Mechanism through which a community member can give his opinion about the forest management -Verify the existence of community 	<ul style="list-style-type: none"> -Literature Research -Key Informants Interview -Participatory Rural Appraisal: mapping, transect walks, participant observation -Semi-Structured Interviews -Questionnaire 	<ul style="list-style-type: none"> -Thenya & Counterparts -KENVO & possible social promotion organizations -Sheets & Pens/Colors -Dictaphone -GPS instruments -Camera -Printed Questionnaires and guidance sheets -Interpreter

	meetings related to forest management and assess how and how often they are organized, where, who and how advertises them and who can participate		
In which way is the new participatory forest management approach implemented among the Kereita communities?	<ul style="list-style-type: none"> -What are the participatory forest management strategies implemented -Where are they implemented and by whom -Who and how can access and engage in this strategies -What are the effects on the environment and what are the differences from the past centralized approach -Are there local regulations on PFM? What do they state? 	<ul style="list-style-type: none"> -Literature Research -Key Informants Interview -Participatory Rural Appraisal: mapping, transect walks, participant observation -Semi-Structured Interviews -Questionnaire 	<ul style="list-style-type: none"> -Thenya & Counterparts -KENVO & possible social promotion organizations -Sheets & Pens/Colors -Dictaphone -GPS instruments -Camera -Printed Questionnaires and guidance sheets-Interpreter

A2. Table of Methods Applied

Method	Description
Questionnaire	Was done with 26 respondents in two different areas, one close to Kereita forest the other close to Nyamweru forest.
Semi Structured Interviews	They were done with 14 respondents which we selected randomly.
Participatory Rural Appraisal	This activity were conducted with 8 participants in total. And we conducted 2 activities, Participatory mapping and stakeholders ranking.
Participatory Observation, Mapping, Forest and Village Walk	We have done 1 walk on the village and 2 forest walks
Key Informant Interviews	<p>The group conducted interviews with 9 respondents considered key informants.</p> <ul style="list-style-type: none"> • Prof. Mungai • Village Elder • Paul Njehu, Community Leader • David Kuria • John Mburu, Youth Leader • Bernard Kamanu, Leader of KICOFA and KIFOMACO • Poul Mwigai, Chairman of KWFA • Mr. Kinyua, DC • KFS Rangers
Focus Group	1 focus group activity was done with the presence of 4 women and 2 men members of a forest user group.