Impacts of Participatory Forest Management on Community Livelihood: Case study of Kereita forest Kenya

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Thesis

DEVELOPMENT STUDIES 592

A 120-point thesis submitted to Victoria University of Wellington in partial fulfilment of the requirements for the degree of Master of Development Studies

School of Geography, Environment and Earth Science

Victoria University of Wellington

New Zealand

2018

Abstract

Since the 1990s there has been an increasing shift in the management of natural resources from state control to participatory approaches. Many developing countries, including Kenya, have promoted participatory forest management (PFM) as a strategy for enhancing forest conservation and the sustainable use of forest resources through community participation. Drawing on a case study of the Kereita forest, in the central highlands of Kenya, this research explores the impact of PFM on community livelihood. Using a post-structural political ecology approach and qualitative research methods, I conducted and analysed 18 semi-structured interviews.

Results indicate that the implementation of PFM has changed how the community access forest products. PFM, through processes of inclusion and exclusion, has had both positive and negative effects on community livelihoods. New opportunities were opened, for instance, increased awareness about forest conservation led to a women's group developing alternative livelihood pathways. In contrast, the development of a new eco-lodge disrupted community plans to rehabilitate that area.

This case study also reflected other critiques of PFM in terms of who holds ultimate authority; ultimately, the government retained a lot of control in forest management, and PFM processes have concentrated power with the government and channelled certain livelihood outcomes that benefit the already wealthy. These uneven power relations between the community and the government produce and perpetuate conflicts in implementing PFM hence hampering livelihood improvement. Furthermore, I argue that PFM has created and embedded both visible and invisible boundaries – through fences and permits, for instance – that regulate what takes place where, and who accesses what. To sustain the development of good community livelihoods through PFM, this research calls for continued interrogations of power imbalances within current PFM structures.

Acknowledgements

I would like to thank people who contributed to this research and have enabled me to successfully complete this thesis. First, I would like to thank my research participants for taking time to participate in my interviews and contributing their knowledge to this research.

Special thanks go to staff of Kijabe Environmental Volunteers (KENVO). Thank you for your warm welcome to Kereita forest and for allowing me to use your resource centre for my interviews. Without your support this thesis would not have been accomplished. David Kuria and Julius Kimani thank you for organising my field logistics and for your guidance during my data collection.

The New Zealand Agency for International Development for providing the Commonwealth Scholarship award. I greatly appreciate the financial support given to me for the two years of my studies at Victoria University of Wellington.

Dr Amanda Thomas, my supervisor, saying "thank you" is not enough. I'm grateful for the invaluable moral and academic support. Your comments and feedback have contributed greatly to this research. Thank you for being understanding and patient with my writing. I have been lucky to have you as my supervisor, thank you for encouraging me even when all my hope was gone. You have been my greatest source of strength in this research, you supported me and my family during the most challenging times of my thesis writing. Thank you for a heart full of love and kindness.

Special thanks go to my friends for making my stay in Wellington fun. Thanks to all my classmates for your support, encouragement and checking on me when I wasn't able to be on campus.

Special thanks to my loving husband Dennis. You sacrificed a lot just to be there for me throughout my two years of studies. Thank you for your support and encouragement. Thank you for being dad and mum to our son Cephas when I was too busy with my thesis. My son Cephas, to you I'm most grateful; to you I will forever remember my Master's thesis.

I'm grateful to all people who made this research possible.

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List of Abbreviations

CBO	Community Based Organizations
CFM	Community Forest Management
CSOs	Civil Society Organisations
DFID	Department for International Development
FAO	Food and Agricultural Organisation
FMA	Forest Management Agreement
JFM	Joint Forest Management
KENVO	Kijabe Environment Volunteers
KFS	Kenya Forest Service
KWS	Kenya Wildlife Service
NGO	Non-Governmental Organisation
PFM	Participatory Forest Management
PFMP	Participatory Forest Management Plan
WWF	World Wildlife Fund

Chapter 1. Introduction and Context

1.1. Introduction

Globally 2.4 billion people depend on forests for social, cultural, economic and environmental reasons Food and Agricultural Organisation (FAO, 2017). Forests, therefore, contribute significantly to community livelihoods and poverty alleviation. In addition, forests offer watershed protection, prevent soil erosion, mitigate climate change, provide habitats for diverse animal species and almost 80% of the world's terrestrial biodiversity, and are the second highest carbon sinks after oceans World Wildlife Fund (WWF (2017, p. 7) In Kenya forests cover about 3 million ha of land equivalent to 6% of the total land area FAO (2010). The communities living adjacent to Kenya's forests depend on Kereita forest for various goods and services such as cultivation, grazing, fuel wood, water, and herbal medicine and among other benefits Kenya Forest Service (KFS, 2016).

The history of institutionalized forest management in Kenya began when Kenya became a British colony in 1895. Since then, forest management has moved through a series of stages from colonial to postcolonial and now a devolved management system. Each of these stages reflect the social, economic and political realities of the time (KFS, 2014). During the colonial and post-colonial eras, forest conservation in Kenya was based almost entirely on the protection of Kereita forests with a rigid top-down, command and control approach. This fortress form of management was characterized by the exclusion of people from protected areas such as national parks and forests and during this regime; communities lost their forest entitlements and sources of livelihood since access to Kereita forest was illegal (D. Anderson & Grove, 1989). As a result, there were constant struggles between the state and forest dependent communities. In the 1980s and early 1990s communities retaliated to the punitive government approach by encroaching on forests (Murombedzi, 1998). This led to massive forest destruction and resource-based conflicts.

Escalating conflicts and immense loss of forest resources called for changes in forest management. The pressure for changes happened at a time when participatory approaches were gaining traction in the global development debate (Chambers, 1997). Therefore it was prudent to align conservation changes with the global development move towards more participatory approaches which evolved in the late 1980s as a result of the general failure of top-down approaches (Chambers, 1997).

Participatory-based conservation, which is widely known as conservation with the people, was adopted to address the failures of the previous top-down approach in forest management. The participatory-based development model repositioned communities that were previously viewed as a threat to conservation as key to achieving sustainability (Buchenrieder & Balgah, 2013). Given the significance of forests and their connection to rural people's livelihoods, forests became a prominent testing ground for community-centred development and conservation (Anderson & Grove, 1989; Sarin, Singh, Sundar, & Bhogal, 2013). This is how community-based forest management approaches, which include Participatory Forest Management (PFM), joint-management and co-management were adopted. PFM is an arrangement where key stakeholders enter into mutually enforceable agreements that define their respective roles, responsibilities, benefits and authority in the management of forest resources (Warah, 2008).

PFM encompasses a wide range of practices mostly based on a country context and forest land ownership. All these approaches tend to emphasize decentralization or devolution of forest management rights and responsibilities to forest adjacent communities with the aim of producing positive social, economic and ecological outcomes. These include Joint Forest Management (JFM), Community Based Natural Resources Management (CBNRM), Community Forest Management (CFM), and community-based forest management (CBFM).

For instance, in Tanzania and India, JFM is used and refers to the collaborative forest management approach in which the management responsibilities are divided among Kereita forest owners (usually central or county government) and forest adjacent communities. In Tanzania, CBFM takes place on village land or private land and the trees are owned and managed by a village government through a village natural resource committee (VNRC), a group or individual. CBNRM is mostly used in southern African countries and is normally accompanied by the formation of local institutions to which control and management authority is devolved. The term CFM is mostly used in Nepal, Vietnam, Mexico and Guatemala and it also refers to community participation in forest management.

Under the PFM arrangement stakeholders are able to participate in decision-making processes, policy formulation and management of forests (Gobeze, Bekele, Lemenih, & Kassa, 2009; Nath & Inoue, 2010). Kenya adopted the participatory forest management system as a remedy to the

high rate of forest cover loss in the 1990s. Kenya's PFM follows two core objectives (i) preserve biodiversity while at the same time enhancing people's livelihoods; and (ii) ensure the sustainable use of our forests so that present and future generations benefit (KFS, 2016). Donor support has been crucial to implementation of PFM in Kenya. The inception and implementation of PFM was largely supported by development partners such as the Global Environmental Facility (GEF) and Nature Kenya (Matiku, Caleb, & Callistus, 2013).

Following this move, the government enacted rules and regulations, which provided community engagement in forest conservation. This change was in keeping with a global shift in development discourse towards a "sustainable livelihoods" approach.

However, critical approaches to environmental decision-making, such as post-structural political ecology, interrogate the power relations that produce environmental problems and shed light on promises of enhanced community engagement. Therefore, a post-structural political ecology approach is relevant since it helps to understand power relations and how this shape identities, politics and practices in conservation (Castree and Braun (2001). A focus on power relations is critical in understanding how forest benefits are shared among the different social groups in a community and how this contributes to the attainment of sustainable livelihoods. A political ecology approach that focuses on power also draws attention to how social relationships produce a healthy environment for some while others live with less access to resources (Lawhon, Ernstson, & Silver, 2014). Also, a post-structural approach brings consciousness of the different categories and identities that determine politics and practices in natural resource conservation (Escobar, 1996).

By adopting a post-structural political ecology approach to forest management in Kenya, this research provides rich analysis of the relationship between sustainable forest livelihoods and participatory management approaches. This approach will also offer some descriptive insights into local complexities in accessing forest-based livelihoods

This research focuses on PFM in a particular case study: Kereita Forest in the Nairobi region. Through this case study I examine the relationship between PFM and its promise of engaging forest communities in conservation, and sustainable livelihood transformations as narrated by forest-dependent people.

1.2.Context

PFM officially started in Kenya in 2005 when Kereita forests Act of 2005 was enacted. Before colonization forests were part of communal land and were considered part of communal assets. Forest demarcation was undertaken during the colonial period for protection from supposedly destructive Indigenous practices, to prevent European settlers from obtaining private ownership, and to generate revenue for Kereita forest Department through sale of timber and other forest products (Kabugi, 2014).

During the colonial era several forest regulations were passed to allow settlers access to forest resources. In addition, control over forest resources was consolidated under Kereita forest Department and hefty penalties were imposed on people who illegally accessed forests. Also, the administrative structure for enforcement through forest armed guards and Kereita forestry Advisory Committee (FAC) were defined. Finally, decision-making powers were placed under the direct responsibility of a cabinet Minister, hence entrenching forestry matters at a national level. During the post-colonial era forest management objectives shifted to: catchment protection; industrial forestry development; and protection from encroachment by local communities (Mugo, 2014).

In the process of alienating forests by Kereita forest Department, indigenous people who included both forest dwellers and non-forest dwellers were displaced from their land. In the case of forest dwellers, this displacement meant total loss of livelihood while non-forest dwellers lost access to forest products and services such as protection, fodder, honey, and water, fuel wood among others (Castro, 1995). Kereita forest Department claimed land without considering native community rights and instead categorised communities as either illegal squatters or tenants-at-will of the Crown (Kabugi, 2014). The provisions of this law limited further reservation of native lands by Kereita forest Department. Consequently, indigenous people were confined within native reserves and were restricted from accessing large forest blocks, which denied them of their livelihoods. As a result of reduced land, over-exploitation of forest resources in the reserve areas increased (D. Anderson & Grove, 1989). Castro (1995) explained that Forest Department attempts to implement

afforestation programmes in native reserves was met with hostile resistance from local native councils as it was perceived as overstepping the Councils' roles. However, forests within native reserves were gazetted,[1] effectively excluding the last opportunity for indigenous people to access forest produce.

Conflicts arose between Kereita forest Department and the local administration due to the denial of access and compensation for the loss of native rights. These conflicts were particularly intense in the 1940s and 1950s due to rising political consciousness and the re-assertion of native rights. In some areas where political tension was high, limited rights such as those for grazing, cultivation and fuel wood were granted to the local populations (Castro, 1995). The colonial command and control system of governance has continued until now through the revised forest legislations.

1.3. Putting PFM into context

Forests play a key role in communities' livelihoods by providing a range of forest related goods and services (Ghate, 2004). Traditionally dependence on Kereita forest has mostly been for subsistence use and in a few cases for low-level commercial purposes. However accessing forest resources in Kenya has been characterized by struggles between the state and communities both under the colonial era and post-colonial governments (Barrow, 2002). Post-independence state forest departments were set up to manage forest reserves and maintain colonial authorities' 'user rights' to valuable hardwood timber and in part protect watershed, ecosystems and habitats (Sunseri, 2005; McGregor, 1991). However, increasing pressure on forests over time saw Kereita forest Department introduce permit-based access system in the late 1980s, further sidelining local communities' customary management systems and rights (Barrow, 2002). As pressure on land and forest continued to increase, the permit-based access rights were soon compromised; people encroached on forest land and started cultivation which caused massive degradation (McGregor, 1991). In response to the destruction, Kereita forest Department reacted by evicting the encroachers from Kereita forest and this resulted in further conflicts.

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[1] Gazetted forests are those that have been declared state forests through a government notification paper known as a gazette.

These problems were being experienced at the same time as issues of environmental sustainability and local participation in development were receiving global attention. A participatory system of forest management held the promise of reconciling the government and community positions, and it was seen as the solution to halting deforestation and reducing conflict (Barrow, 2004). Therefore, over the last few decades Kenya, like other developing countries in Africa and Asia has been promoting PFM (Schreckenberg, 2009).

At the outset the promotion of PFM was motivated by an interest in improving forest conservation status through a reduction in degradation and conflicts. Later, improving the livelihoods of local people through enhanced participation and influence over forest access became part of the rationale for PFM (Arnold, 2001; Thenya et al., 2017).

This shift in focus to livelihood improvement happened within the global focus on poverty reduction and the recognition that many of the world's poorest people reside in and around forests hence situating forests as an important resource in poverty alleviation (Sunderline et al., 2005; Hobley, 2006). PFM was perceived to be an obvious way to achieve poverty reduction due to its direct engagement with local forest communities and the perceived contribution of forests to economic development (Sundar, 2000).

Despite this shift in focus, the motivations for governments to take up community-based management approaches to forest management have been criticised. Firstly, participatory initiatives have been viewed as a way for civil society to attempt to persuade governments to adopt equitable and democratic processes as has been seen in India (Damodaran & Engel, 2003). Secondly, Sundar (2000) argues that participatory process is just a way of governments "to turn from coercion to consent" given the limited alternatives in resolving constant conflict between government staff and communities. Here, PFM is a way for government to disguise its control and reduce resistance from forest-dependent communities. This argument is aligned with the suggestion that the capacity of the state to enforce regulations over forest resources is limited so the involvement of local communities could be an effective way of asserting some measure of state control over such resources (Angrawal & Gisbon, 1999; Arnold, 2001). However, Agrawal (2001) argues that even though PFM indeed functions as an extension of state power, there is still 1

possibility of it creating new opportunities for involved communities and potentially facilitating the construction of new environmental subjectivities.

The above reflections on the PFM approach indicate it's a process characterised by contestations, particularly between the state and communities' dependent on forests. The link between participation, forests and sustainable livelihoods therefore is a contentious nexus.

1.4. Putting forest livelihood into context

Livelihoods opportunities are generally perceived as a means of alleviating poverty. Alleviation of poverty in association with forest resources fall into two categories according to the Food and Agriculture Organization of the United Nations (FAO, 2003):

i) Poverty mitigation or avoidance - use of forest resources to meet subsistence household needs during emergency periods or seasonal periods of low income. This means forests enable people to avoid falling into poverty.

ii) Poverty elimination - this is use of forest resources to help lift households out of poverty by functioning as a source of savings, investments, accumulation and asset building, and increases in income and well-being.

However, the FAO (2003) also acknowledges that the above definitions of poverty alleviation do not convey the complexities of understanding poverty in the real world. Therefore it is important to investigate several approaches of conceptualising livelihoods as a means to poverty alleviation. First, (Ellis, 2000, p.7) takes an expansive approach to livelihoods, defining the concept as "the things that comprise "the assets (natural, physical, human, financial, and social capital), the activities, and the access to these (mediated by institutional and social relations) that together determine the living gained by the individual or households". This definition stresses the means to livelihoods rather than the outcomes thus undermining the fact that poverty is a typical outcome measure of livelihood performance. On the other hand, Chambers (1983) defines livelihoods as capacities, assets and activities required for a means of living.

The above definitions show that livelihoods are achieved through access to different ranges of capitals which include economic, natural, human and social (Scoones, 1998). Often, the term sustainable livelihood is used in livelihood discussions. The idea of sustainable livelihoods emerged in the conversation about putting the last first (Chambers, 1983) in development practice following debates on sustainability issues and development alternatives in the 1980s (Scoones, 2009). Putting the last first according to Chambers (1983) is about allowing the local people to define their development needs as opposed to having outsiders such as government and donor agencies defining their needs. As a result, the involvement of local people and a livelihood focus were incorporated into global sustainability debates.

Anchored in market-driven and neo-liberal approaches is the sustainable livelihood framework, which is popularly used in most livelihood studies. The sustainable livelihood framework emphasizes the economic attributes of livelihoods as mediated by social-institutional processes (Scoones, 1998). The framework links inputs (capitals or assets) and outputs (livelihood strategies), which are in turn to outcomes, which are then combined with poverty lines and employment levels within wider framings (well-being and sustainability). Scoones (1998) argues that the input-output-outcome elements of the sustainable livelihood framework could be easily linked through economists' models.

FIGURE 1: SUSTAINABLE LIVELIHOOD FRAMEWORK (SCOONES, 1988, P.4)
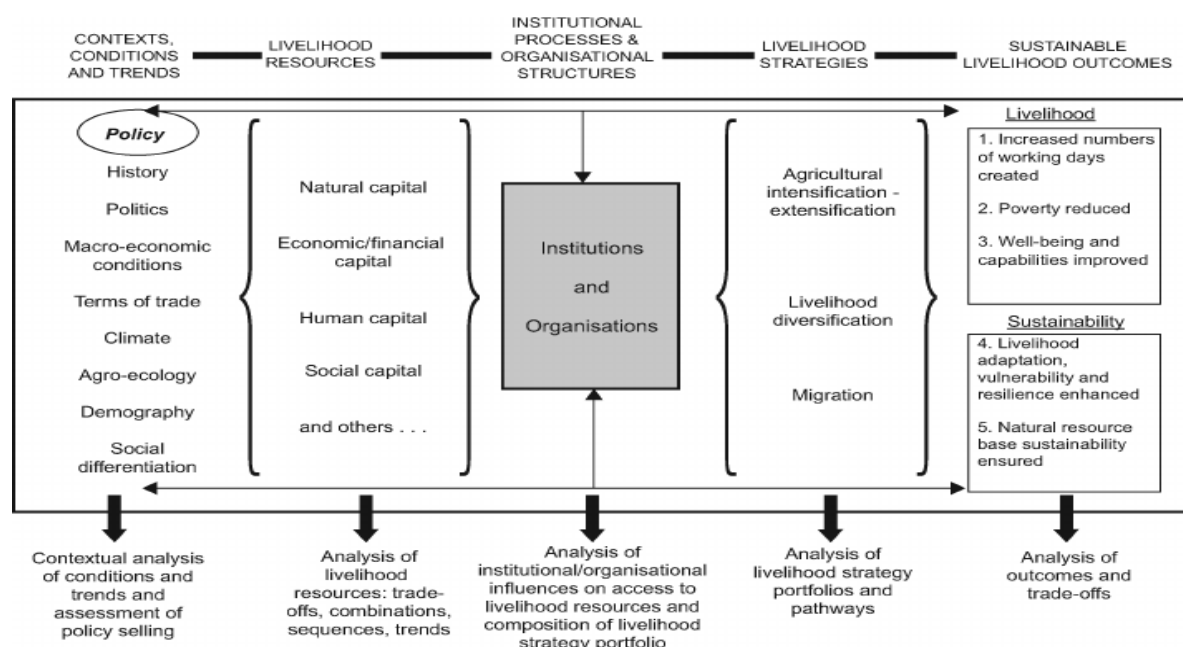
However, the analysis of livelihood through the sustainable livelihood framework misses out on the wider social and institutional dimensions which are important in understanding community livelihoods since the aspects of capital and assets are firmly in the domain of economic analysis (Scoones, 1998). In addition, (Scoones, 2009) claims that this livelihood approach lacks engagement with processes of economic globalization, lack of attention to power and politics and the failure to link livelihoods and governance debates in development. Thinking about how the future projection of livelihoods is important in enhancing livelihoods in the long-term. To address this, Scoones (2009) suggests there is need to re-energize livelihoods perspectives with a new foci and priorities to meet these new challenges. The framework is important for demonstrating linkages between different livelihood processes and it forms a basis for exploring how livelihood perspectives could be improved.

1.5. Case study: Kereita Forest

This research was conducted in Kereita forest in Kiambu County, Kenya. Kereita Forest is in the Lari District of the Kiambu Forest Zone, in the Central Highland Conservancy. Kereita forest forms part of the Kikuyu escarpment forests within the Aberdare Forest Reserve. It lies within 1^0 03' and 1^0 09' South and 36^0 49' East (GoK, 2010).

FIGURE 2 MAP OF STUDY AREA

Map of study area
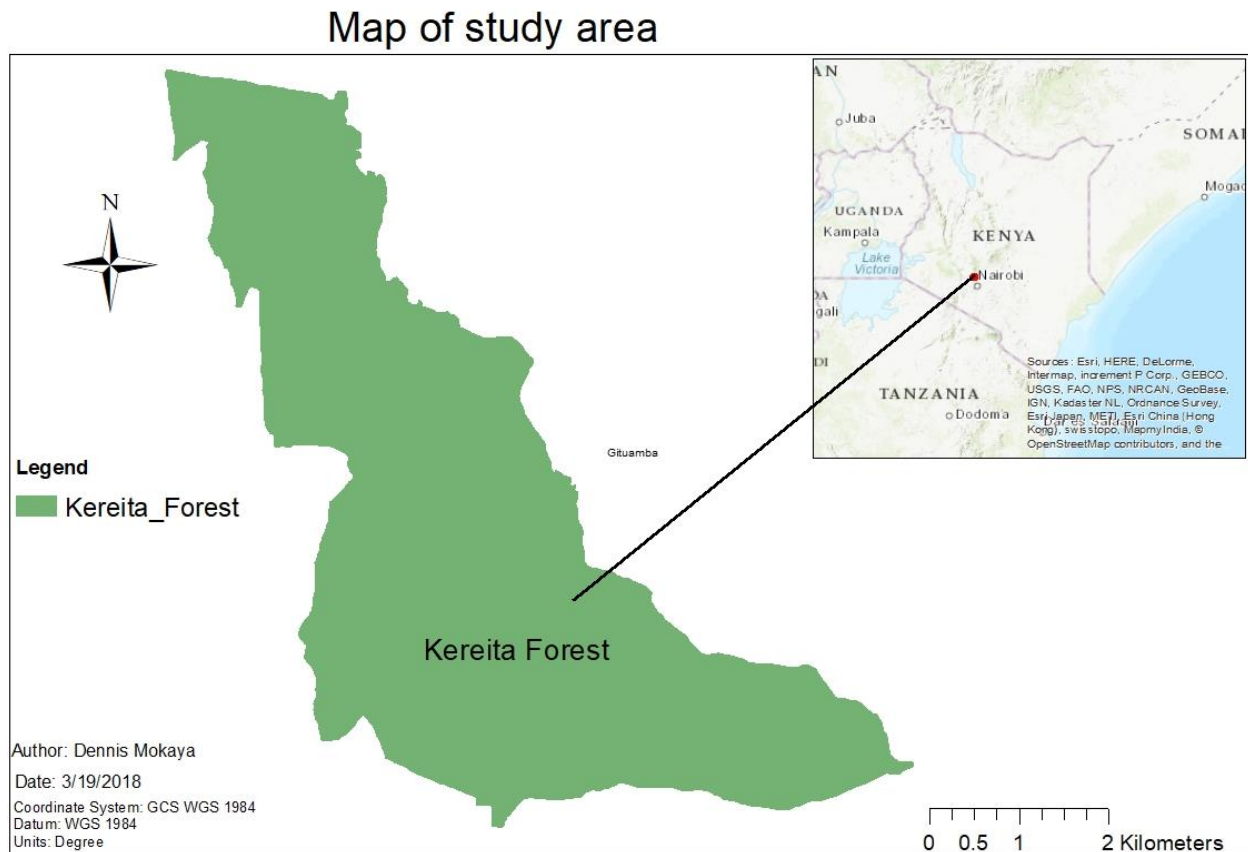
The Nairobi-Nakuru Highway forms its western border with a small part of Kereita forest extending and running parallel to the highway from Kijabe to Uplands area, while to the east, it borders the Uplands Forest Station (GoK, 2010). Kereita forest covers a total of 4,722.6 hectares. Kereita forest is divided into three zones namely Bathi, Gatamaiyu and Nyanduma. Kereita forest lies within the Upper Highland Zone and forms an extension of the Aberdare range, lying at an altitude of 1,800 metres above sea level. The area receives an annual rainfall of 1,000mm to 2,000mm. The high precipitation levels and the rich volcanic soils in the area support agricultural activities, which are the main activities of Kereita community. In addition, Kereita Forest serves as a vital resource to Kereita forest-adjacent communities for extraction of forest products such as timber, wood fuel, poles and posts, fodder, herbal medicine, and as a grazing ground among other uses (GoK, 2010). Kereita forest, which is part of the Aberdares ecosystem, is an important catchment area in Kenya that provides water to neighboring communities and urban centres

including Nairobi (PFMP, 2010). Kereita forest is also renowned for wide variety of its flora and fauna.

From the 1990s until the early 2000s, Kereita forest, like most forests in Kenya, faced massive destruction that was attributed to illegal logging, charcoal burning and excessive fuel wood collection among other things (KFS, 2016). To curb the destruction the government formed a department known as the Kenya Forest Service (KFS). The KFS and other stakeholders, realised the need to engage local communities in forest conservation. Kereita forest Act (2005) provided for community engagement under a PFM framework. Kereita forest was among the first in the country to engage this approach. Therefore, this makes Kereita forest particularly important in assessing the impacts of PFM on livelihoods due to its long-term interaction with participatory forms of management. Also, the proximity of Kereita forest to Nairobi city and other major towns is a critical factor in assessing how PFM has responded to emerging development issues in the area. It's significant to focus on development since it directly influences forest-related investments such as timber enterprises eco-tourism and recreational sites (Mutune & Lund, 2016b). Using Kereita forest as my case study, I explore how PFM has contributed to livelihoods and how forest access is contested under PFM.

1.6. Research questions

The objective of this thesis is to investigate the impact of PFM on community livelihoods in Kereita. This research is guided by the following main questions:

    i.   What are the processes of accessing livelihoods under PFM?
   ii.   Whose livelihood does PFM enable and how?
  iii.   What livelihood outcomes has PFM caused?

1.7. Thesis Structure

This chapter has covered overarching ideas that relate to this research and provides context for the study. The following chapter will cover the methodological approach that I used to navigate this research. It will include the data collection process and data analysis. Chapter 3 will highlight the processes through which PFM was rolled out and how people have accessed decision-making processes. This is followed by chapter 4 that captures the reality of the PFM processes based on people's experiences on the ground and how PFM impacts on sustainable livelihoods. Chapter 5 is a conclusion of this study; it will provide a summary of the thesis findings, highlight the contribution this thesis to existing literature. Chapter 5 will also outline the limitations of this study and opportunities for future research.

Chapter 2: Methodology and Methods

2.   Introduction

This chapter explains how I conducted my field research in Kenya, it covers ways that I navigated issues of positionality, reflexivity and ethical research. Firstly, I highlight poststructuralist political ecology understandings of knowledge and claims to truth before explaining why I adopted this approach in my research. The chapter will also include what inspired this research, the people I engaged with and why I approached them. In addition, I will discuss how I transcribed my interviews, analysed and presented the acquired information in the thesis. Lastly, I will discuss how I negotiated ethical commitments during the research process.

2.1 Epistemology and Methodology

Epistemology reflects the rules that individuals use for making sense out of their world (Hoffman, 1981). Identifying an epistemological approach is important in research as it sets out the frameworks and assumptions on which the thesis arguments are based.

This thesis follows a post-structural political ecology epistemological grounding and also derives some ideas from social constructivism. Political ecology is an approach that is concerned with the complex relationship between nature and society, and issues of access and control (Peet & Watts, 2004). Political ecology also looks at struggles between environmental knowledge and practice (Robbins, 2011), a focus that is made richer by drawing on post-structuralism. Post-structuralism is a theory that emerged in the 1970s and 1980s to challenge the idea that knowledge production is neutral, an idea that dominated social science research in the 1950s and 1960s. Research in this tradition – known as positivism – sought to be objective and impartial, and maintained the distance between researcher and the researched (Kobayashi, 2003; McDowell, 2010). Post-structuralism, on the other hand, disputes the belief of a universal truth that is waiting to be discovered through neutral research (Becvar, 2003; Woodward & Jones, 2009).

Post-structuralists have also focused on discourse - the "specific ensemble of ideas, concepts, and categorizations that are produced and reproduced, and transformed in a particular set of practices

and through which meaning is given to physical and social realities"(Hajer, 1995, p. 44). Post-structuralists argue that, meaning is unstable and changeable and is situated within discourses, hence knowledge is an expression of the language, values, perceptions and beliefs of the particular communities and contexts in which we exist (Escobar, 1996; Foucault, 1980). This asserts that people inhabit different 'realities' that are socially constructed and therefore may vary across cultures, time and context (Gonzalez et al., 1994). Poststructuralists therefore seek to understand different realities by delineating the ideologies, assumptions and values on which these realities rest (Becvar, 2003).

Poststructuralist arguments converge with those of social constructivism on how meanings are created and produced. Social constructivists also agree that the process by which reality is created is through a person's active experience within certain contexts (Sarup, 1993). Therefore, a social constructionist locates meaning in an understanding of how ideas and attitudes are developed over time within a social context (Gergen, 2001).

Poststructuralists argue that knowledge is entangled with the exercise of power and resistance. Michel Foucault (1980) argued that power operates through disciplinary mechanisms or discourses such that by subscribing to the discourses, individuals self-regulate themselves according to internalized norms and rules of dominant discourses in the society. Therefore, in modern societies, Foucault (1980) claims that social control is achieved through self-regulation and self-surveillance as opposed to force. In addition, power is understood as somewhat fluid; it shifts to rest with different individuals, groups and institutions at different times (Allen, 2004). The understanding of power shifting in this way will be reflected later in the thesis when discussing how the system of forest management in Kenya shifted from command and control to Participatory Forest Management (PFM). In addition, conceptualizations of power by Foucault will help examine the disciplinary effects of global policies, knowledge and ideologies such as participatory development at a micro level.

Together, social constructionists and poststructuralists provide a perspective on knowledge that makes space for multiple, even contradictory, positions to be held as truths (Gergen, 2001; Woodward & Jones, 2009). In addition, both aim to understand and, at times, challenge the power inequalities that privilege particular truths over others (Dickerson & Zimmerman, 1996).

These underlying epistemological assumptions form the basis of the present study since this will help explore issues of knowledge and power, a community of voices and range of meanings held by individuals and institutions in forest management. For this study, a post-structural political ecology approach enables me to further explore people's perceptions of PFM implementation and its performance in providing access to community livelihoods in Kereita forest. Moreover, this approach is useful in examining how people understand nature and how different knowledge compete in accessing natural resources and decision making (Castree & Braun, 2001). Hence, a post-structural political ecology approach is used as a basis for assessing how people's beliefs and values about livelihoods have transformed since the start of partcipatory forest management in Kereita. In addition, the study looks at how power and control are contested in accessing forest resources and supporting livelihoods, how different groups with multiple realities and personal stories engage in forest conservation under the PFM arrangement, and how they perceive its contribution to local livelihoods.

Finally, qualitative methods offer tools that fit with a post-structural political ecology approach that explores meaning, knowledge and power. Qualitative methods, in this instance semi-structured interviews, enable in-depth discussion between the researcher and participants. This approach also calls for reflexivity throughout the research process which includes reflection on self, representation, power relations and politics.

2.1 Research Questions

What livelihood benefits do communities derive from participating in forest management and how are they shared among community members?

      iv.   What are the processes of accessing livelihoods under PFM?
      v.   Whose livelihood does PFM enable and how?
      vi.   What livelihood outcomes has PFM caused?

2.2 Methods- Data collection

2.2.1 Semi-structured interviews

Data for this research was collected through semi-structured interviews with different forest conservation stakeholders. Semi-structured interviews allow the interviewees to construct their own accounts of their experiences by describing and explaining their lives in their own words (Flowerdew & Martin, 2005).

This research is interested in people's long-term experience in implementing participatory forest management hence semi-structured interviews offered a chance for wide ranging discussions on target topics. In addition, this method allowed the researcher to ask the same questions in different ways to explore issues thoroughly; and it also gave interviewees opportunities to explain the complexities and contradictions of their experiences and describe details of their everyday lives (Creswell, 2013; Davies & Dwyer, 2007; Flowerdew & Martin, 2005). Another advantage of this approach is that it allowed participants to raise important issues that I had not anticipated in my interview questions (Silverman, 2013), thus it was possible to explore PFM implementation in more depth.

The aim of the interviews was to understand how individual groups of people in Kereita experience and make sense of their own lives through PFM. Therefore, recruitment of participants was based on people's experiences in PFM.

Participants in this research were identified according to the different groups that hold an interest in the management of the forest. A total of 18 interviews were conducted. Participants were: seven community forestry (CFA) members; two non-CFA members; one Kenya Forestry Service (KFS) forester; two user group leaders; two business owners; two staff of Kijabe Environmental Volunteers (KENVO); and two youth.

Table 1: Participant List

	Code Name	Date Interviewed
1.	Kim	17th July 2017
2.	Peter	
3.	Dan	18th July 2017
4.	Joyce	
5.	Jack	
6.	Brian	
7.	Harry	
8.	Ben	19th July 2017
9.	Nancy	
10.	Innocent	
11.	Julie	20th July 2017
12.	Jane	
13.	Daniel	
14.	Betty	
15.	Max	
16.	Rachael	21st July 2017
17.	Ken	24th July 2017
18.	Paul	25th July 2017

2.3 Positioning myself in the research

Recognizing my own positionality and being reflexive is important in understanding the reality of fieldwork, and for acknowledging that knowledge production is not neutral. Research work is explicitly or implicitly informed by the experiences, aims and interpretations of the researcher who designed the interview schedule (Woodward & Jones, 2009). Positionality as "aspects of identity in terms of race, class, gender, caste, sexuality and other attributes that are markers of relational positions in the society, rather than intrinsic qualities" Chacko (2004, p. 52). When thinking about who to interview, it is important to reflect on who you are and how your own identity shapes the

interactions that you will have with others (Flowerdew & Martin, 2005). Acknowledging my different positions in my research helped me to be reflexive on the power relationships that existed between my participants and me. Questions about my gender, class, history and experience are some of the things I had to reflect on in my interviews to reduce power the inherent imbalances. In this section, I will describe some aspects of my positionality and how this came into negotiation and conflict with those of my participants as I undertook my fieldwork.

First I will describe my background and how this inspired my research project. I spent my childhood living in a village that is adjacent to the Aberdare forest. Our family land borders the forest so I grew up interacting with the forest every day. The road to school, market and other social amenities passed through this forest, so my life was inseparable from the forest. In the 1990s to early 2000s we could access the forest for various resources such as wood for fuel, grazing, timber and recreation without many restrictions. On the other hand, small wild animals such as monkeys and baboons used to cross over to our farms to eat fruit. Occasionally elephants destroyed our crops and leopards attacked our sheep and goats. Around that time, a form of mutual relationship existed between people and the forest.

Around 2003, the government denied people access to the forest, claiming illegal logging and poaching. Those who grazed in the forest, including my parents, were highly affected by this change and most of them were forced to sell off their cattle. About 5 years later, the government put up an electric fence around the forest and new forest rules were introduced which further restricted access. The aforementioned changes faced resistance from the people and conflicts over access ensued. While some people, especially those without large private land, decided to confront the government on the changes. Others including my parents opted for alternative livelihoods outside the forest. Later, the government started asking people to form groups through which they would be allowed into the forest. The groups were given titles such as grazers, eco-tourists and beekeepers among others. With the new rules and a fence around the forest, it was clear that we could not continue enjoying the freedom of entering the forest. These changes discouraged many households from going to the forest. This is the time my family stopped going into the forest due to the lengthy procedures in place and soon after we relocated to the city, which meant I no longer was witness to how the new forest management system was progressing in my village.

I stayed out of forest matters for several years until I had finished university and my career in the Kenyan forestry sector began. In the course of my work, I came to learn that the new forest management system that I had experienced in the village is called participatory forest management (PFM). After some time, my work generally evolved around this idea of PFM. I took part in developing several PFM related documents and I frequently conducted field visits to conduct training and monitor PFM progress. In the course of my work I experienced different and conflicting PFM scenarios, which led me to reflect on my "good" childhood experiences in the forest. I wondered how my community and other communities living adjacent to the Aberdare forest felt about the changes brought about by PFM. So, this project has been inspired by my life experiences with the forest and forest adjacent communities. It is for this reason I decided to locate my research in a place similar to where my inspiration began and Kereita forest presented a good option.

Returning "home" to do my field research in Kereita, I felt the displacement of being between insider and outsider: an insider based on my PFM experience; and an outsider since I am not part of the Kereita community. As a result, the relational position between me and my participants was constantly changing. The Kereita forest environment, the people and culture reminded me of my childhood days and made me feel at home. Sultana (2007, p. 378) writes that in doing research at home, researchers are likely to be placed in certain categories, and the need for researchers to constantly re-negotiate relationships. She adds that commonalities between the researcher and participants help in bridging the gap over time. Despite sharing the same culture and language with the people that participated in my research, it became clear to me that equality was an impossibility in research (Chacko, 2004). I could see that power was constantly circulating through the research relationships (Allen, 2004); at different times, more power rested with me, for example, when deciding the research questions. At other times, like when it came to deciding whether to talk to me, and what information to share with me, more power rested with research participants. Instead of trying to neutralize my power my approach to negotiating inequalities was to become reflexive and humble during the research process so that I was always respectful of my participants. In addition, my research aimed to centre the voices and experiences of the communities involved in PFM. Including long quotes from my participants so they were narrating their own experiences was a way to transfer some of the power to them.

Use of multiple languages was my greatest asset in the interviews, being able to communicate proficiently in three languages namely: Kikuyu, Swahili and English was much appreciated by the participants. I had not foreseen using Kikuyu which is my ethnic language for my interviews since Swahili is widely used as a second language in the research area by people from all ethnic backgrounds. I realized that using the local native language (Kikuyu) would help me gain rapport and form closer relationships with the Kikuyu speaking participants who happened to be the majority. While at first I was worried about using a native language because I had not thought about how to ask my research questions in Kikuyu, I came to appreciate it as the factor that brought richness to my interviews.

My level of cultural knowledge shifted based on each participant's age group. I am well acquainted with basic cultural mannerisms, such as having to greet elders in the community and introducing myself before they would acknowledge my presence and welcoming participants to a cup of tea before or after the interview. However, I was aware of my inadequate cultural knowledge especially when interviewing elderly Kikuyu participants, therefore, I waited to be guided and informed. Being young and conversing about cultural matters was trickier for me because according to Kikuyu traditions, knowledge is passed on through oral traditions at different life stages. Therefore the older the person the more their cultural knowledge.

My experiences doing the research taught me that being open and flexible was of utmost importance in generating respectful, accountable and transformative research (McDowell, 2010). Often when talking about power relations, the assumption is that it is the interviewer who is in the dominant position (Creswell, 2013). However, in my research power was fluid and changed from one participant to another as well as from one interview question to another.

2.4 Ethical considerations

Ethical issues were carefully considered and reflected on throughout the research process. First, I received ethical approval for research as per the standard academic ethical principles from VUW human ethics committee. An information sheet explaining the aims and methods of the research was circulated to my participants before the interview and I briefly reminded participants about their rights as highlighted in the information sheet at the start of each interview. Participants who confirmed their interest to be interviewed gave verbal consent or signed a consent form. The

information sheet and consent form assured participants of confidentiality in the research. Participants' identities were protected through code names using a reference by role, organization, or community rather than by name. In addition, interview tapes and transcripts have been stored securely and are only accessible by the research supervisor and me. The interview records and transcripts will be destroyed in three years.

However, ethical research goes beyond formal university requirements. The second stage of ethics approval was to be context and culturally specific. Before commencing data collection, I applied for research approval from the Kenya Forest Service (KFS)- research department. The department checks if the research objectives and methods meet the institution's ethical standards and are not a duplication of previous research. Unfortunately, I was not aware of this requirement before going to Kenya, and only realised how critical this was when I was told that I could not proceed with data collection without an approval letter from the KFS. At first, I felt frustrated with the delay caused by this application, but after receiving the approval letter, it became very easy for me to receive support from KFS staff in Kereita and other stakeholders working in the forest. This was also important in ensuring accountable research (Silverman, 2013). I also held a courtesy meeting before starting the interviews with the leaders of the Community Forest Association (CFA) and representatives of community based organizations in Kereita to discuss the research aim, data collection process, target participants and expected outcomes. Moreover, the meeting presented an opportunity to gain some goodwill from the CFA and community organizations.

Interview dates and venues were based on negotiation between myself and the participants. All community participants agreed to be interviewed in their local community resource centre. Other participants were interviewed at their offices. Since all interviews were being conducted in public spaces I was not so worried about my safety, however, I always communicated the plan for my day to someone. It was tricky to avoid noisy interview venues for business people so I had to put up with the noise of the saw-mill and hotel operators becoming part of the audio recording. At times like this, I took notes to complement the recorder. Interviews were no longer than 90 minutes. Finally, a summary of my research findings will be circulated to the participants who placed a request through email shortly after submission of this thesis.

2.5 The research processes

The following section relates to how I undertook my fieldwork. I will outline activities during the two months (mid June 2017- mid August 2017) that I was in Kenya. I will describe the process of starting the fieldwork and how I recruited my participants. Following that, I will write about what I did once I came back to the university in terms of how I transcribed, analysed and compiled ideas that are discussed in this thesis.

Recruiting interviewees

In my research proposal I wrote that I will identify participants through the connections I had established before going to New Zealand for studies. However, from my initial conversation with the people I knew I realised that there were more gatekeepers that I needed to contact to get access to potential interviewees. First, I had to get an approval letter from the KFS headquarters to be allowed to conduct research in Kereita. This process took longer than expected but the approval was important in gaining access to the right people. The approval also expanded my list of gatekeepers, so I was able reach participants with different perspectives on the research topic. However, relying on those gatekeepers who represented social groups such as the CFA was challenging since I wanted to avoid a narrow selection of members or being discouraged from talking to others who may have heard conflicting opinions.

To counter this, I held a meeting with the gatekeepers who represented different organisations in Kereita and talked to them about the characteristics of participants I was interested to interview. For each category of participant, the gatekeepers suggested specific participants. Since this was a critical process in my research, I decided to contact suggested participants to ensure that I was reaching people who understood the concepts I was researching and could also confirm that no one was being coerced to participate in the interviews. By contacting the participants directly, I was able to inform them of their interview rights and that interview participation was voluntary.

In a few cases, I also used the snowballing technique to access some categories of participants that I could not access through the gatekeepers. Snowballing involves using one contact to help recruit another contact, who in turn can put you in touch with someone else (Davies & Dwyer, 2007). The initial contacts in my research were friends working in Kereita. This technique was useful in gaining trust and seeking interviewees with particular backgrounds and experiences such as those

in timber enterprises and tourism. After the selection process I shared with the participants the aims of my research, issues I wished to discuss, interview dates and an estimation of how long an interview would take.

My interview questions were guided by an interview schedule prepared before conducting fieldwork; however, a semi-structured approach enabled me to be flexible according to each participant.

2.6 Data analysis and presentation

2.6.1 Analysing and writing

All the interviews were transcribed to get them into a presentable and readable format. Transcribing was not a direct and easy process since I had to translate interviews that I did in Kikuyu and Swahili to English. There are risks of losing original meaning during translation (Temple & Young, 2004) so it is important to consider potential consequences of translation on the final outcome of study. Nonetheless, translators' language proficiency and cultural knowledge and experience reduce risks (Denzin, 2008) and enhance reciprocity which in turn encourages sensitive translation (Larkin, Dierckx de Casterlé, & Schotsmans, 2007).

In this research, I performed the role of the researcher as well as the translator so I was able to retain control over the quality of the translation (Larkin et al., 2007). However, despite my proficiency in the three locally used languages and relevant cultural knowledge, I was unable to find an equivalence of the term 'livelihoods' in Kikuyu and Swahili, partly because of the differing perceptions and understanding of livelihoods in the local language context. During the interviews I chose to avoid the word livelihood and instead used terms and phrases that refer to forest activities such as grazing, fuel wood collection and eco-tourism.

The process of analysing transcripts and field notes was both inductive and iterative. This is a process that involved going back to my field notes and transcripts and taking note of emerging categories and themes. Identified themes provided a means of conceptually organizing my materials but were not an explanatory framework in themselves (Creswell, 2013). My themes evolved as I continued to interpret the data, draw on my field notes about the case study, and reflect on existing research. This back and forth process assisted in selecting significant themes that

answered my research questions. I also used these themes to come up with codes to sort interview transcripts and field notes. Throughout the analysis process, I maintained a reflexive approach in my research in keeping with a post-structural political ecology approach.

2.1 Conclusion

This chapter has described my epistemological framework and the methods I used to gather information on how PFM contributes to people's livelihoods. The chapter also covered my research process and experiences. I have highlighted ethical considerations for the research and methods that I will use for data analysis and presentation. The rest of the thesis examines themes that were identified through the analysis process.

Chapter 3: Forest access and boundary making

3.1 Introduction

The realisation of Participatory Forest Management (PFM) involves a wide range of activities including the establishment of enabling legislative and institutional frameworks. This chapter presents the processes of actualising PFM within established structures. It captures the practice of PFM and the role of the community in these processes. Importantly, the chapter analyses ways that PFM processes create boundaries that control access to livelihoods. This chapter also discusses conflicts that are produced through PFM implementation procedures.

PFM was introduced in Kereita to regulate over extraction of forest resources, which had been causing deforestation and was threatening supply of forest livelihoods. Therefore, the chapter begins with a brief background on how the Kereita community had been accessing forest products before PFM introduction to provide context for understanding the shifts that have taken place since PFM began.

3.2 Participation and forestry management

The focus of participation as discussed in earlier chapters is to devolve power from the state to local people, and to directly empower marginalised people. Participation is promised as a way "to confront and transform centralised power" (Chambers (2005, p. 115). However, there are diverging views regarding participation in terms of "who it is expected to involve, how it is supposed to be achieved and what is expected to be attained" (Dolisca, Carter, McDaniel, Shannon, & Jolly, 2006, p. 332). Participation entails an active process where "client" or "beneficiary" groups influence the management of natural resource projects with the aim of improving their livelihoods (Dolisca et al., 2006).

Effective participation in decision making requires members to be actively engaged in the topic under discussion and ensure that their views are considered in the agreed decisions (Warah, 2008). However, there are a number of constraints to genuine participation in PFM as relates to how interactive the process of participation is for community members. Agarwal (2001) has claimed that government and other agencies typically position community members as passive participants only. According to Fabricius (2004), passive participation involves the process of informing the

local communities about the actions that will take place or what is already happening. In this regard, the information communication is to allow participants to understand what the state is planning or actions that it has taken in relation to PFM.

The second constraint is when the government understands the community as consultative participants. Pretty (1995) points out that consultative participation is a process whereby the government consults the local communities participating on issues regarding forest management. In this case Pretty (1995) argue that the state agents defines the problem as well as the solution, and they also have the mandate to act on or ignore responses provided by the people. As the external agents are not under any obligation, they do not allow any sharing of decision making in the process of forest management with the local communities.

Another form of participation in forest management is activity-specific participation. Under this form of participation in forest management, Pimbert and Pretty (2004) state that people living adjacent to forests are grouped together to achieve specific predetermined goals. This form of participation is short term and changes from one activity to another.

Implementation of PFM as a decentralization approach in the forest sector aims to enhance equity in decision making and increase access to forest benefits. Participation in decision-making and participation in forest conservation and economic benefits are claimed to be main factors that influence participation in the forest management (Coulibaly-Lingani, Savadogo, Tigabu, & Oden, 2011).

However, Movuh (2012) claims that implementation of PFM has been a tool for exerting state control over forest resources since its policies are still anchored in state control over forest resources. In India, (Naidu, 2013; Sarin et al., 2013; Sundar, 2000) note that despite acceptance of community involvement in forest management, restrictive governance of forest policies have continued to suffer from colonial control and restrictive access has continued to be the dominant conservation strategy. Movuh (2012) also supports the idea that limited access to decision making by local communities is evidence of strong state control. Also Tipa and Welch (2006) claim that where government retains ultimate power participatory decision making system is endangered. Limiting community in terms of decision making and participation, has implications for both

efficiency and equity (Poffenberger, McGean, & Khare, 1996). However, the administrative structure and empowering the community forest is likely to improve decision-making processes.

3.3 Implementing PFM

Management of forests before PFM was characterised by the use of force and dominance by state agents as noted in the introduction chapter and as expressed below by an official of the Community Forest Association (CFA).

> In the late 1980s and 1990s when the government used force to control forest resources, the forester and forest guards had the powers and freedom to do anything including taking forest land and cutting down trees. The forest guards could easily be compromised so people also used to go to the forest with the intention of destroying it. (Julie, 19 July 2017)

While access to the forest for goods and services before PFM was illegal, my research participants expressed that they could still access the forest since the community considered Kereita forest to be a community asset that supported everyday life and was part of people's experiences. A participant shared his connection to the forest where the father used to make woven chairs, which were associated with Kikuyu culture, for use by the community.

> I have known this forest for many years. During the colonisation era we were restricted from using the forest. However, even then we used to get forest products illegally because there is no way we could have lived without the forest. My father used to make the woven Kikuyu traditional chairs and we used to get the trees from the forest. (Joseph, 17 July 2017).

Grazing in the forest is another livelihood activity that has been supported by the forest. Households generate income by selling dairy products from cattle and sheep that graze in the forest. One of my participants explained that he was able to get education because of the resources provided by the forest and the microclimate it created:

> When I was young we used to graze cows in the forest and my parents could sell the cows to pay my school fees. After completing high school I farmed cabbages on my father's land next to the forest and I got a bounty produce, which I attributed to the good forest microclimatic effect on the farm. I sold the cabbages in the market and got money to pay my college fees (Kim, 17 July 2017).

In Kenya, PFM was initiated in the late 1990s and early 2000s through donor-funded projects targeting a few forests as pilot areas. Kereita forest was one of the selected pilot areas. PFM piloting projects continued for 10 years before new forest laws were enacted in 2007. The lessons from these pilot projects informed the development of the Forest Act 2005 (enacted in 2007, and revised in 2016) and PFM guidelines[2] for the implementation of PFM in Kenya. The Forest Act provided for community participation in forest management and formation of CFA. Each forest is allowed to have one CFA. The CFA is a registered group comprised of members of the community living adjacent to the forest in question. Its membership is drawn from community-based groups, organisations and individuals. Community groups such as those engaged in beekeeping, eco-tourism and water harvesting among others that join the CFA are referred to as 'user groups'. Each user group usually has its interest in the forest, which could be grazing, farming, bee keeping, or eco-tourism among other interests. PFM is tagged to local level forest management units known as forest stations (Forest Act 2016). Each forest station is managed by the Kenya Forest Service (KFS) and a forester, also referred to as the forest manager, who is in charge of day-to-day activities in the forest.

Implementation of PFM is based on an eight-step process (KFS, 2016), namely;

1. Identify community and resources.
2. Facilitate formation/strengthening of CFA and other relevant community structures.
3. Assessing forest area and community.
4. Prepare and launch forest management plan.
5. Negotiate and sign Forest Management Agreement.
6. Implement the plan.
7. Review and revise the plan on the basis of experience.
8. Impact monitoring of PFM.

The steps generally reflect the PFM processes that are expected to enhance forest conservation and livelihood improvement. Important to this process is the development of a participatory forest management plan and a forest management agreement, which are approved and signed by the KFS and CFA. The management plan is a five-year strategic document that illustrates projects to be

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[2] PFM guidelines is a national document that provides instructions to stakeholders in Participatory Forest Management on how PFM should be implemented

implemented in the forest. The forest legislation requires CFA to develop a management plan to be allowed to participate in forest management. Forest zonation is one of the activities that are carried out during development of the management plan. Zonation involves physical demarcation of forest into differentiated zones for protection, conservation and utilization within the forest. The zonation plan determines livelihood activities to be implemented in specific zones.

The forest management agreement signed between the service and the community forest association acts as a legally binding document. The agreement among other provisions specifies the authorized activities in the forest, community user rights and management of costs and benefits. Upon signing the forest management agreement with the KFS, communities acquire varying degrees of responsibility and decision making (KFS, 2007).

The forest user rights are regulated through the forest regulations (KFS, 2009). The Regulations control activities such as water abstraction, grazing, fuel wood collection, bee keeping and herbal medicine extraction among others. Also, the regulations dictate fees and the necessary permits to be paid by forest users and include penalties for lawbreakers. However, the KFS holds full ownership rights including the power by the KFS director to terminate the forest agreement and revoke a particular user right.

The initiation of PFM in Kereita involved formation of community institutions and alignment with PFM legal provisions. Before PFM several community groups with different interests engaged in conservation activities in the forest such as the Kereita Forest and Wildlife Conservation Association (KFWCA); Kereita Forest Management and Conservation (KIFOMACO); and Gatamaiyu Wildlife Conservancy (GWC). To allow implementation of PFM, the different groups together formed the forest CFA known as Kereita Community Forest Association (KICOFA), which is the community institution that collaborates with the government and other stakeholders in PFM implementation in Kereita.

Forest resources are categorised broadly into two types, namely: plantation forests and natural forests. Plantation forests comprise of exotic trees Pine,Cedar and Cyprus while natural forests are comprised of indigenous trees such as Prunus Africana and Podocarpus spp. Kereita has both natural and plantation forest areas. Natural forests present opportunities for extracting products

that may include wood and non-wood products, grazing and hunting and non-extractive forest values, for example ecotourism, biodiversity conservation, research, social and cultural values and carbon sequestration (KFS, 2010). At the establishment stage plantation forest activities allowed include crop farming and later grazing and recreation among others. In general, natural forests are used for conservation purposes and plantations are used for logging and wood supply.

Under PFM, gaining access to forest products depends on the type and value of the product. Some products are accessed through the local KFS forest manager's office and others through KFS headquarters (KFS, 2009). For instance, to access fuel wood, PELIS plots, fodder, water, or apiary sites, the community applies for a permit and pays fees to the forest manager. In contrast, access to products that are for commercial purposes or of higher value, such as timber and ecotourism sites, is handled by KFS headquarters.

However, there were distinct differences in how people accessed the forest before PFM and after its introduction. As one participant described, there was strict policing under the command and control system:

> The forest 'police' [guards] used to detain our cows and sheep when they found them grazing in the forest. We managed to graze in the forest through a hide and seek game with the police. Later when the government realised that they couldn't stop us from getting our cows into the forest we were asked to form an association through which we could access the forest. (Joseph, 17 July 2017).

This shows that the introduction of PFM was not to provide access but rather to change the means of access to the forest. PFM introduced formal processes to curb forest destruction and encourage community participation in forest management. Access to forest products is now regulated through forest rules. PFM ceased the use of force by introducing regulations that guide how the forest is accessed. Julie described current access in this way: 'Now people pay fees to the KFS for all livelihood activities including grazing, fuel wood collection, plantation establishment and livelihood improvement scheme (PELIS)'[3] (Julie, 19th July 2017). The efforts put towards

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[3] PELIS is scheme where the government allows the community to do crop farming in forest areas under rehabilitation as they take care of young trees usually for 3 to 4 years.

ensuring the success of PFM initiatives were meant to aid in forest management, and assist communities residing in areas adjacent to forests improve on their livelihoods by collaborating with the national forestry department (Thenya, et al., 2017).

3.4 Community participation and decision making

The CFA membership is comprised of individuals and different interest groups referred to as user groups. User groups are mainly community-based organizations that participate in various activities in the forest such as bee-keeping and eco-tourism. According to the CFA formation manual (KFS, 2009) CFA members elect an executive committee that runs the day-to-day activities of the CFA and set rules that guide its activities and penalties in case of infringement by members or outsiders. A PFM framework allows stakeholders involved in forest management to be involved in decision-making processes. PFM has granted the community opportunities to take part in some decision-making processes in regard to forest conservation. The main involvement of the community is in development of the management plan and agreements. During this process, the community, is able to make decisions on the types of activities that are allowed in specific areas of the forest. As Daniel (19th July 2017) described, "before initiation of PFM it was only the forester and his officers who used to make decisions, but now the community is included in making some of the decisions".

PFM made it possible for the community to be engaged in some level of decision making. Despite the involvement of the community in these processes there are some cases where the community views are overlooked by the government during allocation of various user rights. Several participants cited a case where an area was zoned for plantation establishment in the forest management plan but later the government issued an eco-tourism permit for the same area without consultation with stakeholders (Julie, 19th July 2017; Betty, 20th July 2017; Harry, 19th July 2017; Kim, 17th July 2017). The participants expressed their dissatisfaction with this decision by the government. This shows that the government still holds the ultimate power to decide what forest activities take place and where (Mutune & Lund, 2016b). The KFS seems to hold the power to issue permits and licences, and decides on prices, amounts and specific procedures to be applied in extraction of forest products (Mutune & Lund, 2016a).

As indicated by Odera (2004), the state imposing restrictions on some forest resources often leads to conflict with communities. This was manifested in the relationship between the Kenya Forest Service (state agency governing forest resources nationally) and the Kereita forest CFA where the state has the absolute power when it comes to governance and sharing of valuable resources such as timber and forest investments.

In Kereita the current conflicts are around establishment of forest investments whereby the government seems to fail to engage the community in making decisions about the forest in a participatory manner. At the inception of PFM a section was identified and mapped by both the community and the KFS for the PELIS programme; later it was given to a private developer by the KFS to construct an eco-lodge and other recreational activities such as the zip line as highlighted by my research participants. Julie (19th July 2017) noted that it was the community desire to plant crops on the PELIS area however they were stopped since the trees would have interfered with the hotel zip line. This issue was a source of contestation between the government and the community. Rasolofoson, Ferraro, Jenkins, and Jones (2015) noted that differing interests and a lack of transparency and participation in the decision-making process can cause conflict and mistrust between the stakeholders.

Further, there appears to be a lack of transparency on the part of the government about the eco-lodge investment. Harry (19th July 2017) felt that the government through the KFS had an interest in the location of the forest eco-lodge, stating, "the location where the lodge was supposed to be built according to the forest management plan is not where it is now". Paul (24thJuly 2017)) also reported that there was a lack of awareness about the lodge "there was no awareness creation during the design of the lodge. For example, the zip line was to pass through the same area that the community had identified for rehabilitation" (Paul, 24thJuly 2017). This means that if the community had been consulted during the design they would have disputed the changes regarding the location of the lodge. In addition, Paul (24th July 2017) expressed his dissatisfaction with the approval given by KFS to allow construction of a road to the lodge through a biodiversity area without consideration of the potential ecological disturbances. The above issues with the eco-lodge investments were reported to have resulted in conflicts between the CFA, the KFS and the private investor. The CFA decided to continue with the PELIS programme but this interfered with the eco-lodge zip line business. The lodge owner reported the case to the KFS headquarters since the KFS

had issued a licence for the eco-lodge to operate in the area that was now a source of conflict within the community. (Harry, 19th July 2017). 'To calm down the conflict the KFS stopped the CFA from carrying on with PELIS activities but the eco-lodge is still operating' noted Harry (19th July 2017). The approach used to resolve the above conflict as referred to by Harry as a calming down of the CFA shows the dominance and power the KFS has over the CFA.

From the findings, claims for exclusion from decision-making regarding the lodge and the unresolved conflicts could be affecting the relationship between the KFS and the CFA. In addition, self-interests within the CFA seem to complicate the conflicts surrounding the establishment of the eco-lodge and further endangers trust within the CFA. Brian mentioned that:

> The eco-lodge investor is a member of one of the CFA user groups even though he is an outsider and does not qualify as a member of the community…this makes it difficult for us to openly criticise things that we don't like about the lodge or claim that we have not been involved in the lodge establishment (20 July 2017).

The above case raises concerns about the level of trust within the CFA and between the CFA and the KFS. Odera (2004) has stated that competing interests among stakeholders might cause conflicts in forest management and ruin interpersonal relationships among PFM stakeholders. As (Nirmal, Shrestha, Acharya, & Ansari, 2009) have also noted: mistrust is a hidden cause of conflict in participatory resource management and when trust is broken within PFM implementing agencies, conservation efforts are likely to be compromised (Thenya,2014). Another participant also raised concerns about the lack of trust among stakeholders and that the ongoing developments in forest may cause illegal activities in future:

> The eco-lodge has opened the forest for everybody...currently we have no control over who comes in and what they bring into the forest and this is a threat to the forest and us. For example, if poaching takes place now in the forest, we are not able to account for who did it and how it happened yet the government would want to blame us (Betty, 20th July 2017).

Having many stakeholders in a management process means more interests need to be integrated into the process for it to be successful. Exclusion of the community in key decision-making regarding Kereita forest raises concerns about the effectiveness of PFM in enhancing forest access and reducing conflicts. Also the forest management plan, as a guiding document to activities taking

place in the forest seems to lose its effectiveness since the KFS has the power to determine where activities take place without consulting the CFA, for example in the case of the eco-lodge. Lack of integration of PFM into government operations was highlighted by a government employee: Jack (18th July 2017) stated that the 'PFM has not been fully integrated into the government plan so it's difficult to implement it effectively'. This lack of integration could be one factor challenging the effectiveness of PFM implementation.

To aid institutional alignment, the KFS and non-governmental organisations have championed education programmes. The education programmes aim to inform the community and other stakeholders about new forest regulations, the PFM requirements and ideas of livelihood improvement. National and local NGOs have mobilized funds from donor agencies to operationalize PFM in Kereita, especially the development of management plans and agreements (Paul, 24th July 2017)). These educational programs, combined with PFM, sought to encourage a nurturing approach to the forest. A CFA official stated that these initial training activities were significant in creating a friendly environment for PFM.

> "Previously forests used to belong to the government, and the access was very limited and the forest guards were strict on locals attempting to access the forest resources, thus my view then was that forests belonged only to the government" Kim (17th July, 2017).

Ben (19th July, 2017) described how things changed with PFM, saying "PFM created a means of engaging people in their own livelihood endeavours… It reversed the old practice where community was seen as an enemy of conservation".

However, the education approach that was adopted by PFM was reported to have ignored local traditional knowledge systems. The existing literature about PFM has highlighted community ignorance, cultural rigidity, age, and incapacity of the community forest user groups as sources of conflict (Acharya & Upreti, 2015; Ann Zanetell & Knuth, 2004). Thenya (2014) has stated that the ignorance of most community forest association members has allowed governance of the CFAs to be captured by some influential local elites who hardly practice equality and inclusion. High illiteracy levels affect participation in the decision-making process resulting in conflicts in which members feel left out or marginalized.

When asked to reflect on issues occurring under PFM, Joyce, a member of the CFA, argued that rather than community ignorance, PFM did not use familiar ways of creating awareness hence the ineffectiveness of the approach. PFM failed to integrate local context to the management structure. The participant reflected on the following participatory data collection process that she had conducted with the community on forest management.

> The language used is difficult for the old people who had grown up knowing the forest in a certain way. The only people who have knowledge advantage about PFM are the young people because they have gone through the English system of education via books. The old system of knowledge that the elderly people are familiar with is practical learning. So training the old using books doesn't work, PFM needs to communicate to them using their language. You know the old tell a lot through stories and this is the only way information can be passed to the next generation. Like me, I have known PFM as a member of the CFA and interacting with KENVO, otherwise my fellow villagers who are not members don't know it. PFM has disregarded traditional knowledge; it's dominated by conventional western knowledge, which at times does not work well with the local system. I wish we could have been taught in our local languages like the way I'm speaking to you in Kikuyu, it makes me comfortable to share what I know. For example the interests of Kikuyu as farmers and Maasai as pastoralists is different so PFM needs to adjust to be context specific. Recently we conducted village interviews on the review of the Participatory Forest Management Plan (PFMP) using questionnaires that were generated by the consultant. So I can't say that this is a truly participatory approach since the questions were based on an external point of view. We had to follow the questionnaires as they were. During the interviews some participants would ask us important questions or ask why certain questions were not phrased in a certain way but there is nothing we could do to accommodate them since the questionnaire was fixed. For example imagine approaching an old lady and talking to her about issues of livelihood…. I can't translate livelihood into Kikuyu. Use of new terms sometimes creates confusion … we know livelihood in different terms like water, clean air, timber, etc. Even before the rules and PFM people used to conserve their forests well. (Joyce, 18th July 2017).

Similarly, Daniel (19th July 2017) argued "PFM claims to be participatory, yet it seems to give limited opportunities to interact with traditional forms of knowledge, with conventional knowledge". This could explain the lack of interest by some community members to join the CFA (Betty, 20th July 2017; Joyce, 18th July 2017).

3.5 Boundary making

> We are still restricted from accessing our forest…the colonial element of command and control still thrives indirectly…it just transformed itself into PFM. …PFM came to enable community access to forest resources and at the same time control us through its rules and regulations. The rules and financial weakness automatically create hurdles for the community to champion for change and invest in high value products from the forest (Ben 19th July 2017).

Boundary making is the first step in commencing PFM. In the initial stages, the boundary making involves demarcation of the village and forest boundaries. Access to forest products is also regulated through demarcation of the forest. An electric fence is often used to separate the forest from the community land. Ndambiri (2015) notes that despite electric fences being constructed in some of the forest blocks in Kenya, communities may not always see the fence as a benefit since it is a double-edged tool that prevents wild animals from destroying crops on people's farms on the one hand and restricts access to the forest on the other.

PFM further demarcates forests through forest zonation whereby certain activities are allowed in some areas and are restricted in others based on zonation boundaries (KFS, 2016). "Boundaries close off that might otherwise flourish; "boundaries both foster and inhibit freedom"; and they both 'protect and violate life" (Connolly, 1995, p. 163)'. Saito-Jensen and Jensen (2010) claim that boundaries create insides and outsides thus boundaries can have serious consequences for those excluded if their livelihoods depend on the resources available inside boundaries.

One of the research participants spoke of her fears about how prolonged exclusion of the community from decision-making can eventually create 'boundaries' that will stop the community from accessing the forest;

> People managing the forest have failed us. For example, if some people introduce strange wildlife they might attack women while collecting. Recently our cows were attacked by hyenas, since I was born I have never heard of hyenas in this forest so we are wondering where they have come from. It's hard to tell where these hyenas have come from, perhaps from other parts of Aberdare Range, through normal ecological patterns or they have been

introduced. I wonder if this is a way of creating, indirectly, barriers for kicking people out of the forest slowly. I have already lost some of my cows and sheep to hyenas. If this continues to happen I will eventually give up on grazing in the forest (Betty, 20th July 2017).

Mustalahti and Lund (2009) argue that diverging stakeholders interests in demarcation of forest boundaries is a matter of contestation. While literature about participatory processes has explored the ways boundaries are formed around who is in and out of communities, there is less linkage on how physical boundaries (such as fences) are naturalized through participatory processes, and the ways these boundaries in turn shape the 'participatory' process.

The forest rules and PFM implementation also entrench boundaries, particularly around who can and cannot access high value products, such as timber and eco-tourism investments. The CFA participants reported that the CFA does not qualify to bid for timber-harvesting tenders because they do not own sawmills (Joseph, 17th July 2017; Harry, 19th July 2017; Julie, 19th July 2017; Joyce, 8th July 2017; Ben, 19th July 2017). The KFS requires those who wish to bid for timber harvesting to first show proof of owning a sawmill to ensure that logs cut from the forest are processed in efficient ways. This requirement to have sawmills creates a boundary around who can access high value products; poor communities are often excluded as they are not unable to purchase the capital-intensive sawmills.

Harry (19th July 2017) reported similar practices, saying "during timber harvesting the saw millers would leave behind the branches for the community to collect fuel wood but they carry everything". Kim thought this practice of taking the fuel wood, and other exclusions of the community, reflected that PFM was participatory in name only:

In plantation areas, we stop crop farming, which is a high livelihood activity after the three years of plantation establishment, after that the only activities we are allowed to do in the plantations is fuel wood collection and grazing. We are completely excluded from any decisions relating to the trees even though we are the ones who plant [them]. It seems like the government indirectly pushes us to focus on indigenous sections so that we can take care of the indigenous trees and the Kereita forest can still continue looking pristine and

well conserved to the general public and the outside world while the government enjoys all the logging benefits from plantation forests (Kim, 17th July 2017).

The timber harvesting rules are also discriminatory as argued by one of the participants 'the timber harvesting rules are not good, the community plant trees….but when it comes to timber harvesting the community does not benefit in any way' (Ben, 19th July 2017).

3.6 Procedural conflicts

While PFM has been successful in resolving conflicts that existed during its initiation such as those associated with restricted control, it has also contributed to the production of new conflicts that are mainly grounded in power contestations.

In the course of engaging different stakeholders in PFM participatory management of forest resources, conflicts are likely to arise. The PFM participatory management system in Kenya involves collaboration of different stakeholders including government departments, community-based organisations, non-governmental organisations, donor agencies and the private sector. The role of each of these stakeholders in the PFM processes is centred on their interests in the forests. Although engaging different stakeholders ensures some forms of inclusion it also presents challenges when their interests compete and collide, hence causing conflict.

Inequitable distribution of power and economic benefits are some of the challenges that can lead to increased conflicts and unsustainable management of resources (Kellert, Mehta, Ebbin, & Lichtenfeld, 2000; Scheba & Mustalahti, 2015). The literature demonstrates that socially dominant and relatively wealthier households mostly control community forest decision-making and benefit-sharing processes (Bhattacharya, Pradhan, & Yadav, 2010; Matiku et al., 2013; Mutune & Lund, 2016b). Inequality between groups, particularly the relatively poor of the community, who often receive a disproportionate share of the forest management costs and limited forest benefits, propels the conflicts as each social group struggles to capture more benefits.

Implementation of PFM at the community level gives way to elite capture. High illiteracy levels in the community allow elites to take charge and collude with foresters and forest guards for personal gains. Acharya and Upreti (2015) identify governance, particularly participation and

accountability, as a main issue leading to conflict in PFM. They specifically point out that most PFM initiatives are governed by influential local elites who seldom practice equality and inclusion. This research found that the influence of elites was a problem in Kereita, especially in the early stages of the CFA. CFA members were excluded in decision-making; however, with increased awareness and empowerment by NGOs and other actors those interviewed agreed that the issue had been well addressed and they are able to choose leaders through a transparent electoral process.

According to Odera (2004) when parties are excluded from planning decision-making processes, conflicts are likely to develop during implementation of the decisions. PFM conflicts are common when two or more parties claim right of access to certain forest products (J. Anderson, Mehta, Epelu, & Cohen, 2015). In addition, the changing social, environmental, economic, legal and political conditions are argued to be sources of conflicts particularly when new interests and demands on natural resources arise (Belsky, 2015).

Participants reported that there are challenges in following the rules thus sometimes people opt for informal processes. The Forest Act 2016 allows the CFAs to assist the KFS in enforcing provisions of the Act particularly illegal harvesting of forest products. In most cases, CFA management personnel appoint scouts to patrol the forest. Similarly, the KFS deploys forest guards to also perform patrol activities. The mandate of scouts is limited to patrolling and reporting illegal activities to KFS forest guards. However, the guards have the power to arrest, detain, seize and confiscate assets used in illegal activities (Mustalahti & Lund, 2009). A research participant Julie (19th July 2017) stated that "some people prefer paying money directly to the forest guards to avoid official procedures…this way [referring to informal processes]…there is room for negotiation and one can get uncontrolled access to the forest resources". Other participants, namely: Julie, Ben and Betty confirmed that the rules are also avoided due to the lengthy procedures involved. Those who prefer informal procedures are well aware that their actions lead to loss of revenue for the KFS and there are chances of destruction. "The strictness of the law has actually encouraged corruption" (Ben, 19th July 2017).

An overlapping mandate and the lack of coordination from different sectors such as forestry, wildlife, water and agriculture have led to conflict in the implementation of PFM. Incoherent implementation strategies, competition and contradictions between government departments have compromised the effectiveness of PFM (Odera, 2004).

However, there are ways of resolving conflicts. First, broadening the participation and satisfaction of participants in decision making creates spaces for dialogue among conflicting groups offers (Nirmal et al., 2009). In addition conflicts can be addressed through the execution of equality and inclusion provisions in community forestry to secure access to assets for disadvantaged groups (Acharya & Upreti, 2015). Therefore, improved participation and better inclusion of the Kereita community in decision-making and benefit sharing could help reduce existing conflict.

3.7 Conclusions: Boundary making and limited access to decision making

Implementation of PFM in Kereita, as illustrated in the research findings, appears to use top-down processes in both decision-making and access to forest products (Pokharel, 2007) and has been associated with a rise in forest resource conflicts. Conflicts in Kereita forest revolve around community exclusions in decision-making and controlled access to subsistence forest products such as fuel wood, grazing and denied access to high value products such as timber and tourism investments.

Findings from the research in Kereita support the existing literature that claims decentralisation, devolution and the power shift from the state to the local people has not been realised in many areas (Ribot, 2006; Sarin, 2013). The state still restricts access to essential forest products hence conflicts between the state and communities arise as the community struggles to access the resources (Nirmal et al., 2009). This shows that PFM has not created adequately democratic spaces for participation in forest management, therefore there is a need to re-negotiate the power relations in PFM to ensure genuine community participation in forest management. When given complete autonomy Pokharel, Branney, Nurse, and Malla (2007) argue that community forest user groups become viable local institutions for sustaining forests and delivering rural development. The authors add that when these community groups are empowered, they are also able to become agents of resolving conflicts.

PFM seems to have created visible and invisible boundaries. The visible boundaries such as fences and forest zonation seem to perform the role of physically controlling access to forest resources. The findings also agree with Saito (2010) that the practice of PFM has successfully created invisible boundaries through the permit system of accessing forest resources. The visible

boundaries control what takes place where and the invisible boundaries control who accesses what'. By embedding invisible boundaries through the permit system, PFM automatically discriminates the poor from accessing high value products like timber harvesting and eco-tourism investments. Mutune and Lund (2016b) claim that livelihood activities that exist through PFM structures are gradually becoming capital-intensive and are serving the interests of the rich and not the poor. In addition, the change of PFM focus from curbing forest destruction to improving community livelihoods and now to forest investments as noted by Paul (24th July 2017) calls for further assessment of the plight of the poor in the current market-driven PFM.

Saito (2010) argues that PFM through the forest boundaries aims to rearrange the lived space of forest users by introducing the processes of inclusions and exclusions. These exclusion and inclusion processes have encouraged informal processes that are often rooted in corruption as highlighted by Julie (19th July 2017). There are risks of overexploitation of forest products since corruption means access is less regulated than it may appear (Julie & Ben 19 July 2017). This calls for policy makers and enforcers to think about forest rules and different forms of forest boundaries as potential causes of overexploitation of resources and conflicts.

PFM should provide mechanisms for avoiding and resolving conflicts. Conflicts will always occur whenever more than one party is involved and therefore PFM should integrate conflict resolution mechanisms to ensure such struggles are addressed. Participation of stakeholders should be broadened and joint plans implemented transparently to ensure a common vision. Community forest management agreements and plans should be reviewed and fully implemented otherwise the current implementation approach of PFM may not be able to achieve its objective of shifting the power of managing forest resources from the state to the community.

Chapter 4 PFM Outcomes for Livelihoods

4.1 Introduction

This chapter discusses research findings that relate to the impact of PFM on livelihoods by interrogating various forest management processes that enable access to forest products. Changes to access caused by PFM are discussed and how these changes are contested through livelihood processes in Kereita. The chapter further evaluates whether PFM in Kereita forest is a successful tool for securing sustainable livelihoods.

4.2 Forests and livelihood improvement

Forest management in Kenya tends to focus more on environmental health than the human health benefits of poverty alleviation. The Kenya national forest programme for instance has clear goals on how the country should achieve 10% forest cover by 2030 (GoK, 2016) and this is given emphasis in every forest related debate but no data is available on the goals relating to livelihood achievements, food security or poverty alleviation within the same period.

As highlighted in chapter one, forest incomes act as a buffer against extreme poverty for forest adjacent communities by complementing income gaps and providing a safety net in times of income crisis. Forests are an important source of sustainable livelihoods hence effective implementation of PFM requires understanding the place of forest resources in rural household livelihoods and the role that forest-based activities play in alleviating poverty (Kamanga, Vedeld, & Sjaastad, 2009).

In Kenya, benefits of forest resources are categorised into in-situ and ex-situ benefits (KFS, 2016). In-situ comprises of goods and services that communities derive directly from the forest, which are in two classifications:

> Chapter 1 Non-extractive benefits that include climate regulation, eco-tourism, water, spiritual connection, aesthetic value, recreation, research and education and stabilization.

Chapter 2 Extractive benefits include timber harvesting fuel-wood collection, non-timber forest products and grass cutting among others.

On the other hand, ex-situ forest benefits are indirect benefits that households receive from forest-related investment such as training in sustainable living, incomes from on-farm forest-based enterprises such as bee keeping, silkworm rearing, butterfly farming, and trees planted on-farm that provide incomes through sale of poles and fuelwood (KFS, 2016).

However, extraction of the above benefits by local people should be maintained at sustainable levels as described by the Millennium Ecosystem Assessment (2005) so that all stakeholders benefit equitably. According to the Forest Survey of India (1997), PFM offers an opportunity for people and the government to manage forest resources to ensure availability of forest products. In this view, forests provide local communities with both direct and indirect benefits if well managed.

Tadesse, Woldetsadik and Senbeta (2017) argue that the overall livelihood assets for PFM participants were higher than those of non-participants. According to DasGupta and Shaw (2017), there is always a high expectation that PFM can result in substantial benefits to people's livelihoods. However, research has shown inconsistent results for PFM models when it comes to benefitting the poorest people in rural communities (Adhikari, Di Falco, & Lovett, 2004; Sunseri, 2005; Tipa & Welch, 2006). Chen, Zhu, Krott and Maddox (2013) researched how local people benefit from getting involved in forest management and argued that PFM appears to have a fundamental impact on local community livelihoods.

One of the ways that PFM enables livelihood is by displacing from the forest resource use. To achieve their livelihood goals, households engage in multiple livelihood strategies and activities. Households may also choose to diversify their livelihood sources within and outside of forest areas for various reasons. Barrett, Reardon, and Webb (2001) argue that diversification of livelihoods is motivated by push or pull factors. "Push factors" as Barrett et al. (2001, pp. 1-2) argue are those related to "risk reduction, high transaction costs, reaction to crisis and diminishing returns". Barrett et al. (2001, pp. 1-2) further add that pull factors include realization of strategic complementarities between activities, such as crop-livestock integration. The pull factor may include growth in commercial agriculture or proximity to urban areas providing opportunities for income diversification. The outcomes of PFM to livehood is to an extent determined by pull and push

factors Barrett et al.(2001) To achieve livelihood goals, PFM changed access to forest resources in a number of ways. First, controlled access under PFM may cause negative impacts on the poorest and most marginalised members of the community, who become excluded from the forest user group and lose access to the resource (Agarwal, 2001; Barrow, 2002; Muller, Epprecht, & Sunderlin, 2006; Nhantumbo, Norfolk, & Pereira, 2003).

Introduction of PFM seems to encourage or pull certain activities into the forest and push away others. While pushing away some activities from the forest PFM attempts to improve human and financial assets by enabling access to the required skills and knowledge (Tadesse, Woldetsadik & Senbeta, 2017). This may lead to development of on-farm activities that provide similar livelihoods. This could be in the form of increased agricultural productivity of local communities living in areas adjacent to forests, hence improving their livelihoods (Westoby, 1989). In addition, Naidu notes as a result of legal exclusions in access of forest resources comunitiies may choose reliable options from farm that are agricultural based y to maintain household welfare in case of loss of forest benefits

Findings from Kereita show that disincentives produced through PFM processes have diverted local people to invest in on-farm livelihood options such as pasture feeding instead of open grazing and on-farm forestry instead of collecting fuelwood from the forest. Kelbessa and De Stoop (2007) argue that PFM through non-forest-based livelihood activities helps to diversify income at a household income level, thus reducing the dependence of communities on forests for livelihoods. Adopting pasture feeding instead of open grazing and fuelwood collection is a form of resource displacement.

Unequal access and benefit sharing

PFM yields unequal access patterns and benefit sharing arrangements. Chen, Zhu, Krott and Maddox (2013) state that economic benefits were not distributed equally within the local communities engaged in PFM because PFM does not involve everyone from the community due to a lack of interest or immediate direct benefit (Arnold, 2001). Studies conducted in Arabuko sokoke, Sururu and Eburru forests in Kenya indicate that Community Forest Association

(CFA)members benefit more than non-members and the wealthier households in the community gain more income from PFM activities than the very poor (Matiku et al., 2013; Mutune & Lund, 2016b). Evidence has shown that the PFM process creates restrictions that only benefit a few in the community and the poor people only have only derivative possibilities of benefiting from PFM (Glasmeier & Farrigan 2005). This is potentially because participatory management processes and the institutional arrangements that oversee its implementation, may easily be dominated by the wealthier or the more powerful members of the community hence producing an outcome that perpetuates or even reinforces social inequality (Carter & Gronow, 2005; Edmunds & Wollenberg, 2003). Also, Chen, Zhu, Krott and Maddox (2013) have shown that people with higher education, as well as those with access to information, benefit most from participating in PFM projects. The mechanisms and possibilities for benefit sharing are imperative to the success of PFM.Murali et al. (2003) argue that inclusion of benefit sharing was the major factor for acceptance and success of PFM in India.

Acharya (2002) claims that communities adjacent to the forest tend to have high expectations of instant benefits accruing from participating in PFM. However, if these expectations are not provided or met it could result in the elimination or decline of communities living in forest reserves from participating and attending any PFM initiatives (Acharya, 2002). Similarly, Fabricius (2004) claims that the state or local government or any other programme implementers must be ready to manage all raised expectations by the local communities by being clear about what is realistic and achievable. In addition, it is important to make sure that the benefits of participants exceed the costs to generate appropriate incentives for long-term community participation in PFM.

Particularly, there are concerns of PFM benefits not able to cover costs imposed on poor people hence raising doubts about the long-term viability and effectiveness of the approach (Leach, Mearns, & Scoones, 1999; Schreckenberg, 2009). Attention to how livelihoods are structured in terms of class, caste, gender, ethnicity, religion, and cultural diversity are central to equitable programmes (Ribot, Agrawal, & Larson, 2006). Scoones (2009) argues that social relations on who owns what, who does what, who gets what and what they do with it, help to explain the distribution of property patterns of work, division of labour, distribution of income and the dynamics of consumption and accumulation. Social class, which is not an institutional variable but a relational concept, is absent in the discourse of livelihoods (Scoones, 2009). Consequently there is often a focus on empowering the poor without being clear about how this process takes place or

who might be disempowered for empowerment to occur (Scoones, 2009). Thus relational understandings of politics and power identify how political spaces are opened up and closed down in livelihood perspectives.

Naidu (2013) argues that despite the existence or lack of rights to forest benefits, the ability to benefit from those rights depends on private (economic, social and political) assets and individual resources that could be used to influence institutions. Baland & Platteau (2003) claim that these assets can be used to mitigate the control extended by the state over forest resources and alternatively, they also potentially offer access to different and perhaps more lucrative opportunities. The diversity that exists in the possession of these private resources and assets could contribute to differences in forest benefits and overall livelihood strategies among forest communities (Adhikari, 2005; Adhikari, Di Falco, & Lovett, 2004).

Wealthier households draw more benefits from extraction of forest resources and are more forest-dependent (Adhikari, 2005; Adhikari et al., 2004; Matiku, Caleb, & Callistus, 2013; Naidu, 2011) since their livelihood strategies involve taking more time collecting forest resources In Kereita forest, there are opportunities to enhance the livelihoods of the local communities (KFS, 2007). Chapter 3 highlighted some of the challenges of the PFM processes, but also that people living adjacent to the forest highly value PFM and they had positive attitudes towards the initiative.

The KFWG (2007) investigation into the progress of PFM in various forests in Kenya including Kereita reported that there were business opportunities that existed as a result of PFM including fish farming, beekeeping, and ecotourism activities. Even though the community living around the forest were involved with other forestry practices before PFM like fuelwood& collection, livestock grazing and gathering of fodder, according to the KFWG report the outcome of PFM had greatly contributed to the enhancement of local community standards of living and hence, their livelihoods.

Discourses about livelihoods have gained influence in constructing and shaping debates about both forest management, and development. However, as Scoones argues (2009) there are a number of blind spots in the Department for International Development (DFID) sustainable livelihood framework ([DFID], 1999) that informs many livelihood interventions. Accompanying dominant livelihood discourses are normative assumptions about bottom-up, locally-led and participatory development. Scoones (2009) points out that sometimes issues of rights, justice, and struggles for

equality are obscured in the conventional framing of participatory approaches. In Kenya forest management is characterised by a history of denied access, land injustices and power imbalances.

Scoones also claims that dominant framings of livelihood do not adequately assess if programmes are heading towards positive or negative ends, or analyse assumptions about what good and bad livelihoods are. Livelihood analyses by development agencies such as the World Bank are not a neutral exercise since knowledge production is always conditioned by values, politics and institutional histories (Keeley &Scoones 2003).

Another challenge of livelihood perspectives is how to deal with the dynamics of long-term change. Historical analysis of livelihood change highlights how long-term shifts in livelihood strategies are important in assessing issues of demography, regional economic shifts and urbanization, migration, land-use and climate (Scoones, 2009). Sustainability and resilience cannot always emerge through local adaption in conditions of extreme vulnerability (Nath & Inoue, 2010).

Therefore more dramatic reconfigurations of livelihoods may have to occur in response to long-run change.

4.3 Improved livelihoods in Kereita

This section highlights how the community attains its forest-based livelihood in Kereita. I start with participants' expressions of their connection to the forestbefore and during PFM implementation. I will also discuss ways in which people's everyday lives have changed through PFM and how understandings of livelihood have also changed.

Kereita forest is key in providing critical goods and services to the surrounding community. According to KFSFMA2010) the forest provides water for the neighbouring towns including some Nairobi city suburbs. The forest's microclimate effect and its proximity to urban areas support agricultural productivity, which is a mainstay of the Kereita community. PFM has been viewed as a system that legalised community forest access and opened the forest up for more livelihood opportunities. PFM was reported to have caused both direct and indirect benefits.

The findings of this research indicate that PFM improves livelihoods through awareness creation projects; targeting forest communities and community organisations operating in the forest. The

PFM inception stage involves training the community in PFM operational documents such as the: participatory forest management plan; CFA formation manual; and FMA (KFS, 2016). Through PFM training, communities are able to explore alternative sources of livelihoods through various options.

Firstly, PFM has presented ways of increasing resource use efficiency. PFM projects have introduced energy saving stoves to reduce household fuel wood consumption rates (Julie, 9th July 2017; Joyce, 18th July 2017; Betty, 20th July 2017). According to research participants, this reduced demand for fuel wood from the forest and women, who are typically responsible for gathering fuel wood, now have spare time to engage in other activities (Julie, 19th July 2017). Betty (20thJuly 2017) stated that "before PFM I would go to the forest every day to collect firewood, now I only go once a week because my cooking stove is more efficient".

Furthermore, PFM was reported to have created pathways for alternative livelihoods. For instance:

> Before we used to burn charcoal in the forest and cut trees without control for fuel wood... Kijabe Environmental volunteers (KENVO) created awareness on the need to conserve the forest. This is when we started establishing tree nurseries and farming in the forest. The awareness we got through PFM was to help us shift focus from charcoal burning to other environmentally -friendly activities. Now we have formed a women's group that makes fireless cookers,[4] soaps and tie-dye garments. Also people started planting trees on their farms to avoid going to the forest for fuel wood (Julie, 19 July 2017).

The above findings indicate that PFM has helped the Kereita community to realise other livelihood strategies outside of the forest.

However, to some people, change towards alternative livelihoods strategies at the inception of PFM was because the new PFM procedures acted as a disincentive to stop them from going into the forest. Those who were discouraged by the PFM procedures opted for on-farm livelihood options. For instance people started zero –grazing,[5] instead of putting the cattle out to graze in the forest (Julie, 19th July 2017; Harry, 19th July 2017). Also, to maintain milk production, which is

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[4] Fireless cooker is a locally made food warmer.
[5] Zero grazing is a dairy farming practice where cows are fed with cut grass brought to them instead of taking them out to pasture.

a source of income for many households in Kereita, farmers replaced the low milk production cows, which were being taken to the forest in herds with a few high-hybrid cows that are fit for zero-grazing. However, it is important to note that this change cannot be attributed solely to PFM interventions since there are other non-PFM interventions that the community benefits from such as training in sustainable land use practices from the agricultural department. This gave way to production of biogas for cooking hence replacing fuel wood (Julie, 19th July 2017; Kim, 17th July 2017). The forest manager confirmed that there was overdependence on the forest - mainly for fuel wood and grazing but this has since reduced.

Increased income through on-farm activities has diverted people's interest in the forest. For instance, Julie (19th July 2017) said "I never go to the forest anymore, I pay donkey cart vendors to bring fuel wood to me". She went on to explain:

> When I was growing up we depended on the forest for almost everything, which was tedious and time consuming. Currently women prefer buying fuel wood instead of going to the forest. This saves time and improves health due to less exposure to fuel smoke. For example people have shifted to energy saving technologies like biogas. We have come to value our time as women unlike before when there was inefficiency in our operation (Julie, 19th July 2017).

However, with the constantly changing global focus on development and sustainability, and the reliance on donor funding for PFM activities, it's difficult to tell what livelihood outcomes PFM will support in the future. This is because donor funding determines what constitutes the current livelihood focus. Kijabe Environmental Volunteers (KENVO), a civil society organisation in Kereita expressed:

> Of course change is dynamic as are the environment issues, and we too consistently change with time. For instance in the past it was deforestation but now it's matters of investment in the forest so we focus on sustainable forest utilisation such as Payment for Ecosystem Service (PES). We enlighten the community on utilisation and safeguard the forest by encouraging non-extractive uses like eco-tourism and beekeeping activities among others. Our change is dependent on the topic at the time, like now we are doing more work to improve the status since deforestation has been addressed. We are improving the forest's status through tree planting; riverine area rehabilitation; more community awareness; and

working with communities and schools in the surrounding area. We have also been doing more research on alternative activities that can be done in Kereita such as beekeeping, ecotourism, and water bottling among others. Next it could be something else' (Paul 19, July 2017).

Finally, through PFM training sessions, forest products have started to be commercialised unlike before. The community now produce honey for both domestic and commercial purposes. Also, individuals who are engaged in farming on the plantation sites produce vegetables for sale to the nearby towns and cities. The research participants said that the income that is generated from these business enterprises improves their livelihoods (Harry, 19th July 2017 and Joyce, 8th July 2017).

4.4 Conflict and livelihoods

Despite reports of improved livelihoods, corruption and a lack of transparency in the PFM process have led to conflicts that have affected livelihood access. In the case of Kereita, the timber access processes, which were illustrated in chapter three, have been very opaque; leading to conflict involving the community, saw millers and theKFS. Research participants Kim and Ben (17th July 2017), Joseph (19th July 2017) and Harry (19th July 2017) reported that some saw millers harvest the trees and take the branches, which is contrary to the CFA that states that the branches should be left behind for the community to collect for fuel wood. This creates tension between the KFS and the community, and since the community does not have the power to stop the saw millers the fuel wood collectors end up losing their livelihoods.

Also, individual interests trigger conflicts. Joseph stated (17th July 2017) 'the CFA used to collect grazing fees to curb illegal entries but after some time, the forest guards started collecting money from grazers without our knowledge and this caused some conflict'. Whereas allowing some people to enter the forest through corruption provides short-term livelihood benefits, in the long-term destruction of the forest as highlighted by Julie (19th July 2017) that by paying bribes to the forest guard there is no control of how many cows are being fed nor the quantity of fuel wood being collected.

Conflicts of interest among CFA user groups allow some people access to certain livelihood benefits while others are denied them:

> The lodge owner is a member of the KWCA, which is a user group but he is not a member of the CFA so he listens to the interests of the KWCA more than the interests of the larger CFA. This is wrong because outsiders are not allowed to be members of the CFA. Again, we are not able to openly discuss the issues we have with the lodge because part of the CFA is hiding the investors' interests (Harry, 19th July 2017).

The purpose of the CFA is to serve the interests of the Kereita community in general and its members. However, when the CFA diverts community interests to individual interests the purpose of participation is compromised and livelihoods are concentrated within certain groups.

Also overlapping laws and a lack of consultation among government departments' result in conflict during implementation of various participatory activities as explained by a research participant from a water user group in reference to water abstraction:

> Water levels have been reducing so we are currently rationing water for our members…the water source is drying up. Recently KFS cleared some trees that were covering the water source without consulting us. The problem is the conflicting laws between the KFS and WRMA. The trees were cleared by the forester; as per KFS plantation laws yet the WRMA laws say trees should not be cut near a water source. Soon the KFS might replant the area with exotic trees, which might cause our well to dry up. (Max, 20th July 2017).

In some cases, PFM offers mechanisms for resolving conflict that relate to accessing livelihoods. Some PFM processes support conflict resolution but success varies in the different countries adopting the system. This is attributed to several factors that aid in creating an enabling environment which range from legal and policy frameworks to the availability of financing mechanisms among others (Chomba, Nathan, Minang, & Sinclair, 2015).

4.4 Improving PFM processes for better livelihood outcomes

Based on the findings of this study, PFM contributes to livelihood outcomes by displacing resource use from the forest to private farms and attracting other activities into the forest such as ecotourism. However, the current PFM livelihood processes seem to produce inequalities in the distribution of forest benefits. These inequalities determine who benefits and who losses from PFM outcomes.

When the capacity of the community on forest issues is enhanced, through PFM. However, this was only possible for community members who have access to land and financial resources to start forest-based livelihood activities on their farms. To continue supporting on-farm livelihood activities, the capacity of the community associations need to be improved particularly on proposal development to be able to apply for external funding.

The power and roles of actors in community forestry is crucial since it ensures the success of the initiatives (Agrawal, et., 2008; Krott, et al., 2013). Kereita forest communities do not have power over forest management approaches used to preserve the natural resources such as those relating to timber harvesting. Furthermore, there is no equity in access to forest resources and benefits that these groups are entitled to are not received as required (Poffenberger, McGean & Khare, 1996). In Kereita forest livelihood benefits seem to be distributed unequally and only a few people are able to access the resources. The institutional arrangement in PFM seems to benefit the wealthy more than the poor due to administrative arrangements that exclude the poor from realizing a full suite of benefits as also noted by (Vyamana, 2009).

Benefit sharing is a major factor for PFM success (Murali et al. 2003). Benefit sharing seems to be contested in Kereita. Paul (24th July 2017) reported that benefit "sharing is not clear and also some foresters take advantage of the ignorance of the community". Similarly in a study conducted in Tanzania, villagers were still waiting for the promised benefits of PFM to materialise (Scheba & Mustalahti, 2015). Despite the continuous inclusion and participation of villagers in every forestry and development activity, their hope to take full control and ownership of the forests that surround them are yet to be fulfilled. This shows that PFM is designed to promote the livelihoods of the rich in the community since the poor are excluded from some forest benefits. To achieve

better livelihood outcomes PFM processes need to be more reflective of the types of livelihoods they produce and for whom.

Forms of exclusions within PFM processes and in practice of PFM seem to determine livelihood outcomes. As communities continue to lobby for benefit sharing between the CFA and KFS the issue of who are members of the community associations needs to be addressed to avoid benefits flowing to outsiders leaving the poor further marginalised.

CFA lack inadequate capacity to implement PFM effectively. It is widely recognized that the effectiveness of the CFA is challenged by governance-related issues (Mbiti, 2016). The overriding need is to ensure these processes are transparent and the responsible office-bearers are fully accountable and avoid conflicts.

As more CFAs enter into agreements with the KFS, the issue of benefit sharing, both between the KFS and the CFAs, and within member user groups has emerged as a high concern area, which if not addressed, will generate further tension locally. For PFM to work there is a need to realize that PFM initiation is a long-term, expensive process and requires different financial and technical support for each community in question. Also, PFM should be integrated with other development programs to realize its potential.

Chapter 5 Conclusion

This thesis was structured around three central questions. The first research question asked how the Kereita forest community accesses benefits from Kereita forest. This thesis critically considered the participatory processes that enable access to livelihoods and how physical and structural boundaries shape access procedures. It also interrogated levels of stakeholder engagement in decision-making processes. This led to the second question that examined who benefits from the above PFM processes. This captures the politics of inclusion and exclusion. Finally, the third question looked at the contribution of participatory forest management (PFM) on current livelihood strategies and its potential for sustaining livelihoods in the future.

By taking a post-structural political ecology perspective, and through the case study of the Kereita forest, I have argued that participatory forest management has opened spaces for community engagement in forest activities. The findings indicate that PFM has generally created a platform for engaging different stakeholders in forest management.

However, there are contestations in accessing forest livelihoods and the "participatory" processes still appear to be top-down. The top-down approaches in PFM processes have created boundaries that continue to perpetuate the exclusion of poor and marginalized groups in accruing forest benefits. Current PFM procedures continue to centralize power with the state which is contrary to its core objective of devolving power from the state to forest-dependent communities. Despite the involvement of CFA in most forest activities the community lacks power to make important decisions on forest resource utilization.

Nonetheless, the findings show that PFM has led to the diversification of livelihoods within and outside of the Kereita Forest. The study points out the importance of questioning physical (visible) and structural (invisible) boundaries since they form the basis of community exclusion from key decision-making processes. Similar to other studies (Matiku et al., 2013; Mwanzia & Strathdee, 2010; Pulhin & Dressler, 2009; Scheba & Mustalahti, 2015; Schreckenberg, 2009; Yadav, Bigsby, & Macdonald, 2015) PFM appears to benefit the wealthier people in the community and the poor continue to be negatively impacted by PFM policy and are further marginalised.

5.1 Study Contribution

This study has made several contributions to the existing literature. Firstly, the study has added to the body of literature that highlights 'participatory exclusions' in PFM processes (2000)).

While PFM promises to be a tool for decentralizing power from the state, the findings of this study demonstrate that state control still dominants access to forest livelihoods. My research has investigated how power is produced and negotiated within a participatory management system, which is generally assumed to be power free.

This study has also shown that the implementation of management plans, forest rules and scientific forestry in the current framework are too complex and contribute to conflicts and disincentives as opposed to promoting empowerment and providing benefits to Kereita forest community. In response, I do not recommend the removal of these PFM processes but rather recommend adoption of more flexible approaches that give priority to local knowledge and context in resource management.

In addition to documenting present livelihood issues, this study focused on some possible long-term impacts of PFM on livelihoods as a result of ongoing development changes in Kereita forest. These findings could enable policy makers in PFM to come up with safeguards and strategies that will enable forest communities to continue accessing forest benefits.

Whereas earlier discussions about forest livelihoods have been around household income, this study has considered the structural processes that control forest livelihood resources and who benefits from these resources.

Through a post-structural political ecology approach, I have taken a subtle approach to PFM in Kereita forest, examining power relations and the ways that current management approaches have failed to adequately secure sustainable livelihoods for forest-dependent communities.

5.2 Study limitations

Whereas this thesis has been able to contribute to the body of literature about PFM, it is limited in a number of ways also has some limitations. First, it was challenging to access information on

previous studies and research reports on PFM for Kereita forest and other forests in Kenya since most local studies are unpublished and undocumented in open libraries and government websites. This limited my access to extensive arguments about the performance of PFM in Kenya. Secondly, this research was limited in terms of scope and could not deeply examine issues of benefit sharing and forest-based investments which are critical for sustainable livelihood and future of PFM in Kenya. Also, the one year time frame of this research and being in New Zealand for most part of my research limited my chance to interact and build adequate relationships with my research participants.

5.3 The future of PFM

Future research could explore how PFM can be redefined to remove social exclusion and inequalities in accessing forest resources. Future research could investigate alternative approaches to PFM that might increase livelihood benefits of the poor and the excluded and not those who are already endowed with power as demonstrated in this study. To achieve this, further studies are needed on the elements of PFM that would increase government accountability and community rights and responsibilities through which sustainable livelihoods can be achieved. In doing so it is also important to investigate the idea of forest community as a homogenous group, and investigate power imbalances and elite capture within community structures.

Another important area of investigation is how livelihood outcomes and ownership rights for communities can be sustained through participatory approaches in the long term. Finally, with the ongoing shift of PFM towards forest investments, future research could explore the potential impacts of these kinds of investments on the sustainability of community livelihoods.

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7. Appendices

Appendix 1: Ethics Approval Letter

TE WHARE WĀNANGA O TE ŪPOKO O TE IKA A MĀUI

VICTORIA
UNIVERSITY OF WELLINGTON

Phone   0-4-463 5480
Email   susan.corbett@vuw.ac.nz

MEMORANDUM

TO	Leah Gichuki
COPY TO	Amanda Thomas
FROM	AProf Susan Corbett, Convener, Human Ethics Committee

DATE	12 May 2017
PAGES	1

SUBJECT	**Ethics Approval: 24499** Assessing the livelihood impact of participatory forest management on community livelihoods: Case study of Kereita Forest, Kenya

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved from the above date and this approval continues until 5 March 2018. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Kind regards

Susan Corbett

Convener, Victoria University Human Ethics Committee

Appendix 2: Interview information sheet

Information Sheet for Institution Representatives

Thank you for your interest in this project. Please read this information before deciding whether or not to take part. If you decide to participate, thank you. If you decide not to take part, thank you for considering my request.

Who am I?

My name is Leah Gichuki and I am a Masters student in Development Studies at Victoria University of Wellington. This research project is work towards my Master's thesis.

What is the aim of the project?

This project aims to find out how involvement of Kereita community in forest management through PFM impacts on people's livelihood. Further, the research will seek to understand livelihood changes over the years and factors determining access to various livelihood options.

This research has been approved by the Victoria University of Wellington Human Ethics Committee No. 2449.

How can you help?

If you agree to take part I will interview you at a location of your choosing. I will ask you questions about the contribution of PFM to livelihood improvement in Kereita Forest. The interview will take about 45 minutes. I will audio record the interview and write it up later but if you don't consent to being audio recorded, I will take notes during the interview. The interview is based on a semi-structured format meaning the exact nature of the questions has not been determined in advance but will depend on the way that the interview develops. You can stop the interview at any time, without giving a reason. You can withdraw from the study by contacting me through my email provided below at any point before 31st August 2017. If you withdraw, the information you provided will be destroyed or returned to you.

What will happen to the information you give?

This research is confidential. Participants will be referred by the role or organisation rather than by name. In some instances, people very familiar with this case study may be able to identify you from information shared. However, every effort will be made to ensure you cannot easily be identified.

Only my supervisor and I will read the notes or transcript of the interview. The interview transcripts, summaries and any recordings will be kept securely and destroyed 3 years after the research ends.

What will the project produce?

The information from my research will be used in my Master's thesis and may be used in academic publications and conference presentations.

If you accept this invitation, what are your rights as a research participant?

You do not have to accept this invitation if you don't want to. If you do decide to participate, you have the right to:

- choose not to answer any question;

- ask for the recorder to be turned off at any time during the interview;

- withdraw from the study before 31st August 2017.

- ask any questions about the study at any time;

- receive a copy of your interview recording (if it is recorded);

- read over and comment on a written summary of your interview;

- be able to read any reports of this research by emailing the researcher to request a copy.

If you have any questions or problems, who can you contact?

If you have any questions, either now or in the future, please feel free to contact either:

Student:	**Supervisor:**
Name: Leah Gichuki	Name: Amanda Thomas
University email address:	Role: Lecturer in Environmental Studies
gichukleah@myvuw.ac.nz	School: School of Geography, Environment and Earth Sciences
	Phone: +64 4 463 6117
	Email: Amanda.Thomas@vuw.ac.nz

Human Ethics Committee information

If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett. Email susan.corbett@vuw.ac.nz or telephone +64-4-463 5480.

Information Sheet for Community Participants

Thank you for your interest in this project. Please read this information before deciding whether or not to take part. If you decide to participate, thank you. If you decide not to take part, thank you for considering my request.

Who am I?

My name is Leah Gichuki and I am a Masters student in Development Studies at Victoria University of Wellington. This research project is work towards my thesis.

What is the aim of the project?

This project aims to find out how involvement of Kereita community in forest management through PFM impacts on people's livelihood. Further, the research will seek to understand livelihood changes over the years and factors determining access to various livelihood options.

This research has been approved by the Victoria University of Wellington Human Ethics Committee No. 2449.

How can you help?

If you agree to take part I will interview you at a location of your choosing. I will ask you questions about the contribution of PFM to livelihood improvement in Kereita Forest. The interview will take about 45 minutes. I will audio record the interview and write it up later. If you don't consent to being audio recorded, I will take notes during the interview. You can stop the interview at any time, without giving a reason. You can withdraw from the study by contacting me through my email provided below at any point before 31st August 2017. In case you don't have access to an email address, alternative contact details will be agreed on during the interview. If you withdraw, the information you provided will be destroyed or returned to you.

What will happen to the information you give?

This research is confidential. This means that only the researcher and the supervisor will be aware of your identity, research data will be aggregated and your identity will not be disclosed in any reports, presentations, or public documentation. Participants will be referred by community or pseudonyms (code name) will be used to protect your identity and to maintain anonymity. However, you should be aware that in small projects your identity might be obvious to others in your community.

Only my supervisors and I will read the notes or transcript of the interview. The interview transcripts, summaries and any recordings will be kept securely and destroyed 3 years after the research ends.

What will the project produce?

The information from my research will be used in my Master's thesis and may be used in academic publications and conference presentations.

If you accept this invitation, what are your rights as a research participant?

You do not have to accept this invitation if you don't want to. If you do decide to participate, you have the right to:

- choose not to answer any question;
- ask for the recorder to be turned off at any time during the interview;
- Withdraw from the study before 31st August 2017.
- ask any questions about the study at any time;
- receive a copy of your interview recording (if it is recorded);
- read over and comment on a written summary of your interview;
- agree on another name for me to use rather than your real name;
- Be able to read any reports of this research by emailing the researcher to request a copy.

If you have any questions or problems, who can you contact?

If you have any questions, either now or in the future, please feel free to contact either:

Student:	**Supervisor:**
Name: Leah Gichuki	Name: Amanda Thomas
University email	Role: Lecturer in Environmental Studies
address:gichukleah@myvuw.ac.nz	School: School of Geography, Environment and Earth Sciences
	Phone: +64 4 463 6117
	Email: Amanda.Thomas@vuw.ac.nz

Human Ethics Committee information If you have any concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett. Email susan.corbett@vuw.ac.nz or telephone +64-4-463 5480.

Fomu Ya Maelezo Kwa Washiriki Wa Jamii

Asante kwa hamu ya kuhusika kwa huu utafiti. Tafadhali soma habari hii kabla ya kuamua kama ungetaka kushiriki. Usipoamua kushiriki, asante. Ukiamua kushiriki, asante kwa kuzingatia ombi langu.

Mimi ni nani?

Jina langu ni Leah Gichuki na mimi ni mwanafunzi wa Masters katika Masomo ya Maendeleo katika Victoria University of Wellington. Mradi huu utanisaidia kuandika repoti yangu ya chuo.

Lengo la mradi huu ni nini?

Mradi huu unalenga kujua manufaa ya kuhusisha jamii katika Kereita katika usimamizi wa misitu kwa njia ya PFM haswa udumumishaji wa maishai ya hayo. Pia, utafiti utajaribu kuelewa mabadiliko ya maisha katika kipindi ambacho PFM imetekelezwa na mambo yanayochangia kupata manufaa mbalimbali.Utafiti huu ya umekubaliwa na Kamati ya Maadili ya No. 2449.

Unawezaje kusaidia?

Ukikubali kushiriki katika mahojiano, unaweza changua eneo la mahojiano. Maswali ya mahojiano itakuwa kuhusu mchango wa PFM kwa uboreshaji wa maisha katika Kereita Forest. Mahojiano itachukua muda wa dakika arobaini na tano(45). Tumeyarecodi mahojiano na kuiandika baadaye au maelezo itachukuliwa wakati wa mahojiano. Una haki ya kuacha mahojiano wakati wowote, bila kutoa sababu. Unaweza kuondoka kutoka kwenye utafiti kwa kuwasiliana nami wakati wowote kabla ya tarehe 31 Agosti 2017. Ikiwa huna barua pepe, tutakubaliana namna inayokufaa kuwasiana na mimi. Ukiamua kutoka kwa utafiti huu, taarifa uliyoitoa itaharibiwa au utarudishiwa.

Nini kitatendeka kwa habari utakayoitoa?

Utafiti huu ni ya siri. Hii ina maana kwamba mtafiti atakufahamu lakini habari utakayoitoa itakusanywa hivi kwanba utambulisho wako hautakuwa wazi katika taarifa yoyote, maonyesho, au nyaraka ya umma. Mshiriki atatajwa kama mwanajimii ama jina la kuiga litatumika. Hata hivyo, unapaswa kuwa na ufahamu kwamba katika miradi ndogo utambulisho wako huenda ukawa wazi kwa wengine katika jamii yako.

Ni mimi na msimamizi wangu tu tutaweza kusoma maelezo au nakala ya mahojiano. Nakala ya mahojiano, muhtasari na rekodi yoyote itawekwa salama na kuharibiwa miaka 3 baada ya utafiti kuisha.

Nini mradi kuzalisha?

Taarifa kutoka kwa utafiti wangu zitatumika katika uandishi wa Thesis na inaweza kutumika katika machapisho ya kitaaluma na maonyesho ya mkutano.

Ukikubali mwaliko huo, ni nini haki kama mshiriki wa utafiti?

Si lazima ukubali mwaliko huu ikiwa hautaki. Kama kumeamua kushiriki, una haki ya:

- Kuchagua kutojibu swali lolote;
- Kuomba kifaa cha kurecodi kuzimwa wakati wowote wa mahojiano;
- Kujitoa katika utafiti kabla ya tarehe 31 Agosti 2017.
- Kuuliza maswali yoyote kuhusu utafiti wakati wowote;
- Kupokea nakala ya mahojiano kama imerekodiwa.
- Jina lingine laweza tumika kwa niamba ya jina langu halisi.
- Kusoma na kutoa maoni kuhusu muhtasari wa maandishi ya mahojiano yako,
- Kuwa na uwezo wa kusoma taarifa yoyote ya utafiti huu kwa kutuma barua pepe kwa mtafiti na kuomba nakala.

Kama una maswali au matatizo yoyote, ambao wanaweza uwasiliane?

Kama una maswali yoyote kwa sasa au katika siku zijazo, tafadhali kuwasiliana na:

Mwanafunzi:	**Msimanishi:**
Jina: Leah Gichuki	**Jina**: Amanda Thomas
Anwani ya chuo: gichukleah@myvuw.ac.nz	**Wajibu:** Mhadhiri katika masomo wa mazingira
	Shule: Shule ya Jiografia, Mazingira na Dunia ya Sayansi
	Simu: +64 4 463 6117
	Anwani: Amanda.Thomas@vuw.ac.nz

Habari kutoka kwa kamati ya maadili

Kama una wasiwasi wowote kuhusu vitendo vya kimaadili kwenye utafiti huu,unaweza kuwasiliana na Victoria University HEC convener: Profesa Susan Corbett. Barua pepe susan.corbett@vuw.ac.nz au simu + 64-4-463 5480.

Appendix 3: Participant consent form

<div align="center">

Consent to Interview

(Participants)

This consent form will be held for 3 years.

</div>

Researcher: Leah Gichuki, School of Geography, Environment and Earth Sciences,

Victoria University of Wellington.

I have read the Information Sheet and the project has been explained to me. My questions have

been answered to my satisfaction. I understand that I can ask further questions at

any time.

I understand that:

- I may withdraw from this study at any point before 31st August 2017, without giving any reason, and any information that I have provided will be returned to me or destroyed.

- The information I have provided will be destroyed 3 years after the research is finished

- Any information I provide will be kept confidential to the researcher and the supervisor. I understand that the results will be used for a Master's thesis and a summary of the results may be used in academic reports and/or presented at conferences.

- My name will not be used in reports, nor will any information that would identify me.

- In some instances, people very familiar with this case study may be able to identify the participant from information shared. Every effort will be made to ensure you cannot easily be identified.

I agree to:

Being audio recorded   Yes   No ☐

    OR   ☐

Taking of interview notes

                                                                Yes   No ☐

                                                               ☐

I consent to being referred by role or by association with my   Yes   No ☐

Organisation in any reports of this research.   ☐

Please indicate role: _____

OR

Please indicate organisation: _____   Yes   No ☐

I would like to be referred to by a code name(pseudonym):   ☐

If yes please indicate the code name_____

I would like a summary of my interview: Yes   No ☐

☐

I would like to receive a summary of the thesis findings and have added my   Yes   No ☐

email address below.   ☐

Signature of participant: _____

Name of participant: _____

Date: _____

Contact details: _____

IDHINI ya mahojiano

(Washiriki)

Idhini hii itawekwa kwa muda wa miaka tatu.

Mtafiti: Leah Gichuki, Shule ya Jiografia, Mazingira na Dunia ya Sayansi, Victoria University of Wellington.

Nimesoma Taarifa ya mradi huu na imeelezewa kuhusu nia ya utafiti huu. Nimeridhika na majibu ya maswali yangu. Pia ninaelewa kwamba naweza kuuliza maswali zaidi wakati wowote.

Naelewa kwamba:

- Naweza kuondoka kutoka utafiti huu katika hatua yoyote kabla ya tarehe 31 August 2017, bila kutoa sababu yoyote, hii inamanisha kuwa taarifa yoyote yangu nitarudishiwa ama itaharibiwa.

- Naelewa ya kwamba taarifa nitakayotoa kwa huu utafiti itaharibiwa miaka 3 baada ya utafiti umeisha.

- Taarifa yangu itakuwa ya siri kwa mtafiti na msimamizi wake. Naelewa kwamba matokeo ya utafutifi   itatumika kwa ajili ya kuandika Masters Thesis na matokeo inaweza kutumika katika ripoti za kitaaluma au kuwasilishwa katika mikutano.

- Jina langu haitatumika katika repoti ya utafiti, wala repoti yoyote ambayo inaweza nitambua.

- Katika baadhi ya matukio, watu familiar sana na utafiti huu kesi kuwa na uwezo wa kutambua mshiriki kutokana na maelezo ya pamoja. Kila juhudi zitafanywa ili kuhakikisha si rahisi kutambuliwa.

Nakubali:

Kushiriki katika redio mahojiano	Ndio ☐	La ☐
AU	☐	
Mahojiano kuandikwa		
	Ndio ☐	La ☐
Nakubali kutajwa kulikangana na jukumu langu au shirika ninalo fanyia kazi kwenye repoti za utafiti.	Ndio ☐	La ☐

Tafadhali ongeza jukumu lango: _____

AU

Tafadhali ongeza shirika: _____

Ningependa kutajwa kwa jina la kuiga:	Ndio ☐	La ☐

Kama ndio ongea jina unalopendelea_____

Ningependa muhtasari wa mahojiano yangu	Ndio ☐	La ☐
Ningependa kupokea muhtasari wa matokeo ya Thesis na nimeongeza yangu ya barua pepe hapa chini .	Ndio ☐	La ☐

Sahihi ya mshiriki: _____

Jina ya mshiriki: _____

Tarehe: _____

Maelezo ya mawasiliano: _____

Appendix 4: Interview guide

General questions

1. What is your background?
2. How would you describe your interest in PFM in Kereita Forest?
3. Have you been part of any stakeholder group involved in PFM implementation?
4. How would you describe Kereita forest community?
5. Why is the forest important to community livelihoods?
6. Has your everyday life changed through PFM?
7. Has your understanding of livelihood changed since PFM started?
8. How is access to forest resources regulated and what are the rules?
9. Are there other informal processes that people follow to get access to forest resources?
10. Are there competing interest in accessing forest resources?
11. What determines who wins or loses in the process of accessing forest resources?
12. How are benefits from forest resources (particularly high value resources) shared among the community members?
13. What are the challenges of the PFM process for you? How about other groups?
14. How does PFM respond to processes of development in Kereita?
15. Does development pose any threats to livelihoods in Kereita?
16. Does development pose any threats to PFM?
17. What policy changes would you recommend to improve the effectiveness of PFM on livelihoods?

Specific questions to participants representing institutions.

1. What responsibilities does your institution play in PFM implementation and livelihoods support?
2. Tell me about your experiences in improving community livelihoods.
3. Tell me about your successes and regrets in enhancing forest livelihoods through PFM.
4. Who are the other PFM actors and in your opinion have they adequately carried out their role.
5. What are the impacts of urbanisation on forest conservation?

6. Any challenges posed to PFM by urbanisation?

7. What structural changes would enable PFM to achieve sustainable livelihoods for Kereita community?