

COMMUNITY INTERACTIONS IN NATURAL RESOURCE MANAGEMENT
A CREATIVE ANALYTICAL PRACTICE ETHNOGRAPHY OF THE MAMBILLA MONTANE HIGHLAND
IN NIGERIA

By

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ABSTRACT

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Decades of unsuccessful natural resource management strategies have caused policymakers and scholars to reconsider the role of community in resource use and conservation. The community's role is especially important since communities contain various resource users who rely on and relate to the land in multiple and conflicting ways. Relying entirely on qualitative methods and a storytelling activity that the author designed, she investigates her experience to place. The research illustrates how issues pertaining to land tenure, citizenship/ownership, economic and societal status, governance, gender, institutions, residual post-colonial and international paradigms impede sustainable natural resource management. The research shows that sustainability is specific to individual communities and people as they draw upon different factors when considering sustainable development. The research concludes that untangling the web of complexities that inhibit sustainable management of natural resources requires a different, unconventional step. This integrated approach suggests that in addition to technical assistance, natural resource management should be approached through the heart rather than the head, by facilitating practices that encourage love, friendship, generosity and empathy. This is an essential step for creating an enabling environment that can instigate good governance, transformative policies, strong institutions and responsible followership amongst others. Linked to new material realities this has the potential to engage the community in managing the natural resources and promote the transition to sustainable development.

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For
My boys - Teyei, Jason and Ethan Pam.
I love you all unconditionally!

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KEY TO ABBREVIATIONS

ATM- African Traditional Medicine

CBNRM- Community based Natural Resource Management

Mambilla Trans montane Highlands

Region – North East Region

Taraba State – The name of the state

Jalingo - The state capital

Ngel Yaki – Old village settlement

Yelwa Village – New Village settlement

INTRODUCTION

Early years and awareness

I grew up in what many would think was a very boring Nigerian home. I was not born into riches or splendor, but despite the many lacks, one thing I had in great abundance was love and stories. My father was a man of the outdoors; he loved nature and long walks. As we explored the great outdoors together, he would often tell me stories. It was through those stories that I learned valuable life lessons that remain with me today. As I grew and confronted the bitter and sour parts of life, I would remember characters in stories and how they rose above their challenges or outsmarted their opponents. I learned social skills of love, kindness, and friendship. Most importantly, I learned to respect, protect and revere the earth and all nature. I understood the concept of sustainability and how our survival tomorrow depends on how we care for the environment today.

I was also the last of 6 siblings. I was not spoilt but I was sheltered. Already a bookworm, I derived pleasure from the prints on paper and my greatest delight was to snuggle in a corner while sucking my thumb and read a book. In the absence of books, I had a vivid imagination and would create my own world where the grass was green and everyone lived in peace and harmony. Many years later, when it was time for me to go to the University and I was tired of being sheltered, I rebelled and chose the farthest school in my region. Suddenly alone and unguided, the reality of life shocked me and I struggled in every aspect of my life. I realized that the grass was not always green, indeed where I was in Maiduguri which is Sahel savannah and borderline desert there was very little green grass, a far cry from the lushness of my hometown of Jos. I quickly realized that

the world was anything but peaceful, instead a catastrophic mess of strife and anger. Jos was tagged the home of peace and tourism whose residents were from different parts of the country and the world. They were mostly attracted by its cool weather, breathtaking scenery, mineral deposits and land that attracted local industries.

While I was 600 miles from home and truly alone for the first time, Jos erupted into crisis and turned into a fiery cauldron of ethnic and religious tensions. Islamic radicalism grew in Maiduguri and the movement to install sharia law began. Over the years the rounds of violence intensified and went unaddressed, sparking the next round. The root causes are blurred, but issues of land ownership/rights and control of land and natural resources has always been a significant theme.

Nigeria like most of Africa is a country confronted with a myriad of problems. The gross poverty and lack which is a reality of everyday life for many is devastating. Basic amenities and services are nonexistent and 48.4% (90 million)¹ Nigerians are living in extreme poverty. But, the most vivid and probably the worst is the destruction of the environment and the natural resources (James, 1996). James also perceives the crisis facing the environmental degradation in the country to be more important than disease and poverty. He also states that it must be addressed immediately lest some colossal disaster occurs.

¹ http://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_NGA.pdf

I simply cannot understand how and why a country with so many natural resources including petroleum, tin, iron ore, limestone, sapphire and arable land is considered a “poor country”. The simple juxtaposition of the abundance of natural resources and widespread poverty reflects a profound paradox that intuitively suggests a problem in the way that natural resources are managed and income is distributed.

Agreeing with James, I always knew that I wanted to play a part in addressing issues of social and environmental sustainability.

My Quest

Environmental sustainability and development thus became a core focus of my life and work. As a community development practitioner, I spent years trying to support communities in conservation. I was taught to believe that conservation was only possible if the community stayed out of protected areas. Rules and strict regulations need to be made and enforced. I quickly realized that it was a big fat lie. People and community regardless of if they wanted to conserve the land should not be excluded from it. For many of them, the land was all they had.

In response to that, I co-founded an organization called Eden Creation Care Initiative² in 2012 which is an affiliated project of A Rocha International³. Eden works with Nigerian communities to

² <http://nigeria.arocha.org/>

³ <http://www.arocha.org/en/eden-cci-nigeria/>

help them protect areas important for their biodiversity through conservation, environmental education and scientific research.

I personally believe that natural resources are the sustainer of life on earth. I also believe that they are the foundation for which rural communities can survive as many communities rely on them for their livelihood and survival.

It is for this reason that I applied to graduate school in 2015. I found an email that I wrote to John Kerr who ended up being my advisor in the Department of Community Sustainability at Michigan State University. The email stated:

I am particularly interested in issues that are a challenge to Nigeria and its sustainable development. With the high poverty rates in the country and our growing population, issues around the environment are of great importance but are of least concern even to the government. I am interested in looking at models that will create awareness of the fact that our livelihood and existence is based on the livelihood and existence of earth.

That is what spurred this research, in which I combined interviews with natural resource users and archival research around community-based natural resource management in the Mambilla Highlands of Nigeria. My quest is to understand how communities at the local level can manage natural resources sustainably. For the context of this research the resources I am referring to include trees/forest, land, non- timber forest products, rivers and precious stones.

Mismanagement of Resources in Nigeria

It was with great astonishment that I found this narrative in the course of my archival research. It was written in 1952 by Mallam Muhammadu, Wali of Bornu, Minister for Natural Resources,

Northern Region. He wrote this story in a circular that he distributed to the members of the Northern House of Assembly. He wrote:

This is the true story of a farmer in Northern Nigeria. The farmer came to the buying station with his cash crop for the year. When he reached the weighing scale, he argued fiercely with the laborers who helped him bring in his crop because of payment for their services which accounted to a few pence.

When his crop was weighed, he was paid the sum of 75 pounds.

When the farmer had overcome his surprise at such a large amount he drew himself up and said proudly, "This morning I woke up a PEASANT. Today I return home a CHIEF".

The farmer then went into town and spent the entire sum of 75 pounds on a second-hand kit car. Happily, the farmer drove it home waving to friends and foes on the way. After a few meters the car broke down and the farmer had to be pushed home by the same laborers he had argued with over the few pence. The kit car sits at his house covered in dust and dirt. No one would give him even 1 pound for it.

The farmer is still a peasant.

If the end of the story had been that the farmer has purchased livestock, fertilizer, seeds or invested in land or anything that would have assured the farmer of greater income we would have all applauded and no one would have been upset about the poor farmer. Alas, that was not the case.

A country depends on its natural resources for its existence. If the blood of a man runs out, he dies. If the natural resources of this region are wasted we shall rise no higher than the peasant farmers I have told you about.

Please remember the story of the poor farmer. Judge your actions and your thoughts by his. Think and act wisely, with true consideration of the future welfare of the region. This will require patience and self-sacrifice. But the reward will come later and you will have long-lasting benefit to our nation. (Yola Province 5374 - Nigerian archives)

The farmer is Nigeria, and the mismanagement of natural resources has left many of its 200 million citizens as peasants.

With a population approaching 200 million, growing at a rate of 2.3% per annum (NPC 2009), Nigeria is Africa's most populous nation. It is projected that the human population of Nigeria will increase significantly to 800 million before the close of the 21st century (UN) and will be the fourth most populous country in the world by 2050 (US Census Bureau), thus exerting more demand on already scarce resources. Nigeria is also an incredibly diverse country and its people are divided into 450 ethnic groups, 200 languages, 3 major religions and 6 geopolitical zones. Our extensive and very diverse population makes cooperation of any sort difficult because the lines in which people can be divided are many and varied.

History of Community-Based Management in Nigeria

Historically, environmental conservation is not a recent phenomenon in Nigeria. Indigenous people have regulated use in sections of forest for spiritual reasons. Past generations knew about environmental degradation and the need for preservation. This knowledge found expression in traditional religious practices because Africans believe that everything belonging to the ecosystem and the environment has a strong spiritual meaning for humanity (Anane, 1997). These areas are often restricted from all human activities except in religious or spiritual ceremonies (Wood, 2008). The African attitude to nature is deeply rooted in the belief that "all things were created by the supreme being for a harmonious continuity and there must be a relationship of mutual obligation between all created things" (Anane, 1997).

Nigeria has a long history of forest management and exploitation. In 1899 the first Nigerian Forest Department was created to deal with timber and rubber trade and to establish forest estates. The

British colonial administration set up forest reserves, mainly for timber production, and the remnants of these reserves constitute the existing forest estate of Nigeria. This was extremely different from the indigenous method of resource conservation. The colonial government's approach, which was purely top-down, led to the alienation of customary land for conservation purposes (Gbadegesin & Ayileka, 2000).

Community-Based Management and the truth about communities

Challenges in natural resource management have led to a broad policy thrust on community-based management. This is apparently based on the hope and belief that community-based approaches are easy to implement (Agrawal, n.d.; Andersson & Agrawal, 2011; Berkes, 2004b). The broad implicit assumptions of these approaches are that the communities are close-knit, homogeneous entities, willing to invest in resource conservation and to possess the relevant capacities to undertake the management of local resources. These images of communities are attractive especially as they contest the dominant narratives that favor privatization or state control of resources (Agrawal & Gibson, 1999). Going by these views, it appears that decentralized community-based resource management would always lead to successful outcomes. However, these notions about community and community-based resource management processes exhibit a misplaced optimism, as communities are heterogeneous within a myriad of ecological, economic and social elements within a geopolitical context (Agrawal, n.d.; Andersson & Agrawal, 2011; Berkes, 2004b).

To understand these relationships and interconnected linkages I have written this thesis through the lens of the various resource users, who include:

Farmers: As much as two-thirds of all arable land is estimated to be affected by degradation resulting from a variety of factors, including population pressure, inadequate or ambiguous land tenure rights, inappropriate farm technologies and insufficient extension support and research. Most African soils are difficult to manage sustainably, particularly as population pressure, climate change, decreasing rainfall and other factors increasingly constrain agriculture.

Loggers/Timber Extractors: The Federal Department of Forestry (2001) estimates that Nigerian forests are being depleted at an annual rate of 3.5%, leaving only 10% of its area covered with natural forest. The country lost about 60% of its natural forest to agricultural, urbanization due to town expansion and excessive logging of timber and harvesting of nontimber forest products) between the 1960's and the year 2000 (FAO 2001). This biodiversity loss occurs in spite of the establishment of forest reserves, protected areas and associated conservation and environmental laws.

Fulani Pastoralists: Rapid desertification of pastureland, overgrazing and low rainfall has made it difficult for herdsmen to remain in their Northern base. Seeking alternatives, herdsmen have journeyed south seeking fertile pasture land and water for their cattle. However, that search leads to farms in Nigeria's middle belt – a region that is called the food basket of the nation. Mobility is an integral part of pastoralist occupation thus the need of vast land is important to their occupation making sedentarisation not very feasible.

Non-Timber Forest Products (Firewood, baskets, beekeeping): Biomass accounts for nearly 80% of the primary energy supply and satisfies the cooking and heating needs of most of the population. This has implications for deforestation and human health due to the (Ben-Iwo 2016; Holmberg, 2008; U.S. Energy Information Administration, 2016). Other trades like basket and mat weaving, beekeeping/ honey production, clay pots are affected by the activities of other resource users, which directly affects their livelihood. Additionally, many of the users in this category are females.

Mining and extractive resources: Artisanal and small-scale mining is a significant livelihood activity for most rural dwellers living in communities endowed with mineral resources. This process is indiscriminately carried out without any consideration for the environment and other users. Despite the dangers to self and the environment, the demand for gemstones and unattractive nature of farming which is the other alternative for the typical Nigerian youth creates a means of income for many.

Herbalists/Traditional medicine practitioners: Africa's population of 1.2 billion is approximately 15% of the world's total population. Yet it remains the poorest, most under-developed continent with profound health and mortality risk. Africa child mortality rates account for almost half of global deaths of children under 5, and life expectancy is very low. More understanding and utilization of medicines including traditional medicine may save lives and play a role in Africa's development. (Holmes, 2016). However, environmental degradation is affecting the availability of traditional medicine.

Hunters: Africa's biodiversity is already under threat from several natural and human-induced pressures. The biodiversity of the Mambilla initially consisted of lions, giraffes, elephants, warthogs all of which are completely non-existent due to hunting. Today the locals hunt smaller mammals as a source of protein.

Objectives

It is through the lens of these seven types of resource users that I present stories that illustrate four major objectives. These objectives remain key themes in each of their lives:

1. To emphasize people's dependence on natural resources

Poverty is real, and the land is life. Many resource users are connected to the land in an intimate and sensitive nature and depend on it for their livelihood and survival. However, the typical conservation model often excludes the role of humankind in resource management and we often neglect the importance of people and communities that live within and beside these resources.

Despite the absence of exact statistics, many studies suggest that many communities depend on natural and forest resources for their livelihood. Trees and forest products provide 350 million people living in or around tropical rainforest with 50% or more of their livelihood needs and 10% of jobs in developing countries. Despite difficulties in quantifying the economic importance, there is no doubt that they are an important source of cash revenue for local communities (Odera, 2009; Rudel, Defries, Asner, & Laurence, 2009).

2. To exemplify the challenges of conservation

Communities and resource users in the global south that are directly affected by strict conservation practices do not recognize and appreciate the global benefits of biodiversity and ecosystem services as much as people in the global north (Agrawal & Gibson, 1999; Berkes, 2004a). Even when they do, their dependence on natural resources for their livelihood and survival makes it difficult for them to actively practice conservation or sustainable consumption because they simply cannot afford not to exploit the resources. This creates a challenging and uncomfortable situation. The interaction between people and conservation is one of great concern, but we must ask: Does conservation win over community needs and do we prioritize financial benefit over people? (Agrawal & Gibson, 1999; Berkes, 2004a)

3. To elucidate the effects of how the typical conservation model approach separates people from the land

The strict conservation model presents a situation where the empowered government of the day writes and enforces laws prohibiting or severely limiting human use of a resource. This results in the impoverishment and distress of excluded communities that need the land (Barrett, Brandon, Gibson, & Gjertsen, 2001). There has been a long-standing debate on the social impacts of conservation programs on rural populations and the perceived successes of a community-based approach to conservation (Agrawal & Gibson, 1999; Berkes, 2004b; Ikemeh, 2013). One viewpoint of the argument claims that biodiversity conservation and protected areas are contrary to the perceived interest of the poorest among local people. The typical conservation model abolishes land ownership and deprives them of their livelihood. On the other hand, depletion of biodiversity

represents a loss of essential "insurance" and risk management strategy, particularly regarding the ability to switch to alternatives in the face of changing conditions, climate change, natural disasters, and harvest failure (Ikemeh, 2013).

4. To demonstrate the magnitude of the conflict exacerbated by natural resource scarcity

This last decade has witnessed increasing competition over natural resources resulting in bloody conflict between major land use actors in Nigeria (Akinwotu, 2018). People depend on natural resources in diverse ways that are often in conflict with each other. Homer and Dixon (1998) articulated the theory of eco-violence and argued that large populations in developing countries are dependent on four environmental resources that are fundamental to food production: freshwater, cropland, rangeland, and forest (Homer-Dixon & Blitt, 1998). Scarcity or shrinking of these resources as a result of population growth, economic development, misuse, over-use or degradation under certain circumstances will trigger conflicts. The theoretical assumption is that resource scarcity is the product of insufficient supply, unequal distribution of a resource as a result of environmental hazards that force communities into a condition of deprivation or violence. This can reduce economic productivity, both for the local groups experiencing the scarcity and for the larger regional and national economies. The affected people may migrate or be expelled to new lands. Migrating groups often trigger ethnic conflicts when they move to new areas, while decreases in wealth can cause deprivation conflicts. (Homer-Dixon & Blitt, 1998; Odoh & Chigozie, 2012)

Research Questions

This study will carefully examine the relationship between various: (1) resource users (2) between resource users and the natural resources. Special consideration is placed in highlighting the practical and conceptual limitations in the implementation of natural resource management that determine why specific community management regimes perform better than others. As such the overarching research question is:

What are the perceptions and experiences of the various resource users about community-based natural resource management?

Specific questions that help me answer this question are:

- a. What challenges do different types of users face in trying to earn livelihoods from the forest?
- b. What are the conflicts among different resource users and what challenges do they face to be able to work together in a way that benefits themselves and protects the forest?
- c. What do they understand about sustainable management of natural resources?

Importance/ Significance of Study

My heart bleeds to see this endless cycle of poverty, environmental degradation and bloodshed; and I am not alone. Millions of Nigerians want to change the narrative and desire a situation where the natural resources show tangible evidence of structural change towards high value-added to every Nigerian regardless of age, sex, occupation, religion or tribe. Harnessing natural resources for sustained development is both technically and politically difficult, which is why the historical

record is poor. Success depends upon getting a chain of decisions right, not just once but repeatedly for around a generation (AERC 2012).

This thesis is my little way of understanding and documenting this situation so that tangible solutions can be proposed. There is extensive literature on community-based forest management systems and natural resource management systems (Andersson & Agrawal, 2011; Armitage, 2005; Berkes, 2004b; Delgado-Serrano et al., 2018; Fabricius & Collins, 2007; Gosling, Shackleton, & Gambiza, 2017; Nelson & Agrawal, 2008) but lapses exist especially in the Nigerian context.

In the past, planners and implementers of natural resource development projects in Nigeria have not adequately shared and documented their experiences. As such, people and organizations have not had the privilege to learn from past lessons learned and valuable information has been lost. Where such documentation exists, the perspectives of the community are usually absent. In Nigeria, the existing studies all focus on the southern part of the country where there is more forest, rainforest and mangrove (Ite, 1996; Akinsoji, 2013; Akinyele, 2009; Ene, 2013; Gbadegesin, 2000; Odera, 2009).

The knowledge derived from this research will be especially useful in thinking of community management, especially through the lens of the resource users. Community management is concerned with various specific issues which differ from person to person and community to community. It is thus important to understand how diverse peculiarities, individual household, organizational and communal characteristics relate. This would be of great importance because every culture is unique and every community is different.

BACKGROUND AND HISTORY

You made me work hard to see you. But you were worth it. For months, you obsessed my mind as I wrote and read and thought about how to make our meeting memorable and impactful. I had high expectations, and you did not disappoint me.

Like most things in life, there was the thrill and the fear. The thrill of not knowing what to expect but having an open mind that it would just be okay. The extreme sense of excitement that it was scary. Fear of the unknown.

When I finally ascended the mountain and saw you, I knew I had to share this story with the world. The splendors of creation at war for its survival while it fulfilled one of its obligations to nurture humanity on earth.

The Journey

Arriving at the Mambilla was like a pop of champagne. That was how Rev. G. Schneider described his experience in 1955. I second that description. It was an arduous journey, and I can imagine Rev. G. Schneider feeling like I did when he penned that the Mambilla is both exhilarating and delightful (Schneider, 1955:113).

From Michigan, I flew 17 hours to Nigeria. Arriving in Abuja, I drove 300 miles to my hometown in Jos. I had initially planned to take a bus from Jos to Jalingo, the capital city of Taraba State.

However, arriving in Jos, I was bombarded with opposition from family and friends. Let me add this was based mainly on concern for my safety, especially considering the present status of the roads, which were exceedingly bad. Their disrepair was evidence of a government unable to live up to expectation and provide basic necessities for the people whom they serve despite the abundance of natural resources, especially crude oil, that had earned Nigeria the name "the Giant of Africa."

With little convincing, I decided to fly, cutting the 13-hour road trip and instead flying 1 hour to Jalingo, the state capital of Taraba State. I peered through the window the entire journey hoping to get a glimpse of the Mambilla. Alas, it was not my luck. Sixty minutes later our tires hit the runway. Still looking through the window, I could see the men on the runway running around helping the plane to park and getting our luggage off the aircraft manually. They held large size towels and used them as handkerchiefs to mop the sweat off their face. The towels were doing very little because immediately after they wiped their faces, large beads of perspiration popped out again and their faces glistened under the African sun.

The temperature was 104 Fahrenheit.

The next day I continued my journey, a 7 hour trip to the top of the Mambilla. I sat in front of the car with my camera, watching the landscape and the people as they passed me by. Everywhere around me, I saw scanty tree cover and thinning grass, evidence of overgrazing and deforestation.

I remember the hawkers calling out to potential customers to buy their wares and swarming over whenever we stopped. As a result of employment, 14.2% of Nigerians struggle to seek survival through every and any means (Labor Force Statistics, 2017).

“Siya kwai,” the young girl shouted at my window. Her tray was filled with small quail eggs. On the side was a little salt and pepper. I ignored her. To look at her or the eggs was an indication that I was interested and she would linger on shouting *siya kwai* in my ears with the hope that I would sway and buy an egg.

“Groundnut, buy groundnut,” another shouted in English. Other languages commonly spoken in the area were Fulfude and Hausa.

Eventually, I could not resist and I called the young girl over and asked her how much a tin of the boiled groundnuts was. She told me, and I asked for two tins. She poured them into a clear plastic bag, and I delved right into it. How old was she, I thought, as I began to munch, and why wasn't she in school?

“Eat some groundnuts,” I said to the driver. It was culturally disrespectful to eat in front of someone and not offer them what you were eating.

“I am fasting,” he replied. Christians and Moslems are in almost equal proportions in Nigeria, and African Traditional Religion is less than 5%.

"Sannu da azumi," I said, putting away the peanuts. It was also disrespectful to eat in front of a fasting person.

"Don't worry about me," he said urging me to eat the groundnuts with a smile. I refused and kept the snack in my bag. Hours later I succumbed to the hunger pangs in my stomach and ate the groundnuts quickly and discreetly.

Initially, the driver spoke a lot, telling me about other researchers he had traveled with to the Mambilla. As the sun rose in the sky and his body weakened from the lack of food or water he kept quiet. The only constant was his music. The driver changed CD's regularly and hummed or sang aloud to his music. The playlist was unique, to say the least. Mariah Carey pop music would play, followed by a song from an Indian Bollywood movie before Zaki Azi, a Nigerian rapper sang in Hausa.

Every 20 miles or so there was a crudely assembled checkpoint, either the immigration service, military officials, police officers, road safety officials, vehicle inspector officers or local vigilantes. The most established checkpoints were the Immigration service checkpoints since we shared a porous border with Cameroun. Their checkpoints were sacks of cement filled with sand, but others were just stones, or tree trunks dragged onto the road. Some of the groups had a spiked metal rod that they would throw into the road when they sensed an uncooperative driver.

From a distance Yusuf, the driver, would reach for his glove compartment and take out a single note from the wad of N50 notes and crumple it in his hand before turning down the music.

"Sannu da aiki," the driver would say in greeting.

Sometimes the officer responded, but often they didn't. Instead, they would glare at the driver, at me and then move to the back of the car peering at my bags through the glass at the trunk.

"Driver, what is inside those bags," they said menacingly.

"They are for madam.....women things," Yusuf said looking at me.

"That and my books," I added. Not wanting the idea of lingerie and perfume to linger in their minds.

"Yes, yes," Yusuf added. "She is a student coming to do some research."

At the same time, the driver would extend his hand out the window as if to open the door from the outside of the car. His hands would meet the officer's hand, and the silent exchange of currency would immediately create a sunny disposition from the officer.

"Safe journey," they shouted as we drove away.

Sometimes, the officer would make the driver disembark from the car and meet him behind the car or in a corner. When this happened, the driver often returned in a grumpy mood, and I know he had been extorted for more money. But, sometimes the officers simply waved him by, shouting felicitations as we drove past leaving a cloud of dust.

The Mambilla

Have you seen the fruit sellers that peel their oranges with a razor blade in one circular motion? Reflecting back, that is what the trip up the mountain to the Mambilla reminded me of. The single narrow road winding up – round and round into the clouds. The mountain on one side and a deep ravine on the other side cascading into a bright green mass of vegetation consisting of trees, shrubs and rocks. This magnificent landscape continued as far as the eye could see ascending and descending elegantly as hills, mountains and valleys, the view divided by the streams that flowed down forming trench-like incisions that divided the landscape.

Transfixed, I asked the driver to stop and emerged from the van to soak it all in and take pictures. Through the side of my eye, I could see colobus monkeys perched on a rock, looking at us intently. It stood still as if carved from stone. The possibility that they would swing down and snatch my camera crossed my mind for a second and I held on carefully to my newly acquired possession. Their stare was intent, like they were marking role call to keep a record of all the comings and goings from the area.

Back in the car, the driver, shouting loudly over his clamorous music, told me tales of how in the days past the chimpanzees would block the road and demand a gift or banana. That was before they were killed and driven to hiding deep into the forest. Drunk with the crisp mountain air, a welcome adjustment from the Jalingo heat, I laughed. The Mambilla is characterized by a semi-temperate climate with a mean average temperature of 40-68F, dropping to about 30-60F at

night. The Mambilla people were not exempt from environmental changes and during later discussions they always mentioned how much warmer it was now compared to years gone by.

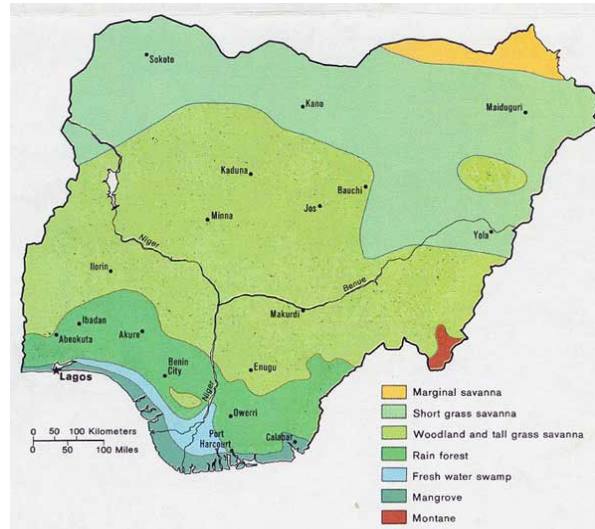


Figure 1. Vegetation zones of Nigeria (Research site in red) zones of Nigeria

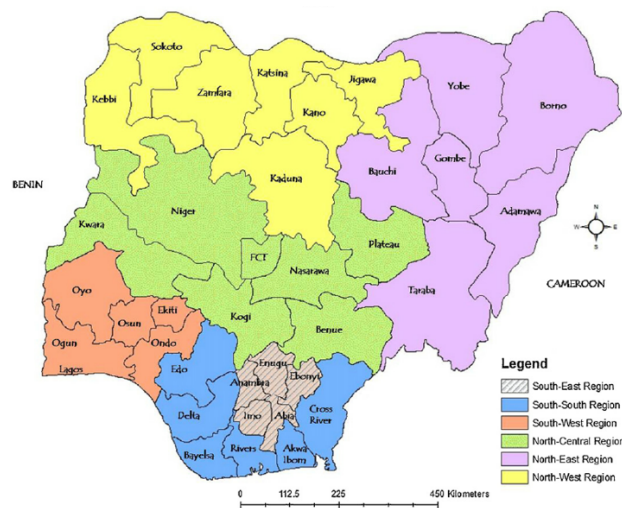


Figure 2. Geopolitical zones in Nigeria (Research site in lilac)

The Mambilla is the common name for my research area. It is the highest plateau in Nigeria, located in Taraba state, in the north-eastern part of the country. In Figure 1 it is the red area.

Nigeria has six geopolitical zones that are not based solely on location. Instead, they are based on similar cultures, ethnic groups, and common history. Contrary to its name, the Mambilla Plateau is not flat but an uneven and angular land of approximately 3100kmsq. It consists of mostly open, rolling grasslands used mainly for agriculture and grazing, interspersed with fragments of forest.

There are about 15 forest fringes on the Mambilla Plateau, which include Ngel Yaki Forest Reserve, Leinde Fadali, Sarkaka, Ndum Yaji, and other fringing forests; but Ngel Yaki Forest Reserve is the most diverse forest (Chapman & Chapman 2001).

The Mambilla is drained by numerous watercourses of various sizes. Smaller rivers meander left and right over rocks and boulders to form the River Donga that empties into the River Benue, Nigeria's second largest river. The River Niger, for which the country is named, is the largest river whose waters are rough with many rapids and waterfalls. The River Benue is mostly uneventful and flows steadily until it forms a confluence with River Niger and takes on its name.

Like most of the country, the area has two seasons; the dry season or harmattan and the rainy season. During the dry season, the North-east trade winds blow dust-laden air over the Sahara Desert into the Gulf of Guinea for approximately three months. Predictably, this results in hot and dry weather. The rest of the year is wet and rainy, influenced by an air mass originating from the South Atlantic Ocean, also referred to as the south-west wind.

The Mambilla has one of the few transmontane forests in Africa and it was not surprising to discover that there was an abundant supply of scientific papers and theses written on its ecology and scientific aspects. However, research on the social aspects of impact of community and natural resources in Nigeria are extremely scarce. Despite the expanse of protected areas in sub-Saharan Africa.

The original inhabitants of the region are the Mambilla people, a group of tribes that share a common language base, although each tribe has a unique dialect. The Mambilla people are predominantly subsistence farmers. Other tribes in the area are the Kaka, Tigon, Wurkun, Fulani, Ndola, Panso and Chamba.

From 1908 until the end of the first World War, Germany occupied the region. Following WW1 the German administration ended, and the British took over the role. In 1960 Nigeria gained its independence.

The Ngel Yaki Forest Reserve: Ecology

Ngel Yaki means 'forest of honey.' I could stop right here because if the name the people gave the forest does not reveal the relationship between the people and the place, I do not know what will. The reserve caters to a variety of resource users and provides a wide range of natural resources used by people, such as fruits, building materials, natural medicines and honey, as well as the land itself.

African montane forests, such as Ngel Yaki Forest are of high conservation priority because of their complex origin and evolutionary history (White, 1981). The Ngel Yaki Forest is situated towards the western escarpment of the Mambilla Plateau and is made up of the main forest and three forest fragments separated by hills covered by montane grasslands. The reserve is situated between latitudes 07° 05'N and longitude 011° 05'E at an altitude of 1,400m – 1,600m above sea level. The reserve occupies about 46km² area of land, with about 7.2 km² of sub-montane to mid-altitude forest. Figure 2 shows the topography of the forest reserve (Ahmed & Oruonye, 2016; Zerquera et al., 2017).

The Ngel Yaki Forest harbors several threatened species, including the rare and endangered Nigeria-Cameroon chimpanzee (Dowsett-Lemaire, 1989), as well as diverse forest flora and bird species diversity, like the threatened Bannerman weaver (*Ploceus bannermani*), Crossley Ground Thrush (*Zoothera crossleyi*) and the Secretary bird, all of which are listed in the IUCN Red Data as vulnerable (<http://www.iucnredlist.org/>). Ngel Yaki is classified as an RSPB- IBA (Royal Society for the Protection of Birds - Important Bird Area) by Birdlife International (Hall 1976, Ash et al., 1989). This diverse forest flora is reflected in the high number of primates, mammals, reptiles and amphibians, and other animals, many of them unknown (Dunn,1999; Dowset 1989). Over 146 vascular plant species have been identified and collected by Dr. J.D Chapman, many of which are trees endemic to the Afromontane region (Chapman, Olson, & Trumm, 2004).

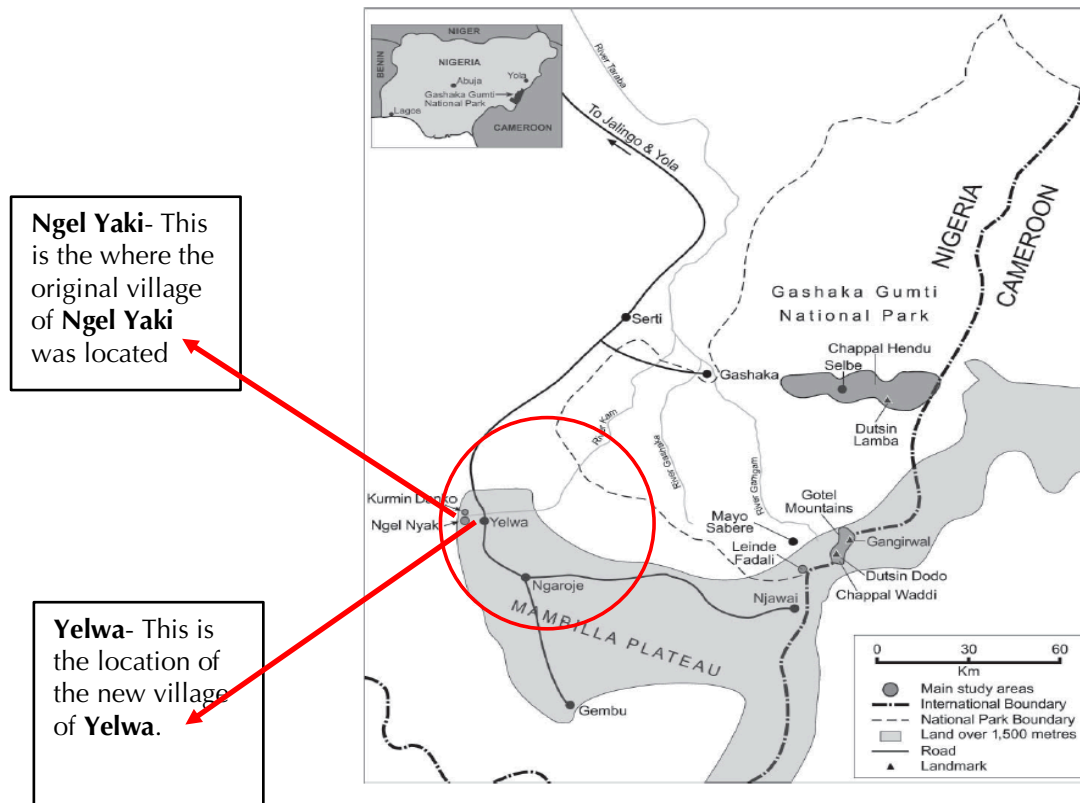


Figure 3. Location of Ngel Yaki and Yelwa village

Additionally, the caps of montane forest in this region are very important for watershed conservation. Without this protection, there is little or no water available in the dry season (Bawdenn & Tuley, 1966).

The Ngel Yaki Forest Reserve: History

The first formal written proposal to protect the forests of Ngel Yaki was submitted on the 11th of March, 1961 and was signed by the then Government Forest Guard of the Mambilla District, Alhaji Bukar Gaji and approved by the District Head and the District Officer. The short proposal, under the subheading of 'Situation and Boundaries,' was less than 100 words in length. The document

enumerated the reason for gazettement the area which was to protect the biodiversity within the forests of Ngel Yaki and Danko (Macdonald, 2007).

In April 1969, the reserve came into existence, gazetted as the Gashaka Mambilla Native Authority Kurmin Ngel Yaki/Kurmin Danko Forest Reserve. In 1973, a visit was made to the forest reserve by Dr I. Colquhoun, the senior wildlife officer in the district at the time, who, after making some detailed observations, was so impressed with the rich biodiversity within the forest that he recommended to the relevant authorities that the status of the reserve be upgraded (Chapman and Chapman, 2001).

The report states that *“Ngel Yaki must have great significance, both phytogeographical and biological. One would like to see it constituted a strict nature reserve.”* As a result of Colquhoun's visit and the report, in 1975 the forest reserve was re-gazetted as the Ngel Yaki Forest Reserve (Chapman and Chapman, 2001; Macdonald, 2007).

In addition to viewing the biodiversity within the forests of Ngel Yaki and Danko as irreplaceable and unique, the authorities who brought the reserve into being also had certain views of local people. Even though it was post-independence Nigeria, the transition was slow and the colonialist were still in power. The colonial ‘whiteman’ viewed indigenous people as dangerous and ignorant vis-a-vis their natural environment and believed that they must be kept entirely out of protected areas lest they senselessly destroy them.

Regarding Ngel Yaki, official documents state that *"even though it is a Forest Reserve, farmers have cast covetous eyes on it, and any relaxation of control could be disastrous"* (Archival documents - Ministry of Natural Resources, 1973). These discourses have persisted up until the present day with conservation literature usually depicting local people as needless destroyers and exterminators of plants and animals.

Today the reserve is under the jurisdiction of the state, which continues (although highly irregularly) to employ forest guards in conjunction with the Nigerian Transmontane Forest Project which is operating under a contractual agreement with the state government to protect the reserve.



Figure 4. Map showing Mambilla Plateau, Taraba State, Nigeria (Chapman and Chapman, 2001)

Displacement and Forced Resettlement (From Ngel Yaki to Yelwa Village)

After the inhabitants of Ngel Yaki were displaced they moved to a new place that they called Yelwa which means 'new' in the common tongue of the area. Yelwa was chosen as the new relocation site because of the construction of a newly tarred road. The people were told that it would move them closer to modern development. Unfortunately, more than 50 years later they are still without running water, electricity or telecommunication. Their primary health care and educational systems leave much to be desired as professionals posted to this area often do not want to reside there. (Refer to figure 3 to see the location of the new village.)

Displacement and forced settlement is a crucial aspect of the community-conservation dynamic that cannot be ignored. The creation of the reserve at Ngel Yaki was the beginning of an ongoing and dynamic relation of power between local people and conservationists (Macdonald, 2007).

Displacing people from their homes to protect an area for biodiversity poses many serious consequences. The move itself is emotionally and physically painful, requiring a change in residence from a place where people may have lived for many generations to a foreign and sometimes unwelcoming new home environment.

Further, displaced people may, due to a lack of access to land, jobs, etc., become impoverished, something that Cernea (1997) claims to be "the central risk in development-caused involuntary population settlement."

Cernea and Schmidt–Soltan (2003) show this in their study, *The end of forcible displacement? Conservation must not impoverish people*. In their work, they studied nine conservation projects in the Central African region and made the following conclusions as negative effects of displacement.

1. Landlessness, referring to land on which displacees' livelihoods were based, suddenly commandeered. It also reduces access to natural resources with which they are familiar.
2. Joblessness, in regards to lost wages, especially for landless laborers
3. Homelessness restricts the amount of land they have to reside in and use.
4. Marginalization, when families lose economic power and drop in social status. This results in a loss of confidence in society and self, as well as a sense of injustice.
5. Increased morbidity and mortality, a risk that relates to the decline in health standards and life expectancy as a direct correlate of displacement. Displaced people's health declines as a result of psychological stress and trauma as well as relocation-related illnesses, e.g., malaria.
6. Food insecurity and undernourishment, which refers to what can happen when the diversity of food crops drops as a result of displacement, sometimes leading to a simplified diet lacking essential nutrients.
7. Loss of access to critical natural resources held in common by a community, such as water bodies, grazing areas, forested land, burial grounds, etc.
8. Lastly, displacement often tears apart the existing social fabric: it disperses and fragments communities, dismantles patterns of social organization and interpersonal ties. Kinship groups become scattered as well.

(Adams & Hutton, 2007; Bray & Velazquez, 2009; Cernea & Schmidt-Soltau, 2006; Kluwer & Trust, 2018).

This situation is not peculiar to Ngel Yaki, and other research has been done about this issue. Ranger (1989) in his research in Zimbabwe shows that forced relocation and resettlement is intimately linked with socio-economic disruption and goes so far as to call the process of relocating segments of the population inhabiting the Matobo National Park 'a nightmare' both for the resettled African and for the Native Department. Ringo (1999) describes the removal of Maasai from their ancestral grazing lands in Tanzania through government-backed evictions.

Often times, as in the case of Ngel Yaki, the process is carried out on the margins of legality. The affected groups are neither compensated nor offered alternative residential or grazing lands, as the law required. Displacees are seldom provided for and in the rare cases where alternative livelihood strategies are put in place for those forced to move they are usually inadequate. The result is always the same: unprecedented loss and suffering to families and property.

Additionally, displacement and resettlement often put people in situations where they are impinging on other resource user groups' populations. Research demonstrates how this process often leads to conflict and results in loss of life and property. The research also illustrates how whether organized by authorities or not, displacement is invariably connected with impoverishment (Adams & Hutton, 2007; Bray & Velazquez, 2009; Cernea & Schmidt-Soltau, 2006; Kluwer & Trust, 2018).

METHODOLOGY

How It All Began

I have always considered myself a storyteller. For as long as I can remember, I have enjoyed writing about my day. I argue that is different from a journal because it is not just a chronology of daily events but a debrief where I had the liberty to speculate on why certain things happened, how they could be better and what I learned. I also enjoyed writing stories and scenes based on the people I met and the events we experienced together. I was an extreme introvert growing up, and my pencil and book were my lifelines. As such, I was continually internalizing and reflecting on everything that happened to me.

In graduate school, I felt like a freak. My papers and presentations were on issues that affected me personally, and the urge to write about my own experience or share a story was overwhelming. Writing them in the strict academic sense was bland and uninteresting for me. Additionally, I never felt like I was able to communicate well enough. Little did I know that those were the makings of ethnography.

Ethnography is a systematic approach to learning about the social and cultural life of communities and institutions. Ethnography understands that human behavior and the way people construct and make meaning of the worlds and their lives are variable and locally specific (LeCompte, M. D., & Schensul, 1999).

Over the years the ethnographic genre has been blurred, enlarged, and altered to include poetry, drama, conversations, readers' theater, and so on. Laurel Richardson calls this Creative Analytical Practice Ethnography or CAP Ethnography. This label includes work where the author has moved outside conventional social scientific writing. Richardson (2000) says that CAP comes from the Latin word for head, *caput*. Using head to signal ethnographic breaching work can help break down the mind/body duality. The head is both mind and body and more, too. Producers of CAP ethnography are using their heads. The products, although mediated throughout the body, cannot manifest without headwork (Richardson, 2000).

The practices that produce CAP Ethnography are both creative and analytical. Any dinosaurian beliefs that "creative" and "analytical" are contradictory and incompatible modes are standing in the path of a meteor. They are doomed for extinction. For example, the evolution, proliferation, and diversity of new ethnographic "species" during the past two decades include: autoethnography (e.g., Behar, 1996; Bruner, 1996; Church, 1995; Ellis, 1993); fiction stories (e.g., Cherry, 1995; Diversi, 1998; Frohock, 1992); poetry (e.g., Baff, 1997; Brady, 1991; Diamond, 1985; Glesne, 1997); drama (e.g., Ellis and Bochner, 1991; Paget, 1990; Richardson and Lockridge, 1991; Richardson, 1993, 1996a); performance texts (e.g., Denzin, 1997; McCall and Becker, 1990; Mieniczakowski, 1996); writing stories (e.g., Richardson 1995, 1997; St. Pierre, 1997); mixed genres (e.g., Brown, 1991; Davies, 1989; Fine, 1992; Hooks, 1990; Jones, 1998; Lather, 1991; Stoller, 1989; Ulmer, 1989); and so on (Richardson, 2000 pg. 10).

Autoethnography is an interpretive form of narrative research that puts into words the process of inquiry. Ethnographic life is not separable from the self, says Laurel Richardson (2000). As we write, the way we understand ourselves informs what we write and how we construct meaning (Richardson, 2000)

Ellis and Bochner (2002) write that autoethnography makes “the researcher’s own experience a topic of investigation in its own right.” It places self within the social context. Brianna Darling in her experience during Peace Corps in Tanzania says “as an autoethnographer, I studied the culture of the community I lived in, but through the lens of myself (Darling, Kerr, Thorp & Chung, 2014). These personalized accounts are drawn from one’s experience to broaden knowledge of a way of life, discipline or phenomenon.

I read Richardson and realized in trying to write in a traditional academic style; I was the dinosaur, and forcing myself to conform was sucking the life out of me.

Instead of conforming in this thesis, creative analytical practices (CAP) in the form of autoethnography and storytelling were my outlets. I also consulted archival documents to enrich my existing data with a temporal dimension which can allow for an added level of analysis. During this process, I felt myself grow and flourish.

<p style="text-align: center;">Creative Analytical Practice Ethnography: <i>This is a qualitative research method where the author has moved outside conventional social scientific writing. In CAP ethnography the lines are blurred and enlarged to include poetry, drama, fiction stories, creative nonfiction, performance text etc.</i></p>			
Research Method	Define	Data Collection Method	Why did I use it in my research
Ethnography	Ethnography is a systematic approach to learning about the social and cultural life of communities and institutions. Ethnography is based on the understanding that human behavior and the way that people construct and make meaning of the worlds and their lives are variable and locally specific (LeCompte, M. D., & Schensul, 1999).	Formal and Informal interviews Participant observation Tales by Moonlight Archival documents	Understanding another culture is important in achieving the goal of your research. By immersing myself in the culture of the Mambilla people I was able to understand and experience first-hand the relationship between the various resource users and the resources.
Autoethnography	Autoethnography is an interpretive form of narrative research that puts into words deep reflexivity and writing as a process of inquiry (LeCompte, M. D., & Schensul, 1999).	Me	I came to this study with a lot of assumptions. As I interacted in my community, I was forced to continually acknowledge the assumptions and preconceptions I had in light of what I had just heard or seen.
Creative Nonfiction	Creative nonfiction tells a story that is grounded in research data and draws on literary conventions. Stories are not made up or imagined but are based on empirical data systematically collected. Each story is fictional in form yet factual in content. It is grounded in real events and people's lived experiences that a researcher observed in some fashion (Caulley, 2008; Smith & McGannon, 2015).	Formal interviews Participant observation Archival documents	I found that each of these stories perfectly illustrated my objectives for this research.

Table 1. Research method justification

The Experience of a Lifetime

The Mambilla was quite an experience. Before arriving for my research, I had never been to the area. Nigeria is a large and very diverse country, and one mistake that people make is assuming that all Nigerians are the same and one's experience in one region gives you the general idea of what any part of the country is like. I knew and understood that research in that community could be different from anything that I expected to see or do. But despite that, I must honestly say that the Mambilla was a shock.

But, it was a pleasant shock and a wonderful experience. There were so many remarkable things that I will definitely never forget it. The interesting people, the breathtaking views, and the sounds of the Mambilla: a cricket, a frog croak, bugs flying around a light, the drip of water on my zinc roof and bird songs; chirps and whistles never heard before, at least by me.

How and Where?

I have always found qualitative research has been most effective in uncovering complex and sensitive issues that I want to unravel.

Qualitative interviews are data-gathering methods where through conversations a researcher guides the informants to elicit details and depth about the research topic (Rubin & Rubin, 2011). Interviews yield direct quotations from people about their experiences, opinions, and knowledge (Patton, 2005).

A qualitative researcher may or may not have a questionnaire. I developed an interview guide with open-ended questions to ensure that all relevant topics are covered (See appendix). However, I used it primarily as a guide, not as a rule of thumb (Rubin & Rubin, 2011).

While designing my research I struggled with deciding if I should study various geographical areas and learn collectively from them or concentrate on one singular case study. I concluded that researching multiple case studies in various geographic regions of the country would be impossible to do if indeed I wanted to go in depth considering the time and resources that I had.

Poteete and colleagues (2010) define a case study as an intensive analysis of a well-bounded phenomenon that may rely on qualitative or quantitative research methods. Among the many advantages of a single case study is its ability to essentially put complex relationships under a magnifying glass so that interwoven strands can be teased apart. As I was soon to realize, this led to a sharper distinction between related yet distinct concepts and phenomena, greater appreciation of multidimensionality and conditional hypotheses (Poteete, Janssen & Ostrom, 2010).

Additionally, the vicarious experience of a case study offers us accessibility to where we ordinarily would not or cannot go. It allows us to see things through the researcher's eyes and observe things we otherwise might not have seen adding nuance and subtlety (Maxwell, 2013).

Who and Why? (Meeting the Community)

On the first day, my host called out to me in the morning. My carriage awaited - a motorcycle. Mohammed, my driver, took me into the village. He was a quiet man and I knew that he would be funny if I got to know him better. But I was an unaccompanied female. So, naturally he kept his distance. Eventually, we became friends and I saw the comic side of him. We made our way through the mountain over a bridge made from eucalyptus logs and through a little woodland until I was in the middle of Yelwa village. Yelwa was the closest town to the Ngel Yaki reserve and many of the villagers that once lived in the forest (Ngel Yaki) now resided in Yelwa.

Together with Mohammed, I made visits to potential people that I would interview, and I started with the Ardo (the chief). At the door to the Ardo's house Mohammed asked me to wait outside, but from where I stood I could still see everything. From the door, Mohammed made himself as small as he could. Kneeling and prostrating he spoke rapidly in Fulfade before I was finally summoned.

Summoned, that sounds grand. I secured my head covering, removed my shoes and walked into the room. I knelt down greeting over and over until I was invited to sit. The room was filled with 9 other men and at no time did I make direct eye contact. Mohammed introduced me and the Ardo, who was also a teacher in the nearby town of Gembu and only came home on the weekend, welcomed me. He began to tell me about the people, but before he could talk any further, I made an appointment to meet with him the next week.

After leaving the Ardo's house, I also met the Wakili, a religious leader. He was writing on his black wood tablet with ink in a sprite bottle. When he saw us, he poured the ink back into the sprite container and sat up straight. We exchanged pleasantries, and he told me that he had injured his leg on a bike and the pain was spreading from his foot all the way to his thigh. His wives shouted greetings to me from the kitchen.

I was introduced to an old lady who weaves baskets. She was so friendly, she tried to put me on her back like a little baby. She actually tried to do that. She was dancing and singing and shook me and pointed to her heart asking me to marry her son. Her hands were soft from constant manipulation of weaving blades of grass.

Baba Manasseh was sitting on a culvert when I met him for the first time. Every inch of his clothing had patch work done. His slippers were also mended in many different ways. I told him I would want to interview him but later in the day. Mohammed said he was crazy and his mind was leaving him so I should stay away from him. He looked like an interesting person and I hoped there would be a day that he was lucid. Unfortunately, it never happened.

Baba Adamu Mbar is definitely a farmer and a fisherman. He was working on transplanting the eucalyptus seedlings in his nursery outside. When he saw us, he led us back inside the house. There were nets in his compound and one of the kids in the compound was playing with a crab. He looked for a seat in his compound but we could not find any and we ended up sitting on tree stumps outside.

These and many others were the people that I lived and worked with. A colorful group of people from all walks of life and a variety of ethnic groups, age, sex and socio-economic positions. They were more than respondents to me; they were neighbors and as such, I conducted my interviews in various locations: in the farm, kitchen, under a tree or in front of a house. The interviewees were selected by purposive sampling and snowballing, which involves the selection of informants based on important characteristics under study. Purposive sampling, also called purposeful sampling by Patton, refers to respondents that are selected for a reason (Quinn, 2002). In this case, my reason was respondents who live close to the natural resources and suggest cultural knowledge associated with resource base livelihoods of any sort. Snowballing takes into consideration the process of referrals by well-situated persons. This sample included representatives from the various resource users groups: hunters, farmers, firewood/ charcoal collectors, herbalist, etc.

About my Research Questions

To reiterate my overarching research questions are:

What are the perceptions and experiences of the various resource users about community natural resource management?

Specific questions that help me answer this question are:

- a. What challenges do different types of users face in trying to earn livelihoods from the forest?

- b. What are the conflicts among different resource users and what challenges do they face to be able to work together in a way that benefits themselves and protects the forest?
- c. What do they understand about sustainable management of natural resources?

Maxwell states that qualitative research designs are flexible rather than fixed; inductive rather than following a strict sequence or derived from an initial decision (Maxwell, n.d.)

However, I did not know how true that statement was until I experienced it for myself.

I started with a different set of research questions related to how we could learn from the successful community - based natural resource management efforts in Mambilla. I liked my research questions and, as silly as it sounds, I had become attached to them. Why wouldn't I? As a rookie researcher, I had spent 5 months trying to get it right. It's not like my research questions were bad or wrong. I still think they were awesome and if I could answer them adequately, it would be impactful.

When I returned from the field my advisor asked me several times about my research questions and I always answered superficially. When I really, honestly looked at them I realized that they did not work as well as I thought they would, especially considering the data I had. Most importantly, there were no active CBNRM groups in the Mambilla, so I had to change it from learning from an established community management group to understand the relationship between each of them and to the land and resource that they utilize. To discuss that would entail me having to deal with

the Nigerian Conservation Foundation, which had been there for less than a year over 10 years ago. I then had to go through the gruesome surgical procedure of weeding and redesigning my research questions.

Through that process, one of the big lessons I learned is that research questions are not only instruments but also tools for discovery, clarity and focus. They certainly did their job for me. I eventually considered the data I had collected, and I also considered my interest with which I did some major changes to my research questions.

Qualitative research is reflective. That I knew in my head but not in practice.

The more I thought about my research questions, the more they developed in my mind, gradually metamorphosing until they changed into something I could work with. Periodically, I would look at the large print over my desk and ask myself if I was able to answer the question or not. I felt I could, but to what extent is what I asked myself. And did it interest me? I understood that any reflective process is prone to change and the more I thought about it, the more I realized that the process is not perfect and can always be better. Once I realized that I became like mother goose and her baby geese.

Qualitative research can be risky. That I did not know.

I had an interest and I built my plan based on that. My plan was very large and vague which made it easy for me to make it smaller and more focused vs. being more specific with the research questions in the beginning and not knowing where to turn as I proceeded with my research project. If you dare to be honest as a researcher you will definitely see change.

Change in qualitative research is expected and part of the process.

When I was doing my qualitative research class, every week my instructor would ask us if our research questions or theoretical framework had undergone change. She wanted that, and in retrospect, I realize that it was a perfectly normal stage of qualitative research. I guess the only wrong time perhaps to change a research question is after you have written it up and even then, continuous reflection gives you the opportunity to do further research and publication.

Having a team or a lifeline, in this case my advisor and committee, was priceless. I remember an email to my advisor where I had said:

It was hard for me to let go of my research questions because weirdly I felt like I had failed. But, as I struggled through and spent some time reading and reflecting on my research questions, I felt more at peace. With that in mind, I am assured that this is normal and I am being hard on myself.

The research questions I have now were refined and expanded through reflection, iterative and dialogic processes. My new research questions are what I have the most data on, what interests me the most, what I know I can answer and what I think is most impactful now for my future plans and present work.

Data Collection

Every day, I dressed up and headed out to be with my new community. Talking about clothes - it was a good thing I had the foresight to get some clothing items sewed because the village was more traditional than I thought and they still disapproved of women wearing trousers. I understood the cultural custom and was not about to break that. No, no...not on my watch. Not during my research.

Mohammed the biker took me to my field assistant's shop, also named Mohammed. My field assistant Mohammed was the village bead maker, a trade that he also had to embrace since he was unemployed. He was a graduate and one of the two youths in the community who had gone to a tertiary institution. I told him what I expected from him and gave him a summary of my research plans and IRB requirements. Mohammed was my translator, guide and accomplice.

Formal and semi-formal interviews

While in the Mambilla I conducted 12 formal interviews and 15 semi-formal interviews. Formal interviews are structured, systematic and controlled as they follow prescribed rules in gathering and assessing the data. Informal interviews are less structured and often follow the intuition of the researcher.

Before we proceeded, the interviewees gave oral consent. All these interviews took place in the month of June 2017. Three interview guides were developed (see appendix); One for the

community members, one for the resource users and one for organizations/groups that worked in the community.

Most of my interviews were conducted in my respondent's homes. Others were conducted as my respondents cut down a tree, plaited a young girl's hair or weaved a basket. It was imperative for me to be one with the community and not interrupt the flow of daily activities. The one constant was the audio recorder that I carried.

Interviews lasted 20 minutes to 3 hours. There was a lot of pre- and post-conversation time that I used to serve as an icebreaker and observational time. Responses were tape recorded in Hausa/Fulfude, and later translated and transcribed into English at the end of the study period. By interviewing farmers directly in Hausa/Fulfude instead of translating each question and answer to and from English during the interview, I was able to build a more congruent narrative from the respondents. That way I did not have to interrupt the flow of conversation with translation.

Participant observation

Being in the US for a year and then living in this rural community heightened my sense of observation because they were extremely different. I observed as much behavior as possible including actions, conversations, and the people and persons observed in their usual, everyday contexts. I documented these observations as field notes as often as I could. Participant observation combines observing and informal interviewing. It is an exercise that encourages you to seek answers in unconventional, unplanned and informal settings (Quinn, 2002).

Tales by Moonlight

I ended all my interviews with a story and an activity. Tales by moonlight is a popular African custom that is common, especially in rural areas. I designed an activity with the aim of engaging the interviewee in creatively thinking about how they will handle their natural resources. After going through the interview questions, I would say something like, “Today we are all going to tell the story. I will start, and you will finish. It can be anything you want but think before you answer and pretend it's really happening”. Based on their responses I further probed the interviewee by throwing out variables and what if scenarios. (See chapter 11- Tales by Moonlight)

Visiting the Temple: Archival Documents

I was in the Mambilla for 3 weeks and had to leave earlier than I wanted due to political instability, after which I went to my home state of Kaduna. While there, my brother suggested that I go to the National Archives. My abrupt departure from the community made it impossible for me to do follow up interviews and the archival documents helped me with triangulation. The archival research filled this role. Denzin (1989) categories 4 triangulation strategies, including the use of archival sources alongside interview data as an example of methodological triangulation. The use of different research strategies is a powerful form of triangulation because, the flaws of one method are often the strength of another; and by combining methods, observers can achieve the best of each while overcoming their unique deficiencies (Denzin, 1989).”

Kaduna State was the capital of the Northern region during the colonial era and the Archives there are full of documents and files from around the country.

Randall Jimmerson (2008), in his paper on The Importance of Archives to Society, describes his experience in such a beautiful way that I share with you below:

In my dream I am entering a temple, its ornate façade and tall spires gives me hope. I will find enlightenment here. I push open the massive doors and enter. The door clangs shut behind me. I am in a dimly lit room with high windows that prevents the sunlight from reaching me. Despite the heat outside it is cool here. A security guard approaches. The temple has become a prison.

The guard tells me to surrender my pens and put my briefcase in a locker. I sit at a table, filling out forms to prove my identity. Guards and security cameras watch me constantly to prevent escape or theft. I realize that I am hungry. A young woman hands me a menu. The prison is now a restaurant.

“What do you want?” the waitress asks. The menu she hands me does not list food items, only the names of companies that sell packaged foods. “May I suggest something local?” She pulls down a menu of Brazilian specialties.

Soon a cart arrives with several boxes. My food must be inside. I open one box at a time—correspondences, reports and financial ledgers. In the last box are recipes. Pasteis fritos, sopa de palmito, feijoada. These recipes are not food, only the promise of food.

The waitress recommends feijoada. She brings me a box filled with black beans, carne seca, pork, sweet sausage, onions, garlic, and other primary sources of nutrition. After all this time, I still have to cook my own meal. (Jimmerson, R. C. 2008).

Every day for 2 weeks I felt exactly like Jimmerson described. Apart from age and place, my experience as an archivist was remarkably similar to his, from my arrival at the temple to the security, the carts and recipes and the recommendations from the waitress.

The temple: Based in the commercial part of town, the archive building is wedged between banks and insurance companies. Those structures are large and new, shiny and modern, but the archive was dusty, old and dilapidated, as its name denoted. Broken windows, leaky pipes and overgrown grass instead of flowers welcomed me when I came into the compound.

The documents although precious showed obvious evidence of wear and age, which was evident in the crumbling and over taped pages.

The prison: An old guard sat in the foyer. “Everything here is old,” I thought to myself. The dust clad wall that was once white was now reddish brown as a result of the harmattan dust and air pollution. The telltale signs of leaky roofs confirmed to me that the rainy season had its own woes.

My bag was collected from me, my credentials examined and photocopied. Before letting me go, I was given a strict warning not to steal any file. Throughout my stay, I was kept under close guard and surveillance.

The restaurant: Large books were placed before me as I read through the files’ names, noting the ones that I wanted. 15 files were placed before me at a time and I read through them taking notes of some and making copies of others. I constantly had to ask myself “Why is this important? Is it instrumental to my research?” I read somewhere, “Each user of oral history, archival documents and artifact has to decide, what use to make of each corpus of tradition.”

These archival documents were in the form of letters, reports, correspondences, conference papers, memorandums, etc. that I photocopied or took notes on. Later on, I typed and coded them with the rest of my data. The files I accessed were for Yola province which at the time covered the Mambilla Region. The dates of these files ranged from 1930 to 1970.

Archival materials provide longitudinal data and enrich theories with a temporal dimension which can allow for an added level of analysis. It yields new insights into issues such as antecedent conditions, the role of history, relationship dynamics, the evolution of network structure and process, and relationship 'life cycles'. By taking a step back in time, archival documents can highlight what may be taken for granted and go unquestioned in a particular time period. Archival documents help generate new theories and improves the validity and reliability of findings. Archival documents are detailed, less obtrusive and less contingent (Welch, 2000).

In this research I use the archival research mainly as a way of complementing, strengthening and challenging data gained from the interviews and observation.

DATA COLLECTION METHOD	HOW DID I USE IT	WHERE DID I USE THEM	RESEARCH QUESTION ADDRESSED
Formal and semi-formal interviews	These were interviews that I conducted where I asked questions and received feedback. I tape recorded the interviews, translated, transcribed and coded the interviews.	All the stories in chapter 4-10 are based on stories I was told by respondents in response to questions I asked.	What are the perceptions and experiences of the various resource users about community natural resource management? What challenges do different types of users face in trying to earn livelihoods from the forest?
Participant observation	These were daily and constant occurrences. I wrote them down as field notes and referred to them typing out only the sections that were relevant to me.	All the stories in chapter 4-10 are based on what I saw when I was with respondents conducting interviews or just being in the community.	What are the conflicts among different resource users and what challenges do they face to be able to work together in a way that benefits themselves and protects the forest?
Archival documents	These were in the form of letters, reports, correspondences, conference papers, etc. that I photocopied, typed and coded. The files I accessed were for Yola province which at the time covered the Mambilla Region. The file years ranged from 1920-1970.	I used archival documents as block quotes throughout the research to enrich my existing data with a temporal dimension. This helped strengthen and complement my existing data.	
Tales by Moonlight	This was a storytelling activity that I conducted with my respondents after the interview. I started a story and my respondents completed it. At the end of the story I probed for details and It was recorded, transcribed and coded.	Chapter 11 is based on the data from this exercise.	What do they understand about sustainable management of natural resources?

Table 2. Summary of Data Collection Methods

Making Sense of it all (Data Analysis)

What I did not know about CAP ethnography is that it would take all of me. Every living, sleeping and daydreaming moment. In my dreams I see conflict; people fighting for their land. I see their faces and can hear their voices in my head. It lives in me and consumes me. I am afraid and sad.

I now understand better the words of Ellis & Bochner (2000) when they state that my vulnerability, personal feelings and emotions are all ways to illustrate my experiences as well as construct and share knowledge. With that in mind I took those feelings and used them to help me understand. Reflexivity again became my lifeline (Ellis 2004; Altheide and Johnson 1994).

In the field, I would review my data reflecting over interviews and observation. When I finally got back to East Lansing and started settling into work on my data I realized that I had quite a bit of data from interviews, observation, memos and archival documents.

Managing this on my own would have been a herculean task, and as such, I used the qualitative data management and analysis tool NVivo to organize, manage and navigate through my data. I selected NVivo over the other packages because of its many effective features, including the capacity to store large volumes of data in the form of text, audio and even pictures. NVivo is also user-friendly and easy to navigate. I imported entire transcribed documents and coded them into the program. Coding stripes were generated and made it possible for me to quickly see which codes had been used elsewhere. The software help to locate and retrieve information very quickly. Additionally, I was able to read transcripts and write notes and memos. Commentators have

expressed concern that the use of the software will take away the human component of qualitative work (Barry, 1998; Hinchliffe, Crang, Reimer & Hudson, 1997; Welsh, 2017). I realized that was true and I kept the memory of the Mambilla alive by reading and re-reading each transcript and listening to the recorded interviews.

There are many different approaches to qualitative data analysis and these have been widely debated in literature. For the purpose of this research, I used a combination of inductive, interpretive and reflexive approaches to analyzing the data (Miles & Huberman, 1994; Mason, 1996; Thomas, 2003).

- Inductive: This approach is concerned with the generation of new knowledge emerging from the data. This approach condenses raw data into a summary format to establish clear links between the research objective and the summary.
- Interpretive: This is the position that our knowledge of reality assumes that social reality is not singular or objective, but is rather shaped by human experiences and social contexts, and is therefore best studied within its socio-historic context by reconciling the subjective interpretations of its various participants.
- Reflexive: This involves interpretation of interpretation. Reflexivity is the process of reflecting on yourself by acknowledging the assumptions and preconceptions you as the researcher has, to provide more effective and impartial analysis.

By using an inductive, bottom-up approach, I searched my data (observational, interview and archival documents) for themes and patterns. I then went back to see what topics were emphasized? Were there any similarities or difference? What did they talk about a lot? I realized

that there was a lot of commonality among the resource users responses, so I coded all references to various topics that emerged from the data according to each resource user (LeCompte, M. D., & Schensul, 1999). For research question 1 and 2 I did not do much analysis but instead presented them as stories. See Table 5, Abbreviated code book with examples, in the appendix.

Research question 3 followed the same process. However, after identifying themes, I refined and modified the categories looking for patterns that are themselves linked or related to one another, which I then coded and theorized.

Many scholars recommend using multiple coders to carry out a reliable analysis. However, due to the complexity of the task, the large dataset, my timing and lack of budget to compensate for another researcher's time, I did not have the codes crosschecked by another researcher. The fact that I was using a combination of approaches to analyzing the data also made it easier for me to code alone (Lombard, Snyder-Duch, & Bracken, 2002; Potter & Levine-Donnerstein, 1999).

Responses to the questions that I asked became rich sources of data. The questions were useful triggers as respondents discussed their understanding and definition of terms, often explaining their responses with personal stories or illustrations from their lives and experience. In making sense of the codes, I presented the data through the lens of the various resource users and told their stories. My stories are presentations of details, and what you think and feel are entirely up to you.

Telling Stories

Yes, I am aware that creative nonfiction as research sounds scandalous; facile and simplistic. It's hard for academics to wrap their head around creative writing as a research outcome. Creativity is often associated with the arts, daydreams and imagination. No worries. I understand.

Let me explain, and maybe you will understand:

I write stories because that is what I was told and that is what I saw. My story is the fulfillment of a trust given to me. To share a real-life true story. The reality of lived experience is very different and it is stories that can illuminate them. Storytelling forces us to think of people as people, not as objects or subjects that confirm to bloodless logic or statistics.

I write stories because it is my way of understanding complex scenarios. Some people draw, some people ask a lot of questions, some read tons of books and do a lot of research. Me, I write.

I write stories because I know I don't have all the answers and I don't want to limit your understanding with my limited knowledge alone. Stories with all its nuances and complexity show the facts and can educate people through detail.

I write stories because as a researcher, analysis for me takes place in the process of writing.

Richardson (2000) says:

I consider writing as a method of inquiry. A way of finding out about yourself and your topic. Although we usually think about writing as a mode of 'telling' about the social

world, writing is not just a mopping up activity at the end of a research project. Writing is also a way of “knowing’ – a method of discovery and analysis. By writing and in different ways, we discover new aspects of our topic and our relationship to it. Form and content are inseparable (Richardson, 2000).

I write stories because nothing is new under the sun but I believe that a different mode of writing is a practical and powerful way to expand interpretive skills, raise consciousness, and bring a fresh perspective to one's research. Richardson (2000) says there is no such thing as "getting it right," only "getting it differently contoured and nuanced."

I write stories because it's much more interesting to me.

I write stories because creative nonfiction is a genre is deeply committed to the truth. And, I want you, my readers, to be witness to that truth.

Creative nonfiction tells a story using facts but uses many of the techniques of fiction for its compelling qualities and emotional vibrancy. Creative nonfiction doesn't just report facts, it delivers facts in ways that moves the reader towards a deeper understanding of a topic. Creative nonfiction requires the skills of the storyteller and research ability of the conscientious reporter. Creative nonfiction writers must not only understand the facts and report them using quotes they must also see beyond them to discover their underlying meaning, and they must dramatize that meaning in an interesting, evocative, informative way—just as a good teacher does (Cheney, 2001).

I write stories because I want my readers to feel as well as think of the characters in my accounts. I want the emotionality and sensitivity of the text to cause readers to pause, reflect and feel (Lockford, 2002). Scholarly writing is often devoid of emotions but personal narratives touch, hurt, heal and inform (Darling et al., 2014).

And that is the crux of the issue; the concept of the '*really real*' and the desires for stories based on the truth and urgency of witnessing. I want to tell stories about real people in real places.

But before I exit this section I give a shout out to two great trailblazers that have personally helped me to be brave, empowered and inspired. Thank you, Laurel Richardson and Terry Williams.

No, it's not just a story

Validity and Reliability

Creative analytical ethnography demands spontaneity and an imaginative approach, while remaining true to the validity and integrity of the information it contains (Gutkind, 1997). As such it is also only as rigorous as the rigor of the research and the data on which the writing is based. In her paper "*Rigor or Rigor Mortis*," Sandelowski (1993) reminds us that rigor is less about adherence to the letter of rules and procedures than it is about fidelity to the spirit of qualitative work. She argues that because research is both a creative and destructive process there is a tendency to kill the spirit of qualitative work by the uncritical application of rules (Sandelowski, 1993).

Other researchers add that methods and procedures do not guarantee validity and the usefulness of validity and reliability is debatable. (Miles and Huberman, 1994; Lincoln and Guba, 1985). Despite all the disputes on validity I have nevertheless strived to ensure that my research and analysis were carried out in a thorough (rigorous) and transparent (trustworthy) manner.

However, because of the uniqueness and complexity of phenomena and the individualistic and personalistic nature of ethnographic research, LeCompte (1982) suggests that researchers can enhance the external reliability of their data by recognizing and handling five major problems. These are: positionality, choice of respondents, social conditions and situations, analytic constructs and premises (culture, behavior) and methods of data collection and analysis (LeCompte & Goetz, 1982). I utilize and discuss all five of these at length in different parts of my thesis.

In regards to internal reliability there are five strategies that LeCompte suggest that researchers use to reduce threat: low-inference descriptors (i.e. preservation of raw, unfiltered data), multiple researchers, participant researchers, peer examination and mechanically recorded data (LeCompte & Goetz, 1982). In addition, Le Compte and Schensul suggests using member checks, i.e. checking with multiple respondents where possible for confirmation of certain information. They also suggests using a checklist as a reminder to actively check for validity threats and apply steps to guard against them (LeCompte, M. D., & Schensul, 1999).

In my research I was able to take the following steps to guard against validity checks:

1. I collected raw, unfiltered data;
2. I have copies of audio recordings, transcribed interviews and copies of archival documents supporting data collected on site;
3. I adapted a checklist (see table 3) to rule out validity threats and to increase the credibility of my conclusions.

Due to resource constraints it was not possible to have multiple researchers or conduct participant research.

Crystallization

In traditional qualitative research, we emphasize triangulation. But in postmodernist mixed-genre texts, we crystallize. Both are important, and both are covered in my research. We recognize that there are far more than three sides by which to approach the world (Richardson, 2000).

Crystals are prisms that reflect externalities and refract within themselves, creating different colors, patterns, and arrays, casting off in different directions. Crystals grow, change, and alter but are not amorphous. In postmodernist research, we have moved from plane geometry to light theory, where light can be both waves and particles. What we see depends upon our angle.

Researchers claim that their findings are valid when there is a notion of reality as external, consensual, corroboratory and repeatable. However, we forget that in the interpretive/naturalist paradigm, the reality is assumed to be multiple and constructed rather than singular and tangible. As such, in addition to the above points I look again and empowered by the work of Richardson (2000), I ask:

1. How has this research substantively contributed to our understanding of community interaction in natural resource management?
2. Do the creative analytical practices invite interpretive responses? Is it artistically shaped and interesting?

3. Does the research affect readers emotionally and intellectually? Does it make readers to ask questions or move you to action?
4. Is there adequate self-awareness and self-exposure for you (my readers) to make judgement about the point of view?

These questions are not for me to answer. They are for you, the reader, to consider as you read.

1. WHAT DO I NEED TO KNOW?	2. WHY DO I NEED TO KNOW THIS	3. WHAT KIND OF DATA ANSWERED THE QUESTION	4. ANALYSIS PLAN	5. VALIDITY THREAT	6. STRATEGIES FOR DEALING WITH VALIDITY THREATS
What are the perceptions and experiences of the various resource users about community natural resource management?	There has been little documentation on the issue especially in the Northern region of Nigeria.	In-depth Interview	Transcribe and translate (where necessary) audio recording	---Dominance of certain individuals in the community may influence less vocal or dominant individuals	---Participant observation
What challenges do different types of users face in trying to earn livelihoods from the forest?	To understand what are the factors that can facilitate and sustain the successful management of natural resources.	Interview	Coding with NVivo		---I conducted respondent validations or member checks which is a system of soliciting feedback about your data and conclusions from the people am studying.
What are the conflicts among different resource users and what challenges do they face to be able to work together in a way that benefits themselves and protects the forest?	To emphasize the dependence on natural resources.	Semi-structured interview	Re-reading data	---Researchers bias	---Use of open-ended scripts that minimizes indication of researcher bias
What do they understand about sustainable management of natural resources?	To exemplify the challenges of conservation.	Participant observation	Recoding data	---Potential for lack of variability in responses received due to positionality of a researcher	---Triangulation between different data (interviews, observation and archival research)
	To elucidate the effects of how the typical conservation model approach separates people from the land.	Tales by Moonlight Activity		---Potential for lack of sincerity in responses due to urge for respondents to give desirable response due to personal bias	
	To demonstrate the magnitude of the conflict exacerbated by natural resource scarcity				

Table 3. Checklist for Validity

FINDINGS

SUMMARY OF RESULTS

Mountains, rivers, forest, gold, timber, cattle, crops

That is what you see. A gallery that exists in the natural environment and landscape.

But, I see a place familiar and intimate. I see a means to live, to survive, to provide for my family.

You say. No. Get off this land. Can't you see the fence?

This area is of high biological importance. We need to conserve it.....blah, blah, blah.

Conservation – what's that?

Sustainability - who's that?

My land, my home is not a lab or place of research that you can just ask me to stay off from.

INFACT, your attempts at including us have only caused more division because we are a community, but we are not one.

YOU SEE It's complicated enough dealing with all the rules and regulations to the land based on my gender, my social class in society, religion, age, cultural laws, land rights, institutions and all that plus colonial notions and preferences still exist.....Conservation just makes things worse.

By the way don't you see its jungle justice out here. Even if I do stay off the land are you sure you can convince us all? Someone, somewhere will use the land.

You see:

I live here and I need to cut the trees for timber. Unlike you, I did not go to school and I need to feed my family.

I live here and I know no other work but to farm the land. My ancestors have all done it why shouldn't I?

I need to mine the land. I need the cash and that's my job.

I want my cattle to graze here. The cattle are my inheritance you see

I live here and my family has used the roots and leaves on the land to cure and heal.

I hunt for meat, I harvest honey. The land is my store, my pharmacy, my gas and electric.

Do you know that blood is split for this land? And let me tell you, I will kill for the land and die for this land

THE FARMER

The woman in front of me walked slowly. From the corner of my eye I saw a big fat African rat scutter across the road into a thick bush. No doubt from wreaking havoc on someone's farm. The brown lines on the back of the rat were beautiful. It looked like an expensive piece of fur.

The morning was damp. A heavy rain cloud hung in the distance. The Mambilla air was cooler than usual and goosebumps appeared on my arm. Mama appeared oblivious to the cold. I wondered if her tough, wrinkled skin could protect her from the cold.

We were on the way to Mama's house when we met her on the road. She was returning from greeting a bereaved family, and we slowed our pace and walked behind her. Arriving at her home, she welcomed us and asked us to sit on a thick log of wood in the corner. Her eyes were sad and the expression on her face was like a child about to be scolded.

Alarmed by her behavior and eager to relax her I asked her where her farm was. When she told me, I asked her if she could show me. She smiled and walked back out of her house. I followed.

We walked silently and she stared at the ground, as if looking for something. Occasionally, she would stop and look intently into the horizon. I too stopped to take another look around me. The morning grass glistened under the sun as did the silk head of corn sprouting from the stalk. I saw a disoriented chicken stuck in artificial hair extensions and a discarded mango tendril pushing itself

from the shell. Mama and I stopped and looked at the women on the farm as they poked the soil with their heels and threw down the seeds. Their movement was rhythmic, like a dance.

There is nothing better than planting a seed and watching it grow. All my life I have always eaten directly from the farm. The sight and sound of chickens and goats bleating and pecking the ground is a comfortable delight. The odor of manure reminds me of the leafy greens and beans I will enjoy in a few months, and the possibility of sharing that meal with others delights me.

At her farm, Mama seemed happy and content.

“When other visitors come, they never want to see my farm,” she said with resignation. “Anytime they are trying something new they always skip my farm. Is it because I am old, she asked”?

I did not know the answer. I ask mama how long she had been farming.

“All my life,” she replied.

Rural women, more than their male counterparts, take the lead in agricultural activities, making up to 60-80 percent of the agricultural labor force in Nigeria. It is ironic that their contributions to agriculture and rural development are seldom noticed. Furthermore, they have either no or minimal part in the decision-making process regarding agricultural development. Gender

inequality is therefore dominant in the sector, and this constitutes a bottleneck to development (Ogunlela & Mukhtar, 2009).

“Was farming in Ngel Yaki better than here in Yelwa?” I asked.

“Yes, it was. The soil in Ngel Yaki is rich and supported many different types of crops,” she replied.

Another female farmer I interviewed shared something similar:

There were lots of farm and forest products more than Yelwa. We use to fish there and there were herbs. We were not hungry.

It is evident though that small-scale illegal farming still exists in and around the reserve. Hazel Chapman, who has done extensive work in the Mambilla, wrote after surveying the forest reserves in 2002:

We found physical damage to the forest; slash and burn agriculture was infringing on the lower slopes of the reserve, and there were approximately 1.5 km² of abandoned farms within the reserve boundary (Chapman, 2000).

Smallholder farmers are one of the more disadvantaged, poor and vulnerable groups in Nigeria (Apata, Apata, Igbalajobi, & Awoniyi, 2010). In Nigeria, rural poverty is relatively high. A national poverty survey indicates that the high tropic areas have moderate poverty while the northern regions have poverty levels that are as high as 60% (Odusola, 1997; Okunmadewa et al., 2005; NBS, 2009).

Most of these farmers operate at the subsistence, smallholder level in an extensive agricultural system; hence in their hands lies the country's food security and agricultural development. (Ogunlela & Mukhtar, 2009). Past studies have also identified that most of the poorest households are found working in agriculture as the primary source of income and food. (Apata et al., 2010; Ogunlela & Mukhtar, 2009). However, these farmers play a crucial role in food security with an average farm size ranges between 0.7 to 2.2 hectares.

The colonialist were aware of the challenges concerned with the introduction of agriculture.

They wrote:

The introduction of Forestry to Nigeria deprives the peasant of a certain part of the lands which would under original conditions have been available to him for agriculture. He cannot fully occupy his land, as he interprets occupation. Once the available lands of his community are fully occupied under a bush fallow system, there inevitably arises the complaint that "there is not more land", accompanied by demands for excisions for the Forest Reserves for farming. To yield to such demands would be fatal to the practice of sustained yield forestry and it is obvious that even the abandonment of all Forest Reserves would merely delay a crisis which must be sooner or later be faced. Such abandonment could not delay it for long, for the Forest Reserves are at present no more than 7% of the country. (The allocation of land for Rural Use together With a Consideration of Forestry Problems in Relation to Peasant Economy - MAHF 313 (1948) - Nigerian Archives)

Agriculture is Nigeria's most significant employer with 70% of Nigerians involved in one form of agriculture or another, working mainly in small holdings with basic tools and equipment. Nigeria's soil and climate allow for a wide variety of food crops including millet, sorghum and maize and other cash crops like rubber, cocoa, coffee, and cotton. Agriculture provides a third of the nation's gross domestic product. However, over the years there has been a decline in production and exportation an increase in importation. One of the primary culprits of this decline has been the

negative effects of climate change on crop production in Sub-Saharan Africa (NISER 2007). Higher temperatures, more prolonged droughts, and erratic rains are conditions that the majority of small-scale farmers in Nigeria can do nothing about. It is predicted that Nigeria will lose thousands of hectares of land due to drought and desertification and the scramble for limited fertile soils will cause growing communal conflict (Commission for Sustainable Development, 2008). The nation's growing population also demands that more mouths are fed.

In regards to agriculture in my study area, archival documents said this:

Northern Nigeria is primarily an agricultural and pastoral land. Agriculture and cattle form a large part of the national wealth, and on the well-being of the two, the prosperity of the country largely rests. Originally most of Northern Nigeria's land surface was covered with forest of some form or other but with the continuous increase of population, much accelerated in recent years, more and more of the natural forest has been cleared and converted to farmland or farm fallow, with the result that the land surface of Northern Nigeria is now a complex mosaic of farm, farm fallow and natural forest. (Factors affecting the Choice of Forest Policy - (Nigerian Archives)

Pertaining the people in the Mambilla specifically it said:

The Mambilla tribe are generally agreed to be good farmers in that their methods are not so destructive of surface soil as that practiced in Bamenda. They do not, as yet, appreciate the use of manure. They depend on yam for green manure and firewood..... I have therefore to suggest that the following points need consideration. (1) There is already established a large and productive livestock industry. (2) Mambilla is in a condition of over increasing congestion with regards to land use.

In the Mambilla there are other issues farmers face. Increasing congestion in the last decade has witnessed increasing competition over land as a natural resource, resulting in bloody conflict between the two principal land use actors; farmers and herdsman. Rapid desertification of pastureland, overgrazing and low rainfall have made it difficult for herdsman to remain in their

Northern base. Seeking alternatives, herdsmen journey south looking for fertile pasture and water for their cattle. However, that search leads to farms in Nigeria's North Central, a region that is called the food basket of the nation. As expected the two groups clash and there is bloodshed. As a result, the farmers that are less economically buoyant are unable to farm as much as they used to for fear of attack, and their manpower has reduced either because of the death of able-bodied farmers or because some farmers have to stand guard while others farm. There are also incidences where harvested crops are burnt or acid is poured on them when still on the farm. This contributes to the low and inconsistent supply of food resulting in upward price surges, which is a significant threat to food security in developing countries.

The conflict situation had caused food shortages in the affected regions. I am from the north-central part of Nigeria, and my people have been crippled as a result of this conflict, and the results are apparent. Growing up we were always generously given abundant amounts of food to eat when we went visiting. Upon departure, we would be given even more farm produce to take home with us. Today there is hunger and the people pray that you bring something for them when you go visiting and the baskets full of fresh farm produce are non-existent.

When receiving the Nobel Peace Prize in 1970, Dr. Norman Borlaug said, "Food is the moral right of all who are born into this world." Borlaug spent his life trying to solve problems that affected food security. But what if those problems are within? What do you do when the struggle is not about resistant varieties or hybrid seeds, but other resource users and their activities on the land?

Food is essential but does that make other resource products less critical? Similarly, archival documents state:

Food must, for obvious reasons, in the event of a shortage, come before wood. Therefore, it must be recognized in any Forest Policy, that where land is required for the essential production of food-stuffs, agricultural production must have priority over forestry production. BUT, in this connection, it is to be stressed that it is essential production of subsistence foodstuffs which must determine the priority of land use. If alternative land is available for food production, then as a matter of general principle, land under forest of value should never be sacrificed to conversion to agriculture.

A community member said in response to the conservation efforts at the reserve:

If they want the work to continue/improve, and if they will agree they should return the land to the owners, because people were farming there and have gotten a lot of farm products but now they have come and stopped them from farming in that place, so it is good to return the land for them to cultivate it.

But, smallholder farmers do not only struggle with other humans. One day I noticed a colobus monkey sitting on an anthill looking at a field of corn. I was told that he was literally waiting for the corn cobs to be ripe. Immediately it was ripe the monkeys literally ate 70% of the corn. It was like the farmers were offering a public service to the monkeys.

With all the pressures that smallholder farmers face how can we create a situation that works well for them and other resource users?

That Night

The night was hot and Simi could not sleep. The tiny windows were open wide but there was no breeze. Simi heard her children stir restlessly in their sleep. The silence of the night was

interrupted by the loud slaps to their clammy skin as they tried to kill one incessant mosquito after another. She heard a sound outside; a rat maybe she thought dismissingly.

Vou, her five-month-old baby stirred next to her and started to cry. She reached for her, cradled her lovingly in her arms and brought out her breast to feed her. Simi turned over to lay her in a more comfortable position and glanced tenderly at her five children. Her husband's death a month ago on the farm had been devastating on them all. Many nights she had wiped away tears from her children's faces as they cried themselves to sleep calling for their father. He'd gotten into a quarrel with a pastoralist who confronted her husband after accusing him of extending his farm into an area where his cattle usually grazed. Simi's region had lots of pasturelands that the pastoralist and their cattle enjoyed. The problem was the region was dubbed the food basket of the nation because of its vast agricultural produce. Farms were rapidly expanding as was the number of cattle and cohabitation like before was getting harder. At the end, her husband had been hit in the head with a hoe and had bleed to death.

There it was again. It sounded like footsteps. Simi stood up and opened the old zinc door to check. The door creaked loudly in protest as she slowly opened and cautiously peeped outside. Right outside her door her eyes met with Modibbo, one of the local Fulani Pastoralist that usually grazed his cattle close to her family farm.

“Modibbo, why so late.....lafiya?” she asked in puzzled amazement. Simi also fried bean cakes with millet pudding in the morning before she went to the farm. It was a staple breakfast and Modibbo

was a faithful customer who usually loitered behind engaging her in light pleasant conversation. That morning he had seemed distracted and uneasy and had scampered away barely touching his food.

It was then that Simi noticed the heavy piece of steel in his hands and the presence of several other pastoralists that she recognized. All were heavily armed. It suddenly dawned on her that this was no congenial visit and screaming loudly she hurried back into the room.

“Burn them,” she heard an authoritative voice say. She screamed louder joining the blood-curdling screams and loud, anguished cries of other villagers. The sounds of fear filled the room with the smoke from the fire that the attackers had set. The village was under attack. “Allah Akubar!!”, the pastoralist shouted as they wielded their weapons.

“Wake up, wake up!” Simi yelled at her children kicking them with her feet to rouse them from sleep. She tied Vou tightly on her back and tried to open the door. It was locked. She tried pushing the door with force but she could feel the weight of what she knew was the hefty tree stump they used to chop wood with. “Oh God, oh God!!” she yelled, wild with fear as the room caught on fire engulfing everything they owned.

“Mama, mama” her kids now awake, cried out to her, reaching for her, coughing with tears falling from their eyes a combination of fear and smoke. She noticed the window and headed towards it.

"Davou." Simi called out to her first son "Come and help me!"

One after another she helped the children out through the window. By then the angry flames were dancing dangerously close to her feet, the room was smoldering hot, and she could not breathe. The window was too high up for her to reach without help and there was nothing for her to climb onto.

"Hurry up," Davou shouted above the screams from other villagers and the loud crackling of flames.

"I can't get out," she said. "just go, take your siblings, run and hide."

"No, mama. No," she could hear the distress and tears in their voices.

"Run and hide," she repeated again with thick desperation. On her back, Vou's tiny body squirmed as she coughed. She turned and looked around the room for something, anything, but everything was in flames.

"Simi, Simi!!," A voice anxiously called out to her amidst the flames, and Modibbo appeared and quickly dragged her out through the raging inferno. Outside they fell to the ground both coughing, their bodies singed with fire. She looked at him, gratitude filling her eyes as tears and she quickly stood up and started running towards the back window calling out to her children. Abruptly, she stopped when her leg hit her daughters freshly made braids and the head rolled carelessly towards the gutter. A couple yards away she saw them, all of them, not one of them breathing, their young innocent faces practically unrecognizable from the blood gushing from the machete cuts. Dazed

she reached for her wrapper and untied it realizing too late that the thick smoke and smoldering heat had killed her baby.

THE FULANI PASTORALIST

The countryside path that I walked on was literally sinking with the weight of the cattle, some places visibly cracking beneath them. It was darkened with cow dung, and the stench that hung heavy in the air was strong and pungent. I saw the Fulani pastoralist walking beside the cattle. Occasionally, he would make a sound deep in his throat, the way they communicated with their cattle.

Growing up, seeing cattle and Fulani pastoralists was a regular occurrence for me. When the harmattan winds started blowing, we saw them more than during the rainy season. That meant the far North was too dry already and the North Central or Middle Belt was more conducive. They were easily identifiable with their bright colored clothing, long necks and fair skin. Like any shepherd, they usually had a long stick, plastic shoes or boots and very often a transistor radio. I particularly loved market days when the Fulani women would suddenly appear with huge calabashes on their heads filled with *fura da nono*.

The Fulani pastoralist has a deeply rooted culture that despite modern development has remained relatively unchanged through the years. They are ambiguous in nature and shrouded in mystery thus they are viewed with uncertainty by people who are not part of their culture. Historians claim that the Fulani first expanded eastward from the Gambia and entered Nigeria in the fourteenth century (Van Driel, A. 1999). For years the Fulani were confined to the edges of the desert, but as rainfall decreased the Fulani began to migrate through other parts of Nigeria.

Fulani herdsmen require huge areas of land which traditionally most groups obtain by a combination of territorial rights and alliances with neighbors in related communities. Pastoralists have formal and informal rules regulating the frequency of their movements and camp location (Niamir, 1991). Mobility is an effective tool for range improvement, as it provides the herdsman flexibility to modify herds, and access alternative pasture areas while waiting for the regeneration of degraded pastures (Niamir, 1991).

This mobility enables the Fulani's pastoralists to have a mental map of the specific environments at different times of the year and thus are a source of knowledge for ecological processes and the environment. Their ability to cope and sustain their livelihood has generated interest from several quarters. They are often identified with leadership, intellect and wealth. On the other hand, they are also crafty, stubborn and unwilling to share, even if they stand to gain a share of the food taken from the farm. MacDonald who had also conducted research in the Mambilla quotes a Mambilla man who said, "*The Fulani, they are not like us.....they are not good people*" (Macdonald, 2007).

As late as the 1920's the colonial administration had no reliable information on the pastoral Fulani from whom jangali (cattle tax) was being collected. The Fulani, in their capacity as cattle owners, contributed 26.4-30% of the revenue of the native administration of the province (Nigerian Archives). Despite that, many of the officers lacked the training and perseverance and were unable to report anything of value about the Fulani pastoralist. In their reports, they often mentioned that it is impossible to talk with any of the Fulani people because they are profoundly suspicious and evasive people (Nigerian Archives). I too, had the same experience, not because I lacked

patience but, because I ran out of time due to circumstances that I discuss towards the end of my thesis.

However, despite their willing contribution of tax payments, the Fulani's evasive and suspicious nature made it extremely difficult even for the colonialist to engage them. Archival reports state thus:

Up to about the mid-thirties the Forest Department endeavored to prohibit grazing but found this policy impossible to enforce, and in 1937 when the Veterinary Department named 6 Reserves in which they were hoping to carry out controlled grazing trials some surprise was caused when it was found that grazing rights had already been admitted in the order of constitution of 4 of these while illegal grazing occurred on a large scale in the remaining 2 (Grazing in Forest Reserves - Nigerian Archives).

It was written:

"that control of nomads without cattle proof enclosures is quite impracticable..... prevention of overstocking will be a real difficulty in some reserves. No paper agreement will limit stock and it is doubtful whether trespass by unauthorized cattle would be restricted or reported by those legally enjoying grazing facilities." (Grazing in Forest Reserves MAHF FOR/132 Vol. II - Nigerian Archives)

In discussing other Northern reserves, archival documents stated that, *"cattle were found to be present in large quantities"* and *"they had been in there several months and were doubtless evading their taxes successfully."* It goes on to say *"They have soured the bush and denuded it of its rather sparse dry season grass, which makes it very hard on the grass-eating antelope and buffalo"* (Reserve Game Survey - Nigerian Archives).

In the Mambilla, oral reports from the community members state that by the late 1980's most of the community members had stopped entering the Ngel Yaki Reserve except for the Fulani pastoralist. In my many treks around the community, it was a clear that bush burning of grass had

been done to encourage the regeneration of fresh grass. In his book on the Mambilla, Cheek said, “The most obvious physical threats facing the forests, both inside and outside the enclaves, are cattle grazing and fire damage reminiscent of Mt Oku” (Cheek et al., 2000). There were also bukas and small huts which served as housing for the Fulani even within the reserve. A community member said during an interview:

Yes, there was a time that they prevented people not to enter and the Fulanis should come out from the forest, but they refused to come out. They are still there grazing in the forest, and even the elders are not happy with this thing because they stopped farmers farming in the forest, but they allowed the cattle rearers to stay there because they have bribed them but all farmers have packed out. This place is important but cows are going in there and destroying what they have planted, the government should not allow them to stay there with their cattle.

Over the years the cattle increased and the presence of the Fulani pastoralists became rampant. It is important to recall that at that time the population of Nigeria was low, as was the land area under cultivation. Despite this the situation was undesirable. An aged community member said:

Back then it will be hard to find seven people as pastoralists but now we have many pastoralists to the extent that you will find 1 person with 100 cattle so now, so it (conflict) has really increased.

As the population of the pastoralists and population of the cattle increased, they became objects of fear. The stick they would shepherd their cattle with became an AK-47 and they were identified with death and destruction. The Fulani women still came to the market, but when they were absent, we knew something was amiss because the women and children were usually asked to stay away from potential conflict. A Fulani pastoralist, responding to this issue in a newspaper interview, explained:

That is one issue I would like to correct. If you see a Fulani man handling AK-47, that is because cattle rustling has become so much that one wonders if there is security in the country. No peace-loving Fulani man would be carrying AK-47 and moving about. (Vanguard, 2016)

Another pastoralist interviewed said:

Our herd is our life because to every nomad life is worthless without his cattle. What do you expect from us when our source of existence is threatened? The encroachment of grazing fields and routes by farmers is a call to war.....Whenever we turn we find the land reserved for our cattle to feast, taken over by farmers....It becomes difficult for our herd to move and graze without veering into crop fields. Once this happens the farmers confront us and we have no option but to fight back (irinnews, 2009).

Obviously, other community members do not appreciate the Fulani's love and affinity for their cattle, and a community member said:

What I want for the work to go further forward, they should remove the cattle, only cattle. If the remove cattle everything will go forward and be better.

Among all the negative interactions of natural resource users on the Mambilla, the situation with the Fulani herdsmen is the worst. Conflict between pastoralist and the farmer goes back to early written records and is mythically symbolized in many cultures and traditions (Chatwin, B. 1989). In the Bible, Cain killed his brother Abel over a sacrifice and the Chinese emperor built the Great Wall of China to keep out the marauding hordes. We also hear historical accounts of the collapse of Mayan civilization due to conflict brought about by deforestation, drought and famine and more recently events in Darfur are examples of nomad and farmer conflict.

Today in Nigeria, history repeats itself. Rapid desertification of pastureland, overgrazing and low rainfall has made it difficult for pastoralist and seeking alternatives their journey led them to

Nigeria's North Central; a region that is called the food basket of the nation because of agricultural output. Acknowledging this paradise and the potential for widespread conflict archival report:

The Mambilla District with its huge stretches of grassland, absence of tsetse, fairly heavy rainfall and short dry season provides some of the finest grazing in the country. The Fulani have taken full advantage of this and of our belief that the pagan inhabitants of the district were conquered by and became subjects of the Lamido Adama, founder of Adamawa. Today they try to ride roughshod over the rights of these people asserting that they own the land and the pagans are only there on sufferance. Much damage is done to farms and feeling between Fulani and pagan in some areas is very bitter (Rules for Control of Grazing – 1946 Nigerian Archives).

As a means of preempting the situation the document goes on to suggest:

Unless some friendly modus vivendi can be found it will be necessary to control grazing between planting and harvesting times (Rules for Control of Grazing – 1946 Nigerian Archives).

This did not work.

I am from the north-central part of Nigeria, and have seen the blood on the land, heard the cries and know the pain of having your crop destroyed by cattle. Thousands have lost their lives, and in 2014 the Global Terrorism Index ranked the Fulani as the world's fourth deadliest militant group (Global Terrorism Index, BBC). The conflict has cost Nigeria more than \$14b between 2012-2015 (Mercy Corps, 2015).

There is a running joke that if a Fulani's wife and cow are in labor at the same time, the Fulani man would run and attend to the cow and leave his wife. To the Fulani pastoralist, cattle are much more important than anything. They are a measure of wealth, a unit of account, a treasure, a

property and yet not a property (Adebayo, 1991). The Fulani adopt a traditional system of education called the pulaaku, which is essentially a style of education which is meant to inculcate in both male and female children the value and virtues of nomadic life (Adebayo, 1991).

Adebayo (1991) in his paper, "Of man and cattle," which is one of the most objective papers on Fulani that I have read, quotes C. E. Hopen, who explains this early indoctrination. He describes it thus:

Pulaaku exposes the young boys and girls to this cattle-centered lifestyle from childhood. For young boys, in particular, an interest in cattle and the desire to own them begin early; such interest pervades the enculturation process which begins in early childhood. Before children can walk, they are brought into contact with calves of the camp, for both may share the shade of a common tree or crude shelter during the long hours of sunshine. By the time a boy is about five years of age his fantasies show a basic understanding of the significance of cattle in his society.

Every conversation about Fulani begins and ends with cattle. As such it was not surprising to me when I found this account of the origin of the Fulani people and the cattle that they so obviously dearly love.

Borors and his sister Mairama, children of Adam one day reach the big River near Malia. They met Dujal⁴ on the riverbed. Dujal is an evil spirit shaped like a man except that his feet are made of iron.

He asked them where they came from and they replied that they came from far away to the east and were looking for a home. He said to them I will not let you live here, but I will give you something which will bring you prosperity. So, he sent them into the bush to make a fire, and he went to the river near Malia. Out of the water, he drove a bull and a cow and gave them to Borors and Mairama. He said, "take care of them, and they will increase and multiply, and you will also increase and multiply as your cattle." Your children will increase and will form 3 big tribes. These three tribes are the Bororo Jafunawa and the Hausa Fulani. Then Dujal said, "Go and settle where you wish."

⁴ Evil spirit

After a time he heard that the world was becoming full of people and he was angry because he had an agreement with God (Annalijo) that the world should be ruled by his evil spirit.

When he saw Borors and Mairama he did not object to their coming because he said, the world is large, and there is room for them. But, hearing that there were other people besides them he was determined to go see them for himself and to disturb them. He wandered north, south, east, and west but found nobody, so he set out for where Borors and Mairama had gone. Then Annalijo saw that Dujal was going to disturb Borors, so he caught him and tied him up in a cave in the hills of Mandara.

Annalijo told him that 40 days before the end of the earth should come before he would release him to assent his kingdom and do what he liked in the world. Every twelve months he stands up in his chains in the cave and demands from Annalijo whether his time has not yet come, and men can hear the clanking of his chains. (Nigerian Archives)

My account is slightly different from the two other accounts that I came across in my research, but one thing that all these stories have in common is fire and water. Both are essential for a shepherd, drinking water for nourishment and sustenance and fire for warmth for both the shepherd and his cattle.

Archival documents in a report on the activities of the Fulani pastoralist state in regards to fire that:

Fire, properly used, is a useful weapon to man, it can be a useful tool in regulating and improving grazing potential and farm clearing. Improperly used it is purely destructive. The practice of allowing large areas of Savannah Forest to be burnt without control for hunting purposes is wasteful and destructive. The productivity of the savanna Forest is held down to its present very low level by this annual uncontrolled burning. From the point of view of the utilization of the forest it is simply a matter of plain fact that wood which is burnt annually by uncontrolled fires in the forest cannot be harvested and burnt where it is most required, under the cooking pot (The Need for the education of the public toward a better understanding of the value of the forest resources of Northern Nigeria- Nigerian Archives).

The Mambilla is cattle paradise. It is green and lush and the montane grassland has less tussock which means pasture is available for cattle and other livestock to graze on. The area has high rainfall levels and with the coolness of the mountains, the cattle barely lack water. This is a far cry from the far Northern drier part of the country where desert encroachment has reduced the rainy season to 1 or 2 months. The absence of tse tse fly makes the area even more desirable as the South is a tsetse fly infected zone which is endemic to trypanosomiasis (RIM 1992; Blench 1999).

The Fulani need places like the Mambilla. They are homeless and landless (Adebayo, 2018) and with present climatic conditions, they have nowhere to turn.

The Fulani pastoralist lifestyle is not a dreamy day of wandering the beautiful countryside with cattle. Factor in the conflict which can cost them their life and one will naturally question their choice of occupation. Adebayo again quotes Baker and says:

Theirs was not a life of idealness, vandalism, aimless wandering and possibly, a few feeble attempts at cultivation; it represents an exceptionally delicately- adjusted ecological balance in which the threat of destruction was never very distant (Adebayo, 2018).

Their tenacity is one that must be admired.

The government too has not been able to address the issue. The Fulani have a long history of political domination in Nigeria from the time of the Jihad, where they have systematically subordinated and exploited their neighbors (Frantz, 1981, Rehfish, 1972). The court system in the area has historically been biased and tends to rule favorably upon any Fulani case brought before them. Due to their wealth, Fulani cattle owners have always had recourse to bribery, or 'dashing,'

which is an institutionalized medium of exchange in Nigeria to turn a blind eye. Archival documents allude to this when discussing trespassing or conflict:

Cattle were found to be present in large quantities, and it is estimated that there were between two and three thousand head in the area traversed. They had been in there several months, and were doubtless evading their taxed successfully. I cannot believe that the Heads of Delimi Habe, Mundum and Lame were unaware of their existence. They have soured the bush and denuded it of its rather sparse dry season grass, which makes it very hard on the grass-eating antelope and buffalo (Reserve Game Survey - Nigerian Archives).

Today, there are over 30 million cows in Nigeria, and over 150 million sheep and goats (vanguard). That places Nigeria as the leading livestock and cattle producer in West and Central Africa with a head count far ahead of Niger's 8.7 million cows (Nzeh, 2015). They are still responsible for supplying the dietary requirements of Africans animal protein. They also supply milk and dairy products which include fresh and sour milk cheese, butter, butterfat and cooking fat.

I did not have the privilege to interact or interview any of the Fulani pastoralists. However, my exposure to them is lifelong and at best I hope that through this section I was able to show the long-interconnected history of the Fulani with the land and their cattle. Their identity as people is closely related to who they are as herders and their simply cannot be one without the other. Efforts to encourage grazing reserves and encourage sedentary lifestyles have been impossible in the past and will be difficult because of large numbers of cattle and the fact that they are simply not structured to be like that. Denying them the option of open grazing has been undeniably deadly.

It is appreciated that a very valuable livestock industry has been established on the Plateau, but a much fairer balance must be struck nevertheless between Pastoral and arable interests than hitherto exists. At the moment it is very heavily overweighed in favor

of the former and while it is admitted that very good use is being made of the land under livestock management, now that there is a need to develop forestry resources for people living on the Plateau, pastoral interests must make room for forestry development compatible with the present needs. (The Adamawa Native Authority – Nigerian Archives)

AFRICAN TRADITIONAL MEDICINES AND HERBALIST

For as long as I can remember I have been plagued with migraine headaches. As a child I recall attacks that would leave me screaming and begging my mother to remove my head because it was causing me too much pain. I am still searching for the right medication, trying to identify my triggers, and trying really hard to maintain a healthy lifestyle.

When I was about 12, we went to the village with my parents. I arrived with a migraine and I went straight to my bedroom to lock myself up in the quiet darkness away from the endless visitors that would come to greet my parents. Naturally, everyone asked about me. I was the last child of the house and almost always with my parents. My step-grandmother was concerned when they told her I had a headache. My mother told me she left the compound and came back hours later with herbs she prepared and asked them to call me. It was late evening and the visitors had left. She laid a mat for me on the dirt floor and told me to close my eyes and lie down quietly. She dropped some liquid into my nose and asked me to inhale it. I cannot describe the next few seconds, but I felt the medicine go around my sinus until I eventually vomited over and over again. For days I was vomiting and I was sure that I was going to die but in my step grandmother's eyes it was a good thing, my body was expelling all the sickness. 20 years later and I still have migraines.

Nonetheless, despite this one bad experience, over the years I have soaked, boiled, and pounded all types of herbs that I have used to treat one ailment or the other. Traditional medicine has been proven to be effective for many ailments and diseases including HIV/AIDS, malaria, pneumonia, sickle cell anemia, oral health, diarrhea and other infectious, nutritional and metabolic conditions

(Elujoba, Odeleye, & Ogunyemi, 2005; Holmes, 2015; Korndoerfer, 2011; Sofowora, 1996).

Personally, I have used the leaves and stem of *azadirachta indica* for treating malaria and fevers, *vernonia amygdalina* for stomach aches, *zhana africana* for skin diseases, and *ocimum gratissimum* for diarrhea.

As such I am truly grateful to God for the gift of medicines that exist in plant form around us. Apart from food the next most important plant products are medicines and pharmaceutical supply (Sofowora, 1996). Evidence from animal observations show that chimpanzees use a number of plant species for medicine (Huffman and Wrangham, 1993), and I was told by my grandmother, the same one who dropped the medicine in my nose, that even goats and dogs know which leaves to eat when they nibble something they are not supposed to and have a tummy ache.

In regards to traditional medicine three things are very obvious to me:

1. Despite modern advancements in medicine there is still a population of people who cannot afford orthodox medicine. Even if they can afford it they do not have access to it.
2. The traditionalist herbalists definitely know what they are doing. There is a lot of phyto medical knowledge that is preserved by oral medicine. It is important for traditional medicine men to document their work.
3. However, access to the medicinal species is severely threatened due to:
 - unsustainable use of the herbs and leaves, e.g., participants complained of other herbalists that were not properly trained hacking off large portions of a tree
 - destruction of natural habitat of medicinal sources by other resource users

(Elujoba et al., 2005; Holmes, 2015; Korndoerfer, 2011; Sofowora, 1996)

People like my grandmother rely on traditional medicines mainly because culturally that is what she is used to. However, one cannot ignore the economic reasons behind the use of herbs and traditional medicines. Traditional medicine reduces poverty by increasing the economic well-being of communities and develops health systems by increasing the health coverage for the people. It is also essential for the maintenance of wellbeing, to improve preventive care and health promotion (Holmes, 2015). Holmes goes as far as to argue that utilization of traditional medicines may aid in poverty reduction and realization of the post-2015 development goals.

It is indisputable that in many developing countries a large number of people die daily from preventable and curable diseases because of the lack of simple primary health care. My grandmother eventually died from a dog bite. Apparently, there is a black rock that absorbs the poison or venom of snake or scorpion bites. People said if she had used it, she probably would not have died. It sounds funny, right?

Like my grandmother, 75% of the population live in rural areas, and a variety of issues aggravate their socioeconomic and health conditions. According to the 2008 report of the WHO/UNICEF JMP (Joint Monitoring Programme for Water Supply and Sanitation), access to safe water and sanitation is a major challenge in Nigeria. The proportion of the population using water from improved sources was only 47% in 2006, while just about 30% used improved sanitation facilities. 70 million Nigerians use unsanitary or shared latrines and 32 million have no latrine at all and defecate in the open. (WSMP, 2008; UN). These conditions aggravate communicable diseases.

In his paper, “Research on Medicinal Plants and Traditional Medicines” Sofoworo states that the development of prototype disciplines related to modern chemistry, pharmacy and botany enables the production of medicinal preparations from plant products on which the traditional medical systems of the various geographical regions are still based (Sofoworo, 1996). Did you know that traditional medicine discovered the use of *Salix alba*, the willow plant (containing the salicylates) for fever and pains, which led to the discovery of aspirin (Elujoba et al., 2005)? One of my respondents said in response to my question about whether he felt that conservation was important:

Honestly yes, we have been benefiting from the forest and everything nature gives because I am a herbalist and I know the importance of different trees and how to use them for healing.

In 1991 the World Health Organization redefined traditional medicines as comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern scientific medicine and are still in use today (WHO, 1991). The original definition coined in 1976 was cognizant of the importance of the original concept of nature, which includes the material world, the sociological environment whether living or dead, and the metaphysical forces of the universe (WHO, 1976). The original extended definition is necessary for describing the practice of traditional medicine in Africa because often there are elements of mysticism and secrecy.

This aura of mysticism and secrecy has caused many people to think that the use of traditional medicine is fetish and evil. They called the herbalist a witch doctor because sometimes when he collects plants and herbs, he would pray to the ancestors, dance and make incantations. At times

the traditional medicine man would also collect bones or blood to make his medicines. During my time in the Mambilla, I did not personally come across any tangible aspects of occult practices. However, I am aware that there do exist some practices that cannot be verified scientifically and are therefore regarded with suspicion by western doctors. For the purpose of this thesis, I am referring to herbs, leaves, seeds, barks, roots, etc. derived strictly from plant sources.

Another concern of skeptics of traditional medicine is lack of scientific proof of the efficacy for some of the herbs and diagnosis of ailments. I admit, even though I use traditional medicines I fall into this category and still wonder what exactly my grandma gave me. However, because they are compounded from natural products these substances are readily accepted into the body.

The herbalist, often called traditional medical practitioner or traditional healer, is described as a person who is recognized by the community in which they live as competent to provide health care (WHO, 1978) serving as the nurse, pharmacist, physician, dentist, midwife, dispenser, etc. The specialists include herbalists, bone setters, traditional psychiatrists, traditional pediatricians, traditional birth attendants (TBA), occult practitioners, herb sellers and general practitioners. These persons are more readily available, accessible and approachable than the orthodox physicians and their services are much more affordable than modern medical facilities. The traditional healers diagnose and manage various common diseases at the primary health care level, with various herbal dosage forms, namely, concoctions, decoctions, infusions, dried powders, ointments, tinctures and macerates that are found in nature. The herbalist administers these medications through various routes such as oral, rectal, intra-uterine, sub-cutaneous,

external or topical applications (Adedigba, Nwhator, Afon, Abegunde, & Bamise, 2010; Sofowora, 1996). Many countries in Africa now have a division, department, or task force on African Traditional Medicine, usually attached to their Health Ministries.

Medicinal plants constitute an important resource for the discovery of new drugs, or of richer sources of already known plant drugs. Colonial documents attest to this in a correspondence where they write:

In recent months Strophanthus sarmentosus has sprung from the obscurity of the West African Flora into the headlines of the American Press. This common plant of roadsides and secondary bush has hitherto been valued chiefly by the hunters as yielding a poison for arrows. By the Press it is acclaimed as a source of cortisone the drug which has given extraordinary relief to sufferers from rheumatism and arthritis. In consequence, there is a very keen demand from America for the seed of this plant and a continuous stream of inquiries is coming from local firms who ask where the plant is to be found and how they can obtain supplies. The importance placed on the search for sarmentogenin may be gathered from the fact that one of the largest pharmaceutical firms of America has a botanist in West Africa searching for Strophanthus and related genera, and a second firm is sending an expedition complete with motor-lorries and equipment. The United States Department of Agriculture has a botanist in this country interested in the matter and the British Medical Research Council a team of workers. The object of all is probably the same, to collect samples of seed for testing and to establish the identity of the plant from which each sample came (Strophanthus and Cortisone- no date Nigerian Archives).

Noticeably, 25% of all prescription drugs dispensed in public pharmacies in the United States every year contain one or more ingredients of plant origin (Farnsworth and Soejarto, 1985). The collection of plants often involves obtaining ethnomedical information from the rural people. Considerable sums of money are invested in the exploitation of such information. Sadly, cash amounting to no more than small change is given to the villagers (Sofowora, 1996). The saddest part is that scientists end up making plant collections for research abroad with very little return

even to the scientist, not to mention the villagers (Isoun,1989). As a result, the rich natural resources of Africa are at present exploited by multinational companies with the approval of corrupt or ignorant African governments and are exported and sold as raw materials.

Tammy Korndoerfer from Australia spent 5 months in Yelwa village. During her time there she interviewed 37 members of the community who were traditional herbalists. Her paper 'Herbal medicine in a 21st-century African village' started off with this profound statement in the introduction:

Environmentalism is a big issue and protecting the environment is something that, in principle, most people agree with. There are however many more issues than recycling and riding a bicycle that needs to be addressed to save our planet. These issues are so numerous that we cannot be expected to live our lives and be champions of every environmental cause, but as herbalists, we have a certain responsibility to understand environmental issues that relate to our profession. (Korndoerfer, 2011).

Korndoerfer was referring to the loss of traditional medicine as a result of 2 main causes:

The first and most obvious of these is the direct loss of valuable knowledge to a community. In many African communities' herbal knowledge and skill is regarded as a form of wealth and families have often held their herbal knowledge as a closely guarded secret passed on only to chosen children or grandchildren, much like any other part of an inheritance. Now, however, the chain of knowledge is breaking with young people preferring to engage in other work. This work, e.g farming or mining, is carried out without consideration of the medicines that exist naturally in the community. The Fulani pastoralists also set ablaze pasture land to encourage the growth of fresh grass, often burning and destroying medicinal plants (Korndoerfer, 2011).

Korndorfer goes on to discuss the second part of the problem which is related to the first: the knowledge that relates to the sustainable harvesting/collection, processing or uses of a plant.

Whatever one's reservation with traditional medicines and herbs there are few Nigerians who will dispute its usage. Mohammed was a comical young man I interviewed. Earlier in our interview, he said to me:

They (referring to urban dwellers) pay less attention to herbalist and our local medicine, but when they try the hospital and it fails that's when they will turn to you for help.

Later on, in the interview he told me the story below in a very funny way. I still remember laughing so hard that I cried. Listening to the audio recordings, I realize that his story illuminates the importance of traditional medicine for the rural poor, and also how negative interaction with the farmer led to the loss of the prized medicinal plant.

Unfortunate Circumstances

"Today is market day."

That was the first thought that hit Abubakar even as he lay on his bed. He inhaled the dusty, earthy smell of roots, bark, leaves, and pod that hung from the rafters of his ceiling. Opening his eyes, he calmly took in the sight of the medicines around him. The richness of the forest and the land that healed sicknesses and diseases. He was grateful for the land and all it provided him with, the ability to make a livelihood so that he could provide for his family, but most importantly the ability for him to help people by providing remedies for their ailments. He was happy and content and for a minute he forgot about the Fulani and their cattle that were always eating his herbs and leaves.

The telltale sounds of day breaking around him resonated in his ears. He heard the creaking sound of a bucket as it rocked empty in his daughter's hand. Seconds later he heard the gentle grunts as she pulled the water out of the well and later on he heard the sound of the now full bucket hitting the clay wall as she walked the narrow corridor to the bathroom.

Next door Abubakar could hear his neighbor's wife making a fire. He heard the blowing sounds of her coaxing the embers into a flame. Minutes later the crackling of a fire cast a bright light through the gaps in his window.

Abubakar was the village herbalist as was his father before him. He never had an option but he really didn't mind. For as long as he could remember he had always been a part of his father's work and everybody knew he was going to be a fine herbalist like his father. They saw the way he followed his father around. The way he handled the mortar and pestle even as a toddler. As he grew older he followed his father deep into the forest with a little axe to harvest medicines listening intently as his father reminded him when to sun dry or shade dry, when to boil or when to soak, when to take one sip or two and when to use fresh herbs or dried. The instructions were numerous but Abubakar memorized each one.

Standing up, he found a path between the herbs and went outside and stretched. On the floor right next to his door he saw Mama Hassan sitting patiently.

“Ina kwana⁵,” she spoke in greeting.

“Jam na⁶?” Abubakar replied.

“We did not sleep last night. Haruna spent the whole night crying and his body was very hot even though it is very cold.”

“What did you do then?”

“I put him on my back and tried to rock him to sleep. Then I tried to give him breast milk but he refused.”

“No bath?”

“No,” she answered.

“Did you remove his clothes?”

“It was cold.” Shaking his head Abubakar went back into his room and came back with a bundle of dried neem leaves and root cuttings.

“Do you have a very big pot at home like that size?” he asked pointing to the pot in the corner of the compound.

“No, but I can collect from my sister in law. She got many pots as part of her gara. I will beg her.

“Okay, when you go home fill the pot with water. When the water is boiling remove the pot from the fire and drop the leaves inside. Do not boil the leaves.”

Mama Hassan nodded her head listening attentively.

“Fetch some of the water and bathe the child with it. Take a handful of the water and give the baby to drink and you drink some also. The baby will drink it in the breast. Do you understand?”

⁵ Good morning (fulfude)

⁶ How are you? (fulfude)

“Yes, I do. Jam koo dume⁷. How much is the medicine?”

“How much did you come with?” Abubakar asked. He knew Mama Hassan struggled. Her husband was a drunkard and she was left to provide for her 6 children.

“100 naira”.

“Bring it,” he said stretching out his hand. Abubakar nodded his head as Mama Hassan repeatedly expressed her thanks.

When she left, Abubakar went back inside the house. He spent a moment to pray that Allah would heal the sick child. It was important to him that his clients got well and he would often follow the parent home to make sure that the medicine was administered properly. But, today was market day and he did not have time to follow her back home.

Instead, he concentrated on what he needed to put together for market day. He held a lot of medicine for baby ailments. New mothers were always paranoid about their baby and having some zhana africana was always helpful. He instructed the mothers to mix the finely crushed seeds with shea butter or palm kernel oil. It cleared away all the rashes. He took some vernonia amygdalina for diarrhea and psidium guajava for male libido.

As he grabbed his medicines, he wondered what would happen if the kanya⁸ tree on the edge of the forest was either cut down for firewood or burnt when the Fulani burnt the grass at the end

⁷ Thank you.

⁸ Diosphyros mesliiformis

of the dry season. It was the only tree of its kind he could find in the entire region and the leaves, root and bark were all medicinal. It was so exposed though and he wondered if it would last. He also thought about the *giginya*⁹ he had discovered the other day in the forest. They were pretty well hidden and he doubted they would ever be seen by anyone.

As usual, the market was a beehive of activity and Abubakar went straight to the edge of the market where he usually laid his spread on the ground. As usual he could sense the excitement of both the hawkers and the buyers as they searched for the best deals. The air was heavy and thick with dust from the harmattan winds, the smoke from the sizzling *suya*, the exotic smells of spices and perfumes and the incessant buzzing of flies. His neighbor, Ahmadu the potter had already arranged his clay pots close to him. Even though it was never discussed Abubakar sublimely referred clients to Ahmadu to purchase large pots or smoke racks for cooking and smoking herbs.

“A customer came looking for you Abubakar,” Ahmadu said.

“Okay,” Abubakar nodded his head and opened up the large burlap that he arranged his medicines on. His hands moved steadily arranging things on the burlap.

“The person who came was a big man, he looked very important and wealthy. He was sitting down on the rock waiting for you even before I came. But, he has gone now. I really hope he comes back because he looked like someone that was ready to spend a lot of money.”

Abubakar was now interested and looked around. “Hmmm.....I wonder who he is. Anyways I hope he comes back,” he said, shrugging his shoulders.

⁹ *Borassus aethiopum*

"Walahi, this kind of customer comes once in a while. I hope he comes back," he said lowering his voice.

Abubakar straightened the little bottles with tonics and took a horse tail and dusted his display.

"Salama Alakum."

Abubakar looked up. Before him stood an old man wearing a baban riga. He looked well cultured and educated. His skin was fair and wrinkled.

"Are you Abubakar?"

"Yes I am, what can I do for you?"

"Your father Haruna was my friend. I know you do not know me but I would buy things from your father and even then, you were so anxious to help your father. Your father spoke highly of you and I am very happy to see that you have followed in his footsteps. I was in Lagos when your father passed away. My mother told me. Sannu da hankuri¹⁰"

"Nagode, nagode baba, What can I do to help you?"

"I have been suffering from something like pneumonia and tuberculosis for many years. I have been to all the large hospitals in Lagos and Abuja and my doctor has asked me to see a doctor in India. It is a real problem to me and I was considering going but I remembered your father and thought perhaps I should try some traditional medicine. I have been bedridden for several weeks now and once I started feeling some strength I decided to come home for traditional treatment. Do you have any medicine that you think will help me?"

"Do you have bloody discharges?"

¹⁰ Be consoled.

“Yes. I do, all the time sef. I try to hide it from my family and I spend a lot of money on handkerchiefs,” he stifled a grin.

“There is a medicine that I know will help you. It is a very sour leaf that you will boil and drink for one month. That will be your water every day, you will not drink any other liquid. No tea, no beer and no water.”

“Okay, okay. No problem,” the man’s face lit up.

"But getting it is the problem it is only available on the extreme edge of the forest inside the reserve towards XXXX. I honestly do not know when I can go there, but I will try to go there very soon. When I go, I will bring the medicine for you."

“No, no..... that simply will not work. How much money do you want.....I want you to go there now. I will give you N20,000.”

“Rankai daddai¹¹, I cannot go there now,” Abubakar said. “I have clients that will come looking for me. Today is market day.”

“N40,000.”

Abubakar shook his head.

“N100,000.”

“Rankai dadai, you are very generous and I am extremely grateful but I honestly cannot go now and I cannot collect that amount of money. I promise you by this time tomorrow I will meet you at home and give you the medicine.”

The man looked at him long and hard. “No problem, since I have not died all these years, I will not die today.

¹¹ Means to addressing a person with title respectfully

Eventually, the throbbing crowd of people became isolated groups of stranglers that came to pick up goods or wares that were left behind and scavengers that went through heaps of rotten trash looking for anything remotely edible. As the sun settled for the day in the sky, stretching the shadows long Abubakar packed his medicine. He rolled up his burlap, carried the sack of medicine and walked home briskly. Walking into his house he dropped the content of his hands on the floor and picked up his cutlass.

By the time he could see the forest reserve in the distance, the sun had gone to bed. Darkness surrounded Abubakar like ink but he was not afraid of the forest or the sounds of the night that accompanied it. He imagined the forest full of life like his father's stories. The lion, the cheetah, the warthog and even the elephant. But they were all gone now. Perhaps lost forever.

As a child Abubakar made this trip several times with his father and at no time had his father carried him. He felt most alive and strongest when he came to the forest doing what he knew he was born to do. Perhaps that was why he was not worried that he was going to the reserve even though it was prohibited. He loved the forest and the land on which it stood. He would never destroy or harm it.

He knew he was close and he quickened his pace. In front of him, the moonlight shone casting light through familiar terrain. He walked along confidently until he approached a familiar yet unfamiliar clearing.

Abubakar froze, realization setting in. Before him was a farm of cassava. The shoots looked young. About 3 weeks old he thought to himself. The young leaves were still limp and small on the transplanted shoot. In the corner of his eye he saw stacks of firewood and sticks neatly arranged from clearing the land.

“Wayo, I can never help him now” Abubakar held his head shouting “wayo, wayo.” He fell to the ground rolling on the ground in despair. His head hit a shoot of cassava and in annoyance he stretched his hand and pulled out the cutting. The root freed itself from the ground and scattered soil some getting into his eye. Oblivious to his temporary loss of sight Abubakar pulled out the cassava one after another. His legs kicking and stepping whatever was in his path.

He did not stop until he had completely destroyed the farm.

THE LOGGER

But it's just one tree
one single tree
one home.... or so you think
the place of birth
the nesting ground
for monkeys, bats and snakes
let's not forget the butterflies, the beetles, ants and worms
the frogs that call and graceful birds.
That all call it home
But then, one day,
it's suddenly lost
and all that's known is gone
the tree that housed a thousand beings
of creatures, great and small

I am a writer, not a poet. Prior to this day I had not written any poetry since the 4th grade. Neither was I particularly keen on poetry. But the day that I wrote this I was heartbroken and sad and the only thing I could think of doing was writing poetry.

I remember driving up to the Mambilla. Large trucks filled with timber drove past us and we passed scores of them loading up with timber for the market. The untarred and potholed road was lined with heaps of rosewood marked with an inscription written in blue marker that I assumed was the name of the owner of the heap. That year, Nigeria was in economic recession and many Nigerian youths incentivized by the booming prices turned into illegal loggers. Some that could or would not go into the forest decided to steal from those that did and crime rates especially for robbery was high because timber was the new oil.

But, let's go back to trees. Trees, tea and a good book. Those are a few of my favorite things.

I don't know when it started or how to describe it but I just really love trees. There is a feeling I get when I see a big old tree. The thick gnarled trunk and the green leaves just excite me. I respect and adore trees. I can't explain it. It's just a part of me.

When I experienced my first full fall in the US in 2017 I thought I would die. The trees losing their leaves literally sucked the life out of me. I tried to remember that it was a cycle and that the trees lose their leaves to live again. One day I bought a avocado at Meijer that tasted just like the ones at home in Nigeria. I kept the seed and planted it. And then I waited. And waited some more. It was then that I realized that it would never grow here because this was not its habitat. At home I would never let a good seed go to waste. Anything that could be planted from seed, I pulled out of the trash and planted.

But my love for trees goes way back to when I was a child. My dad told me there was a day that we went to the palace of the chief of our village. He was sitting outside under a tree and after a lengthy conversation with my dad it was time to leave. My dad said I started crying at the top of my voice and when asked what had suddenly made me so sad I responded that it was the tree. Apparently, it was a hot tropical African day and the shade of the tree with the breeze that caught in the leaves had cooled me so much that I didn't want to leave. The chief eventually cut a stem cutting of the tree and asked my father to plant it for me where it would grow and I could enjoy the shade. I don't remember the story but I trust my father.

Apart from shade and other aesthetic benefits, forest resources account for approximately 2.5 per cent of Nigeria's GDP. They provide employment for over 2 million people, particularly in fuelwood and poles enterprises, including those who work in log processing industries, especially in the forest zones of the south. Significant felling of timber coupled with over-harvesting arising from increasing demand for wood products have all contributed to the enormous deforestation in the country. It is estimated that between the years 2000 and 2010, the land area covered by forest shrank by one third, from 14.4 per cent to 9.9 per cent. At the global level, deforestation and forest degradation, through agricultural expansion, conversion to pasture land, infrastructure development, destructive logging, fires, etc., account for nearly 20 percent of global greenhouse gas emissions, more than the entire global transportation sector and second only to the energy sector. Overgrazing, poor land management systems, dependence on firewood as the major energy source and inadequate capacity to implement mitigation strategies against climate change aggravate this situation (FAO, 2001).

In a document titled Principles of Forest Policy, the conference iterated this fact and reminded all that:

The forest is a factor of prime importance in the economic, social, and physical balance of the world. Subject to wise conservation and utilization, it constitutes an indefinitely renewable source of products which are indispensable to man. The development of standards of living and the growth of world population create ever greater needs for such products, and many countries insufficiently endowed with forest resources must therefore depend upon other countries for supplies. Also, because it provides or can provide employment for many workers and is a source of raw material to a wide variety of industries, the forest constitutes an important element in the social stability and progress of the world. The forest also exercises vital protective functions in regard to soil, water and climate and, as a result, influences the agricultural economy, the development of hydro-electrical industries, and the general welfare of rural and urban peoples both in the country itself and in neighboring countries. Both the protective and productive functions

may well be vitiated by destructive and careless practices. In order to enjoy the full and all the benefits which forests can afford, both to the country itself and the world at large, it is essential that each country should formulate a sound forest policy (Principles of Forest Policy MAHF FOR 27- 1948 Nigerian Archives).

Another document stated:

Forestry is admittedly only one of the major forms of land use and Agriculture and Grazing are more important. But it is in fact possible to allocate land to Forestry now, if action is taken in time, and it is not yet possible to control the rights which are bound up with Agriculture and Grazing (The allocation of land for Rural Use together With a Consideration of Forestry Problems in Relation to Peasant Economy - MAHF 313 (1948) - Nigerian Archives)

In Nigeria, forest reserves and parks are controlled by the federal government Ministry of Environment through the State Department of Forestry and Wildlife. All other woodlands are regarded as open access areas (Ajibola, Adekunle, Olagoke, & Akindele, 2013). The Federal Department of Forestry (2001) estimates that Nigerian forests are being depleted at an annual rate of 3.5% leaving only 10% of its area covered with natural forest. The country lost about 60% of its natural forest to agricultural encroachment, excessive logging (for timber and non-timber products) and urbanization between the 1960's and the year 2000 (FAO ,2001).

Since 2000 rosewood has been one of the primary timber products exported out of the country. Rosewood is a sweet-smelling wood available in a variety of hues. Asia's insatiable demand for luxury items made from rosewood including furniture, flooring and ornate art work kept the Asian exporters systematically combing the countryside for suppliers to fuel the illicit trade. Local residents were suddenly rich despite the fact that all tree species under the family genus *dalbergia* had been placed on the endangered list by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITIES) and commercial sale was prohibited.

Unfortunately, Taraba state, where the Mambilla is located, has been the poster child of this illicit trade. In an effort to curb the illegal logging and to promote reforestation, the Taraba state government banned the felling and trading of all timber species in 2004. Unable to withstand external pressure and overwhelmed by the rosewood rush the state eventually stopped seizing the logs and started collecting a fine of US\$1430 per truck (The Rosewood Racket – EIA, 2017).

A Nigerian proverb says *“Sai da dan gida ana chin gida.”* Roughly interpreted it means only with the help of the people in the house is the house exploited. The Environmental Investigative Agency conducted an in-depth investigation and uncovered all the key actors in the racket, many of them Nigerians. The trade in rosewood shares many economic features with elephant ivory, rhino horn, and tiger skin trades: limited and vulnerable supply, high demand and high levels of criminality and corruption. Rosewood is now the most illegally traded wild product in the world, both in value and volume (The Rosewood Racket – EIA, 2017).

Logging of timber, including rosewood, is banned or allowed only under license, but traders have a free reign in the forests across the country because of poor regulations, monitoring and local corruption. Cunning businessmen exploited that and by 2015, Nigeria became the largest single exporter, accounting for 45 percent of total export to China. From a net importer of timber in 2011 and a marginal exporter of rosewood logs in 2013, posting a mere 30,866m³, by the end of 2014 Nigeria was, according to Chinese Customs records, exporting 242,203m³ of rosewood to China, an 18-fold increase. Environmental Investigation Agency (EIA) in its recent reports has revealed that over 1.4 million illegal rosewood logs from Nigeria, worth \$300 million, were laundered into

China. Between January 2014 and June 2017, 40 shipping containers were shipped daily from Nigeria to China (The Rosewood Racket – EIA, 2017).

The diameter of a rosewood tree ranges from 2-4 feet. When the loggers go to cut down a rosewood tree they usually destroy all the other trees around, as well as any ground cover in the vicinity. Maybe it's due to lack of equipment for tackling trees of that size, but when they felled the tree they would simply let it roll down the hill causing extensive damage to the vegetation around it. The unrestrained harvesting of the wood left blighted and raped landscapes. Unfortunately, neither the community nor the loggers were doing anything to stop or replenish the supply of rosewood. During informal interviews the loggers expressed that they did not own the trees and many of them were contracted by other loggers and given equipment (gasoline and chainsaw) to cut the trees.

In Mambilla the sound of the chain saw was omnipresent. Near or far, the telltale sounds of cutting timber were obvious. Every logger I interviewed said the same thing: they cut to survive and provide for their family.

The statement in archival documents penned in 1950 remain true today and reminds us of the importance of trees:

It is necessary to state that, at present, the only known means of producing wood is to grow it in the form of a tree. There is, as yet, no known method of manufacturing wood. So far, in spite of all the advances of science, no artificial process has been invented by which wood can be manufactured and it is literally true that the only way yet known to man by which he can provide himself with wood, and many of the other products of the forest, is to find a living tree and to take the wood of that living tree. Wood therefore is a crop, just as much as corn or yams or other foodstuffs are crops. Man requires food for

his existence, he also requires wood for many purposes in his daily life. There must, therefore, be a balance in the allocation of land for the purpose of the production of agricultural and forest crops; part of the land surface must naturally be allocated for the growing of food stuffs, but also, since it is impossible to make wood without growing trees from the soil, some land must be allocated for growing the trees required to provide wood (Factors affecting the choice of Forest Policy MAHF FOR 27, 1956 / A Memorandum on Forest Policy MAHFR C.80— 1957, Nigerian Archives).

Archival documents confirm that Northern Nigeria had insufficient high forest to ensure the production, on a sustained yield, of sufficient timber to meet its own needs. It has certainly never been in a position to satisfy its own internal demand and develop a surplus for export. To ensure the sustainability of this resource another letter dated 1927 to the senior conservator of Forest Northern Province from the director of Forest said:

The first step to counter the present rapid progressive desiccation is to form a forest committee..... it should be remembered that desiccation is coming from the north and north east and threatening the whole of Nigeria. The first forces of defense should therefore be in the north of the northern provinces supported by adequate reserve forces (Destruction of Tropical Forest MAHFR 293 (1927) Nigerian Archives)

Northern Nigeria is in fact, already importing from the southern regions considerable quantities of sawn timber. The realization of a natural asset which can, by export, bring into the country foreign currency is sound business but, if the Northern Nigerian High Forest is exploited for export to attract foreign currency, it can only be at the expense of purchasing from other sources an equivalent volume of timber for internal consumption. It would, therefore, seem logical that, as Northern Nigeria is at a disadvantage in competition in the export market and requires all the homegrown timber it can produce for its own internal needs, the policy should forego the attractions of the export trade and concentrate on production for internal demand. (Sustained Yield, Maximum Produce Yield or Maximum Money Yield - Nigerian Archives)

As such, the effects of this mass exportation of timber is disastrous. To augment this loss of timber, large areas around Yelwa have been planted with *Eucalyptus* spp and to a lesser extent *Pinus* spp, which has been introduced as a fast-growing alternative to native forest trees for human use. In regards to the introduction of eucalyptus archival documents state:

I know how skeptical the Department has always been about plantation in the North, and of course the results obtained in number of places have fully warranted this skepticism. I can understand how careful we must be in our approach to the questions of plantation in the North, but Mambilla is unique in that there are splendid growing conditions prevailing for Eucalyptus, a steady rainfall and an almost complete absence of white-ant. Here at last is a locality in the North where we can grow good plantations successfully and for that reason I am prepared to give the area my entire attention each rainy season. Indeed, a minor sort of annual 'assault' of the Plateau with 160 labourers is planned. (Plantation Projects Mambilla District, Adamawa MAHF 907 – 1958 Nigerian Archives).

As is the case in many places in Africa eucalyptus was introduced because it is fast growing and hardy, and therefore very effective in providing firewood and building materials. A community member confirmed this when he said: “*We get all we need from the eucalyptus farm like firewood, timber for roofing and to sell.*”

The impacts of logging interact positively and negatively with other forest users. In an archival document the colonist extensively documented the issue of the logger and the pastoralist which is the most obvious interaction. It said:

However, in the savanna forests, there is also the question of grazing to be considered before settling upon the method of management. The indigenous cattle industry is of great importance to the economy of Northern Nigeria. Owing to the ever-increasing pressure of the farming population there is now little natural grazing left in some Provinces outside the present permanent forest estate. The need to increase the permanent forest estate means that the demands of Forestry are competing not only with the agricultural interests, but also to a certain degree with cattle interests. A situation will therefore arise before very long in which there will be little or no free grazing land outside the permanent forest estate. It is therefore essential that, if possible, a symbiosis should be achieved between the interests of the forester and the cattle owner. At first sight it

would seem that the interest of the forester and the cattle owner are so radically opposed that they cannot be brought together. The forester is working to increase the volume of wood grown in the permanent forest estate and wants to grow wood and not grass. The cattle owner wants grass and not wood. Burning to maintain a grass cover is averse to the improvement of forest vegetation, i.e. the trees which produce the wood. However, fortunately, it is possible that a policy can be devised which will reconcile the two apparently conflicting interest and the management of the savanna forests can be so organized as to provide the symbiosis required (Savannah Forest Management – Nigerian Archives).

Additionally, logging operations can facilitate the unsustainable exploitation of NTFPs. The bushmeat trade provides a classic example. Bridges, logging roads and vehicles provide greater access for hunters and allow transportation of meat from remote, previously inaccessible forests for sale in markets (Rist et al., 2012; C. Shackleton & Shackleton, 2004). This allows for the free and unchecked influx of unwanted “visitors” in the forest.

Another less obvious interaction are the changes in forest structure, composition and function. Such changes impact upon the availability and regeneration potential of numerous NTFPs. It is observed that selective logging can have beneficial effects for some vines, palms and herbs (Costa and Senna, 2002). Such NTFP species are known to profit from the enhanced light conditions resulting from enlarged canopy gaps following logging. A few NTFP species even reach their maximum densities in logged-over forests (Rist et al., 2012).

Other archival documents enumerate how burning of pastureland to facilitate growth, grazing, expansion of farmland and illegal harvesting of timber continues to spread in spite of the efforts of the forest staff and government to prevent it. In the Mambilla as in other parts of the world

bush burning exist even today despite the establishment of a forest reserve and stricter regulations.

This inscription below fig 5 is found at the back of the Native Authority Timber License. One can argue that if the trees belong to the people, why don't they have access to the forest and the tree therein?

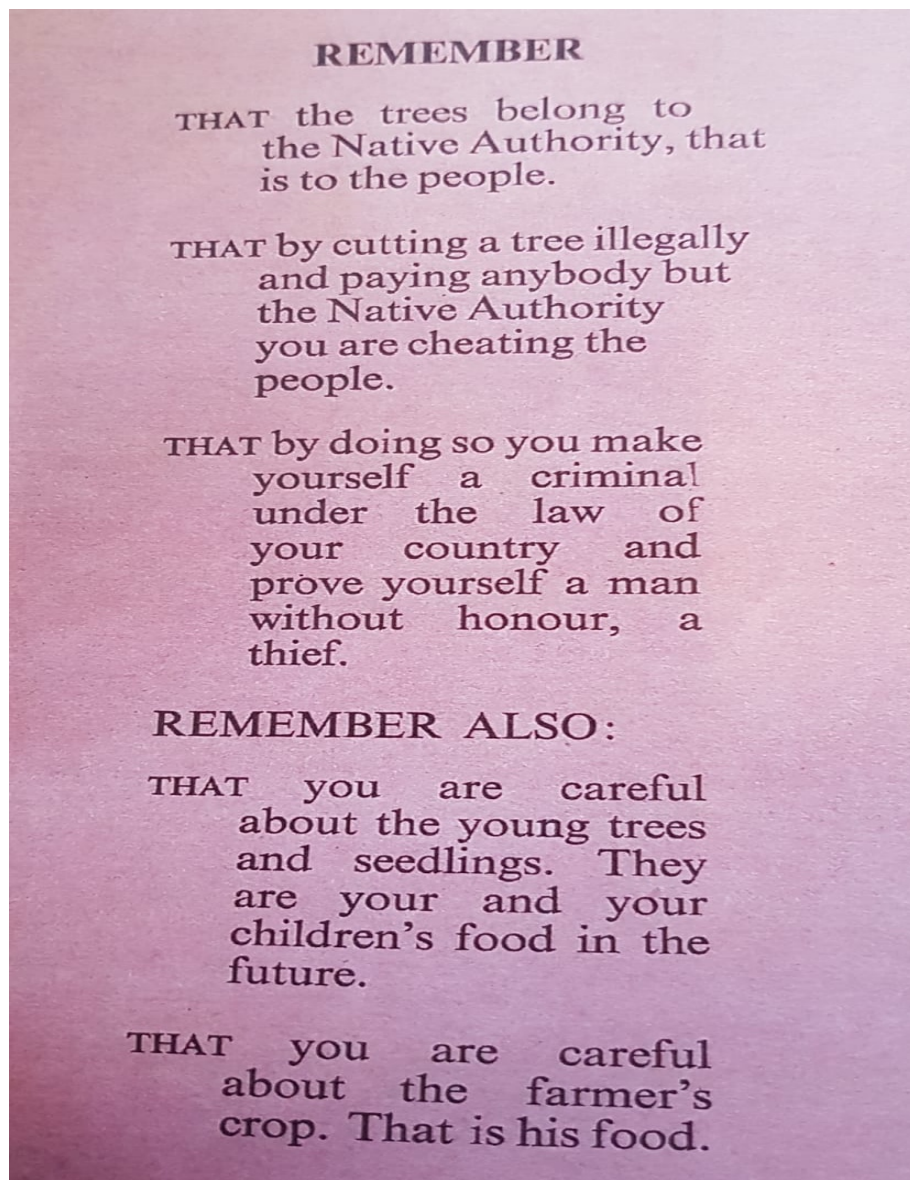


Figure 5. Back inscription on a copy of timber license (Nigerian Archives AJKGI/ZB)

NON-TIMBER FOREST PRODUCTS: FOUR WOMEN, ONE STORY

The thing about grief is that when you see other people grieving, you remember your own grief.

I lost my father years ago and yet I remember the events vividly. The early morning phone call from my older brother. The long bus ride home. The passionate cries and prayers to God to save my father's life. But, alas he was already dead.

I arrived home and my mother was stretched out on the 3 seater in the living room. Her chest rose and fell, rhythmically and I could tell she was sleeping. Beside her was Mama Judah. She was the doctor, nurse and pharmacist in my community and seeing her beside my mother explained what I was told. My mother had been sedated because her blood pressure has risen and they were afraid of what could happen if unchecked.

Ten years before my father passed my mom suffered a stroke and even though she was more than 80% recovered she was working fewer hours and was significantly weaker. She moved slowly and many things that were regular, daily activities became chores for my mom. My parents were a very close couple and despite my mother's limitations my father still loved and cared for her. He involved her as much as possible in his activities, travelling with her and involving her in all family decisions. As a result, the death of the primary breadwinner of the family, our lifeline and support came with a lot of struggles and major adjustments to our family, but most especially my mother.

For many women, this stage of life is extremely difficult. Losing your husband to death, divorce or separation comes with unique challenges. As sole heads of household's women are especially vulnerable because they have to carry the burden alone as well as deal with social and cultural norms.

In the literature on gender, environment and sustainable development two main approaches come to mind, 1. Gender and environment 2. Ecofeminism. The gender and environment approach emphasize the importance of women as managers of environmental resources and, their vulnerability to diminishing natural resources and the need to direct conservation programs towards assisting women. The ecofeminism approach is built on the ideology that women have an inherent affinity with nature as opposed to men's desire to control and dominate nature through science, technology and development (Agarwal, 2009; Shiva, 1988; Steinmann, 1998).

Both of these approaches lean towards a rigid conceptualization of gender relations and I prefer an alternative approach that analyses the flexibility of social, economic and ecological context that transform traditional resource management task (Rocheleau, D., Thomas-Slayter, B., & Wangari, 2013; Steinmann, 1998)

In many parts of the world, gendered differentiated rights and responsibilities of men and women serve as barriers to women's ability to cope with the impact and adapt to anticipated changes in times of change. Rural women, especially those in female headed households, are therefore more reliant on the natural resources as they lack the opportunities that are more available for men

(Agarwal, 2001; Gabrielsson & Ramasar, 2013; Sunderland et al., 2014). Female headed households do not have a husband to farm or hunt for them so they rely more on what they can catch easily or forage. Women often lack access, control, land, money, credit, tools, education and status in order to increase their adaptive capacity. Households that are wealthier or more educated have more options, shocks and buffers and are thus not as negatively affected as poorer households. (Agarwal, 2009; Gabrielsson & Ramasar, 2013; C. Shackleton & Shackleton, 2004).

At times like this families must deal with their disadvantages and negotiate life by making wise decisions. This disruption of the economy of a family is handled by diversification of income. I remember some of the radical decisions we made as a family. I say this in full realization that my situation is not comparable to many others. But, money was tight and cuts were made. For many people in rural areas, some of these decisions include obtaining access to natural resources and utilizing the resources locally sourced. As a family we used firewood and charcoal to heat bathing water and to cook large meals. My mom would throw a fit if we left the fire burning when we were done using it. I specifically hated quenching the firewood because I would smell like smoke and get ash on my hair. A woman's success or failure in making cuts to the family budget would determine the family's ability to survive and maintain positive well-being (Valdivia & Gilles, 2001).

Non-timber forest products exist in forest, rivers, lakes and pasture and common products derived from the natural resource include honey, firewood, grass and vegetative matter gathered from nature (Wunder, Börner, Shively, & Wyman, 2014). One of the male respondents informed me of another product that I had not heard about called beichmedia.

Yes, you know this forest is very rich. We have the beichmedia (also known as the local yeast) that our people used it in frying and baking things like pan-cake, masa, bread or rice cake.

In this thesis I use the term non-timber forest product to include any non-timber, biologically derived product/resource collected or gathered from the wild by rural people for direct consumption or income generation on a small scale. These products include wild spinach, fire/fuelwood, wooden utensils, wild fruits, edible insects, bush meat, wild honey, reeds for weaving, medicinal plants and herbs, mushroom and lichens, and rattan (C. Shackleton & Shackleton, 2004). For the purpose of this sector I will focus on wild honey, firewood and basket makers. Other products like precious stones and medicinal plants are covered in different sections due to the emphasis from my respondents.

Non-Timber Forest Products (NTFP) are a major source of income for cash and subsistence. This is especially true in rural communities in developing countries like Nigeria, particularly for women and children who regularly access them. In many situation even people that are gainfully employed or have a more regular trade still utilize NTFP as an auxiliary trade. (Wunder, Börner, et al., 2014). Additionally, even the urban populace use firewood or forage for plants to use in the home.

Archival records stated thus:

As I have already emphasized to Government, Minor Forest Products are the only means, apart from employment of labor of Forest Work, by which we can put cash into the peasant's pockets, e.g. Shea nuts, Gum Arabic, Chicle Beeswax etc. The peasant should be permitted to take these products free. If revenue has to be raised I consider it should be by a Tax at the port of export, payable to the exporter. (Minor Forest Produce (1939) - Nigerian Archives)

Non-timber forest products serve as buffers, safety nets or a natural form of insurance for the household or individual in times of adversity which can manifest as economic, social or bio-physical environments. These include deaths or retrenchments for the breadwinner of the house, famine, depression, bad harvest, family illness, income slack periods, such as between agricultural harvests. At times like this it is common for rural households to turn to NTFP to tide them over (Wunder, Börner, et al., 2014). This involves substituting purchased items with harvested items e.g. utilization of firewood instead of kerosene or gas. Another way that rural families use NTFP is by utilization of species usually not utilized, e.g foraging wild greens and mushrooms instead of purchasing them in the market. Lastly, some families indulge in the temporary sale of NTFP, e.g. honey or mats, to enable them pay for school fees or purchase other products they cannot source locally.

For the typical African woman, being able to collect and use NTFP to meet daily needs of food, shelter, medicine and energy allows scarce cash resources to be used to secure other household needs. It is also a means to accumulate the necessary asset base for a more secure livelihood, e.g. the education of children, investment in agricultural tools or capital for activities that generate income.

Additionally, the cost saving has benefits not only at the household level, but also the national level. The role of NTFP in the provision of energy, food, medicine and shelter to the rural poor alleviates some of the cost that the government would incur if they had to effectively provide

these services in rural areas (C. Shackleton & Shackleton, 2004). Although not a valid reason it makes up for lapses on behalf of the government.

NTFP can be beneficial in a variety of ways:

1. NTFP can provide options to increase income and employment opportunities as well as for constituting an income source.
2. NTFP are relied on heavily for personal and domestic use
3. NTFP serve as insurance policies or buffers in times of death or sickness.
4. NTFP is a more benign way to use forest than most land use alternatives, allowing for conservation. (Wunder, Angelsen, & Belcher, 2014).
5. Increased monetary value of NTFP will prevent people from converting land into other uses.
6. NTFP prevents rural dwellers from avoiding falling into deeper poverty.

Sunderland (2014) in his quantitative study on women and natural resources asked and answered the following questions:

1. Do women contribute more than men to household income from unprocessed forest products?

YES, in Africa the share value of unprocessed products collected by women is higher than that collected by men. Additionally, many forest products are harvested in state lands/reserves often in de facto open access, and women collect more forest products from common property resources (Leach, 1995).

2. Do men contribute more than women to household income from processed forest products?

Men bring a considerably higher share of processed forest product income (61%) than women (25%).

3. Do women tend to collect forest products for consumption while men collect them for sale?

Overall, most products (both unprocessed and processed) are used for household consumption, not for sale.

4. Who brings what forest products to the household?

A marked gender specialization in the collection and processing of most forest product categories exist, especially for processed products. However, the three mentioned in this section are gathered by women.

There are variations in gender-differentiated tasks among regions. For example, in Latin and North America men gather firewood with women but in Africa it is mainly the woman's role. These divisions are attributed to the physical nature of certain tasks, historical patterns of natural resource use and ownership and cultural barriers to accessing markets and harvesting infrastructure. These gender-differentiated tasks and responsibilities in food production, provision and generation of income result in different needs, opportunities, priorities and concerns for men and women (Sunderland et al., 2014). One of the respondents expressed this after she vehemently stated that men do not gather fire wood. She said *"As a woman the major activities for the day were farming, fetching fire wood to use and sell in the market and cook for the house"*.

Despite growing recognition of women's participation of use and management of natural resources, their contribution is undervalued in natural resource policy and programs. Uma Rani (1999) observed how even in afforestation projects women are often disadvantaged because

species are selected primarily to serve men's commercial activities. Paudel (1999) in his research concluded that women have greater knowledge than men about natural resources. While men are concerned with plants mainly for agriculture, women use the plants for medicine, cleanser, fiber, food and tools. Women collect firewood for cooking, fodder for livestock, roots and tubers and herbs and fruits for food. Additionally, collection and sale of bamboo, gum, tamarind, honey, leaves, and spices provide an important source of income (Flickenger, 2003).

Recent statistics state that in developing countries 70% of agricultural labor is provided by women, 100% for processing foodstuffs, 90% for water and fuelwood. (FAO, 2010).

What we do not say enough is that due to degradation of forest, women are losing up to 80% of their income (Uma Rani, 1999). We neglect to say that unsustainable extraction and utilization of environmental resources can degrade the resource base, biodiversity and environmental services which many women depend on (Wunder, Angelsen, et al., 2014). We do not factor in that our human urban development and expansion threatens the land that women depend on. (Wunder, Börner, et al., 2014) Most importantly we neglect the fact that surrounding forest and pasture are vulnerable to slash and burn agriculture by farmers, over grazing and fire by Fulani pastoralist which destroys the resources that many of the women depend on. In this case if the women decided to be confrontation that could mean death simply because they are trying to survive.

But have you seen what discrimination against women looks like? Meet four women from Yelwa.

The woman I did not meet:

Before me a familiar scene unfolded. Mohammed (my research assistant) and I approached a house in the village. It was a Tuesday morning and the crowd outside the house looked stern and serious. Mohammed confirmed my worst fears when he said, "The man of the house here died." I shook my head sadly and asked Mohammed questions about the family. The deceased had left behind a young wife and 3 small children. But the wife was really young, she would likely remarry, Mohammed said. The village women were sitting to console her and the men had gone to bury him.

We walked past, only stopping briefly to exchange the customary condolence greetings with those around us.

Mohammed, my research assistant, had taught many of the village women to read and write. I knew he would know her personally and I asked him what would happen to a woman like her in a situation like this.

"She will look for a small trade to do," he replied. By that he meant either opening a small thrift store or engaging in the non-timber forest product trade. There were no companies that she could look for work, she was uneducated and she owned nothing. While she waited for the next man to marry her she would scrimp as best as she could and rely on what nature gave her and the generosity of the kind-hearted people in the community.

The utilization and sale of NTFP is an integral part of the informal sector. Despite the fact that it is integral in job creation and poverty reduction, it is very unlikely that any of the NTFP described will be able to grow or scale without some level of external intervention. The rural populace majorly involved in this are totally devoid of technology, resources, access to credit, contracts or skills to develop their business (A. S. E. Shackleton et al., 2010). Instead it is strictly a means to survive. The women all similarly said:

“We do many small things. We farm, we buy and sell, we do everything”.

Firewood:

As she bent over to pick the twigs on the floor she said “My father who art in heaven, give us today our daily bread”.

For a second, I thought I was mistaken. Did she really say what I thought she said?

I came closer and greeted her. She replied and I asked her what she said. Understanding my confusion, she laughed too and said, *“If there is no fire, there is no food”.*

In Yelwa all cooking is done on firewood. That means that firewood is just as important as food. The Mambilla Plateau is relatively cold and unlike most of Nigeria the people prefer to heat their wash and bath water. Additionally, in the evenings it is customarily for people to burn fires as a source of warmth. Together these two purposes require a significant amount of firewood and almost all women unless physically unable to are involved in gathering firewood.

One of the misconceptions that has plagued us is that women's role in society is negligible because they are concentrated in the domestic sphere, dealing mainly with unpaid domestic work (childcare, cleaning, cooking, fetching water or firewood) in comparison to men who tend to prioritize paid work (Upadhyay, 2005). Archival records state:

I think that charcoal/firewood will prove to be one of the most important Forest Products of the North and that Northern 'bush' is well suited both in timbers and regrowth for being worked over under controlled management for charcoal/firewood production (Minor Forest Produce (1939) - Nigerian Archives).

Through the years the forest that has been sustaining agricultural production and providing the most needed minor produce essential for survival is slowly disappearing. What is left of it is out of reach for many people. The community's long-standing relationship with and dependence on the forest is destroyed and the scramble for its resources among its resource users is exacerbating the situation. As such, the impact of resource decline on the availability of firewood and the lives of women is putting their lives on the line when they clash with other resource users.

Honey:

The tall woman invited us into the room and blew the charcoal in a clay pot till it crackled. The charcoal pot lent a light of red orange to the small room. We began the long process of greeting and small talk. When we were done a voice spoke in the darkness.

I turned to the direction of the voice and when my eyes adjusted to the darkness I saw another woman lying on the bed. She was my respondent. Everyone called her 'Madam'. It was a rainy day

and the air was cold and damp despite the burning coal. I conducted the interview with 'Madam' under the covers.

Ngel Yaki means "place of honey" or "place of the bees" and the colonialist had supported replanting of eucalyptus trees. Eucalyptus produces a sweet-smelling honey that is in high demand across the region. I can honestly say that I have personally not tasted any honey that good. In a document titled Suitability of Northern Provinces of Nigeria for bees-wax production, the colonialist wrote:

Extensive areas in all the Northern Provinces of Nigeria are admirably suited to the production of bees-wax, and even honey in places. An exceedingly valuable export trade to the United Kingdom and elsewhere could be developed by the encouragement of beekeeping along the appropriate lines in the vast region of Nigeria. In contrast to most other industries, it would not involve great expenditure in the form of salaries to trained personnel, capital for the purchase of expensive equipment, or recurrent expenses to cover various incidentals (Salient Points of Practical Significance - Suitability of Northern Provinces of Nigeria for Bees-wax Production/ Yola Province 5379 / 1953 Nigerian Archives).

Madam expressed her grievance in the establishment of the reserve. It had cut off her supply of honey. Additionally, they had abandoned rich farmlands and much abundance of forest products in obedience to the government decree but other resource users, especially the Fulani pastoralists, had not. There were also episodes of illegal farms in the forest (Section on Herbalist).

Madam said:

They prevented people from entering the forest, but the Fulanis refused to come out. They are still there grazing in the forest and even the elders are not happy with this thing, because they stopped farmers farming in the forest but they allowed the cattle rearers to stay there because they have bribed them but all farmers have packed out. Cows are going in there and destroying all what they have planted.

Fortunately, and with the intervention of the Nigerian Conservation Foundation which had a short stint in the community, she and several others had received some training and funding in beekeeping. In anticipation archival documents stated:

There is an enormous need everywhere for teaching the elements of sound methods of apiculture and explaining in a simple language the mysteries of the mind and way of life of the honey-bee. This should be done not only to the Sarkins Zuma (chief of bees) but also the peasants likely to become interested in the craft, and, in particular, to the children. Some simple explanations, but fundamental to successful beekeeping, were made by me here and there during my tour. They displayed great appreciation and intense desire for more guidance. Undoubtedly, the Africans in the Northern Provinces of Nigeria could be readily trained in the craft of beekeeping and to a much higher standard than commonly practiced at present (Salient Points of Practical Significance - The Type of Beekeepers in the Northern Provinces of Nigeria/ Yola Province 5379 / 1953 Nigerian Archives).

However human production processes of honey can be more effective if aided by improved technology. Archival records state:

The Africans who take an active interest in beekeeping in Northern Nigeria appear to have a special aptitude for the craft but they are greatly in need of modern explanations of the various processes fundamental to successful apiculture (Salient Points of Practical Significance – Summary or Recommendations/ Yola Province 5379 / 1953 Nigerian Archives).

The future of bee keeping is much more secure and the trade has transitioned and developed over the years. Of all the NTFP, beekeeping was the one trade that I personally felt was more viable and could potentially grow into a business venture and scale.

Basket and Mat Maker:

Mama M had sent a huge bunch of bananas for me earlier in the day. She flagged me down as I walked passed her house to my research assistant's shop. She briskly walked toward me not like a woman in her 80's but a young maiden. I hesitated not because I did not want to see her but

because the problem was she could not speak a word of Hausa and I could only say the customary greeting in Fulfulde. And so, I stopped and we stuttered along, smiling and hugging and despite the broken language we both knew that we were greeting. She touched my face and my braids and when she did her wrinkled hands were smooth and soft from many hours of pulling the grass blades to weave. Dancing and smiling she turned around and bent over and said she wanted to carry me on her back because she was so happy to see me. Eventually we settled down for the interview.

Interviewer: I see you making basket every day. Where do you get the material?

Respondent: Near the river in Baruwa

Interviewer: Who taught you how to make the basket?

Respondent: My mother

Interviewer: Is there plenty of grass around here or in the forest?

Respondent: In the forest? No, it is from Baruwa. Before we get the grass close by but not now. The fire and the farms have covered everywhere. The place is too far. I tell my children to get it for me

Craft-making with grass products has historically been an exclusively female activity. It can be concluded that middle-aged women and older women dominate in mat and basket weaving (Makhado & Kepe, 2006). They are often past the age of child bearing and have assistance or do not need assistance for household chores. Most of the women involved in crafting like Mama M were widowed or separated from their spouses.

Like Mama M many of the women are uneducated and have been weaving the products for most of their lives, but not for purposes of trading. Mama M says she made mats and carriers mainly for home use and to give as gifts during traditional ceremonies but would periodically sell baskets

when people requested them (Makhado & Kepe, 2006). Basket and mat weaving could offer some opportunities with some links to tourism. However, finding sources of raw materials was getting more difficult. The Fulani pastoralists were notorious for burning the pasture so that new grass would grow for their cattle to eat. Additionally, their cattle trampled the grass by the riverbanks, thus making it harder to get grass for the weaving trade.

Survival is a daily activity and utilization of NTFP is tightly linked to sustainable development through provision of livelihoods. It is of utmost importance that policies contribute to the management of natural resources and empowerment of women livelihoods. Unfortunately, complex natural resource management interventions are often not the top priority of national planners, who usually prefer policies that can be linked to more predictable, simple, and scalable models of production growth, including agriculture and plantation forestry (Wunder, Angelsen, et al., 2014). A gendered perspective allows us to understand the challenges of women and allows construction of viable solutions.

The women all meet on Sunday which is Yelwa town's market day. A baby suckled hungrily at her mother's breast while she simultaneously haggled the price of firewood and baskets with the traders from Gembu and Yola, the larger nearby towns. Some carried wild guavas, leafy greens and other fruits and vegetables they had harvested from the wild. Other women sold food and treats to the hungry traders and customers. It was like a pop-up restaurant and the only day they had to make some money. On Saturday the cold fireplaces were alit and business was on.

Their names may be different, and their setting distinct, but a common unique thread in all four stories is the interrelation between access and control of resources that allows women to improve their status in life. When women have limited access, no access or insecure access the ability to sustain the natural resource and the livelihoods with which it depends is jeopardized.

THE HUNTER

The Last Lion

.....A long, long, long time ago...

Murna had been walking for days. She could not tell now how many specifically because the sun was dark and often covered with clouds. She was breathless, tired and cold. The fog settled around her thick and heavy like a wet cloak. The long walk uphill had left her exhausted and many times she had lost her way. There was no doubt that she was walking in circles; lost.

The baby on her back did not cry. It was almost like he knew that his cries would get him nowhere. Her breast brought forth no milk and the infant on her back ate what she ate and drank water.

She survived on wild berries and banana and had tried to adhere to the tale she had heard growing up about eating in the forest. Her grandmother told her the tale she had heard from her grandfather when she was young.

"The forest is full of delicious things to eat and in that manner, the forest is always able to feed and cater its own. However, beware, whenever you enter the forest you will see three stone tablets with different types of food on it. Only pick one my dear and never eat more than one or else you will die and be gone forever".

So even though she was completely famished she ate only one thing at a time.

Eventually, Murna reached a clearing in the forest. She could tell that others had rested there before. There was a gathering of rocks for a fireplace and a tree trunk lying across like a bench.

The space in front of the fallen tree trunk had been cleared to make room for one to sit. Despite the welcoming sight Murna was afraid to sit and rest, even more so afraid to lie down and sleep. There was an eerie feeling about the place but when she hit her leg on a stone and fell to the ground, she did not stand up again. Her eyes closed and she suddenly she felt warm and safe.

The smooth silk of the lioness brushed against her body. Cover me, shield me, protect me keep my baby and me warm.

The lioness purred from within her. A deep rumble that would have scared any living being.

A long, long time ago...

Baba Juro stood by his doorstep and looked around him. All he could see was grass, trees and shrubs. The different shades of grass were interrupted by the big heads of cattle that lazily grazed around him. He inhaled deeply and watched as a mist of fog slowly advanced from the valley towards where he stood at the edge of the mountain. From the fog, he recognized the silhouette of his son Mandi and his right-hand man Usman.

"Baba, we have found another," Mandi said to his father.

Juro, his father, tall and strong stopped and looked at him.

"Are you speaking the truth?" his father asked.

"Why would I lie to you"?

Baba Juro sighed sadly and took his stick and walked slowly down the mountain. In his youth, he would have run down shouting as he descended or ascended the mountain. But, the years had

passed, and he was not as nimble. He knew these mountains and valleys like no other and feared nothing. But, time had slowed him down and now he walked instead of running.

A man and woman were huddled in the grass. They looked like they were in a warm embrace but he had seen too many of such and he knew they were they dead. He held the woman under her armpits and slowly pulled her apart from the man. He looked deep into her face and he could see that she was young and beautiful. They must have died earlier today or else the lions would have gotten them. The man was older. His hands were broad and calloused. A farmer perhaps he thought.

Years ago, the chief had asked him to come and settle with his family here at Ngel Yaki and establish a town. His reasons were twofold. The distance between Mai Samari and Gembu was too far for a day trip and travelers had to sleep on the road. The Mambilla weather was unpredictable and without warning, a heavy fog could darken the trail and often times the sun only made a halfhearted attempt of rising. It was damp and cold and unprepared travelers died of hypothermia. His second reason was the wild animals that pounced upon unsuspecting travelers and killed them.

Baba Juro was known as the best hunter in the highlands and he feared no beast. He learned from his father who had also been a hunter and his sons hunted well too.

It was a win - win situation for Baba Juro. Like any traditional African man, meat was a crucial part of his diet, and he indulged in it quite liberally. With or without the chief's request for him to settle here, he would undoubtedly still hunt. Living here simply brought him closer to his game.

.....A long time ago...

The Fulani herdsman came running and prostrated on the floor in greeting.

"*Salama Alakum,*" they all said in greeting.

"*Alaku wa salam,*" The Ardo responded with a gentle nod of his head.

"*Mai girma, ranka dadai,*" ¹²

"*Barkan ku da zuwa. Madalla*".

"The lions are at it again. Five large cows were killed and eaten by the lions just yesterday. This week we have lost 15 heads of cattle".

"I thought we had taken care of the situation," The chief responded looking worried.

"There appears to be one lion left sarki. He has been a menace to the society. Killing people and livestock all over the place".

Alarmed, the chief called his wakili.

"Summon all the hunters in the area. Call the hunters in Mai Samari and Nguroje. Send for the marksmen in Bali and Huntullo. Send to Yola and Gembu. Ask them to all come now"!

The news spread and all the hunters in the area came. The hunters sharpened their spears, sharpened their knives, and cleaned their guns.

They went into the forest and started tracking the lion. For days they checked far and wide, but they could not find the lion. In resignation, many of the hunters returned home.

¹² Greeting for a person of prestige.

Barde was a brave hunter from Cameroun. He knew what killing this lion would mean for him and his reputation. *Indeed, for here I am retelling the story of the hunter.* One day, Barde caught a glimpse of the lion. Startled he froze for a minute and looked at it uncertain what to do. The lion saw him too, and after eyeing themselves for a moment, the lion charged at him. The hunter fervently tried to put some gunpowder in his gun. His hand shaking became clumsy and he poured the gunpowder on the forest floor. Finally, he loaded his rifle and aimed at the lion.

The lion fell to the ground and without a moment's hesitation, he rushed toward it. Eager to claim his prize, he hurried forward and drew his knife to cut off the lions head. The lion injured but not quite dead leaped forward and clawed the skin off his face pulling it from the top of his head to his neck.

Barde screamed. The pain was excruciating. He ran to the village screaming at the top of his lungs. "Help, Help, Help.....!!!". The blood gushed down his face and drenched his clothes all the way to his feet.

The villagers came out of the house. Alarmed they shouted questioningly, "What is this in god's name?" The turned their faces away and pulled their children towards them.

The villagers enraged took their tools and weapons and charged into the forest again. The injured lion sat majestically. The king of the jungle. They loaded their guns, aimed and shot the lion repeatedly. Finally, the lion fell to its side. The last lion of the Mambilla.

Or so the story goes.

Although there were never any two variations of the story that were exactly the same it was fascinating to me that almost every respondent I spoke to told me this story. The inconsistencies are common especially in oral history accounts. Without prompting the story was often retold to me especially when discussing the changes to the forest comparing then and now. In fact, many of the stories, I was told had to do with hunters and hunting. It is quite evident that hunters were at some point held in high esteem. I say were because while I was at the community conducting this research, there seemed to be some level of awareness or should I say consciousness and very few people identified as hunters. Back in the days' hunters were held in high esteem and were literally celebrated. They were the '*princess*' in the local folk tales. When there was a big kill, people would come from all villages to celebrate and partake in the consumption of the kill.

In communities around the world, animals have always been killed for consumption as a source of protein. In situations where human life was at risk animals were also killed and, in this story, we see how one animal was killed to preserve the life of another.

Today in the Mambilla and other communities where there are parks or reserves that restrict the people access to the resource the people have continued and transitioned their subsistence and culturally driven hunting into an illegal activity. The celebrated hunter is now outwardly considered a thief but inwardly celebrated for his ability to source meat.

The most obvious changes to the Montane environment are the decline in large mammal numbers, soil erosion (especially in the grasslands), tree cover and change in grassland floristic composition (Campbell report). However, the forests are still rich in bird species (Dunn, 1999; Fishpool and Evans, 2001), including the great blue *tauraco corythaeola cristata* and the bar-tailed trogon *apaloderma vittatum*. However, recent

Evidentially, extreme poverty, advances in hunting techniques and increasing human population have increased the demand for bushmeat and significantly affected wildlife populations (Knapp, Rentsch, Schmitt, Lewis, & Polasky, 2010). The times have obviously changed. One of the village respondents said:

“We live by hunting. But now there is just few wild animals”

In Nigeria, as is in most African countries bushmeat is defined as any non-domesticated terrestrial mammal, bird, reptile or amphibian harvested for food (Nasi et al. 2008) and is a highly sought-after delicacy, especially if it is of a rarer species or an animal that is elusive to capture.

It's quite a picture. Imagine this.

Location: Any rural community in Nigeria

Time: Sunset

Internal monologue of any wife in any household: It's almost dinner time. I have some okro in the garden that I can make with tuwo (cornmeal). Yesterday (insert husbands name) brought home some rabbits from his hunt. I will use it to make soup. It will taste delicious.

Apart from providing meat for the family bushmeat hunting is also considered as a source of income. While this pressure alone is likely to render bushmeat consumption unsustainable, additional demand from commercial hunting has brought about an increase in bushmeat consumption (Macdonald et al. 2011) with estimates of the economic value of bushmeat trade ranging from \$42 million in Liberia to \$350 in Ghana (Bakar et al. 2001). Estimates of the national value of the bushmeat trade range from US\$42 – 205 million across countries in West and Central Africa (Davies, 2002).

Today the story is different, as confirmed from community members:

“These days, the big wild animals are no more here as before, so there is great different in hunting now than before. When we go hunting we do not get the wild animals as before... In those days there were so many wild animals so when we went hunting, we would always catch a lot of meat which we always brought home. We would eat some and sell some to have money for other needs”.

I have always imagined that Nigeria had a robust wildlife population but when I saw this list at the Nigeria archives, I was amazed. Never, had I dared to imagine that all this wildlife had existed naturally in any great number in Nigeria. However, interaction with other forest users man and cattle/pastoralist has made many of Nigeria’s wildlife species threatened or endangered (Schenck et al., 2006). Reading the list of these threatened and endangered species, my heart saddened and again the conservationist in me emerged enraged at our actions.

Lion	African Wild Cat	Giraffe	Hyena	Senegal
Elephant	Desert Lynx	Wart Hog	Gazelle	Crocodile
Senegal Galago	Serval	Western Water	Dwarf Buffalo	Wild Pig
Tantalus	Cheetah	buck	Cutting Grass	Ostrich
Guernon	Aard-Vark	Gazelle	Fox	Red Monkey
Patas Monkey	Western Dassie	Hippopotamus	Tree Squirrel	Baboons
Dog Faced	Black Rhino	Wild Pig	Hedgehog	Crocodile
Baboon	Wart Hog	Senegal	Cheetah	Golden Oribi
Giant Pangolin	Red Riverline	Hartebeeste	(Dormouse)	Gambian Oribi
N. Nigerian Hare	Hog	Bush Cow	Rat	Harnessed
Lake Chad Hare	Hippo.	Leopard	Wild Cat	antelope
Side Striped	Giraffe	Roan Antelope	Bat	African Ant Eater
Jackal	Bushbuck	W.African	Oribi	Talbot's
Common Jackal	Waterbuck	Hartebeeste	Aard-Vark	Mongoose
Pale Fox	Reedbuck	Crested Duiker	Hartebeest	White Tailed
Hunting Dog	Bush Cow	Baboon	Kob	Mongoose
Senegal Striped	Grimm's Duiker	Hyena	Water Monitor	Spotted Hyena
Polecat	Crested Duiker	Leopard	Land Monitor	Striped Hyena
Nigerian Striper	Buffon's Kob	Monkey	Porcupine	Roan Antelope
Weasel	Roan	Gazelle	Ground Squirrel	White Collared
Honey Badger	Scimitar Oryx	Wart Hog	Wild dog	Mangabey
Cape Clawless	Dorcas Gazelle	Harnessed	Tiger	Colobus monkey
Otter	Red Fronted	Antelope	Chimpanzee	Bay Duiker
African Civet	Gazelle	Crocodile	Yellow backed	Ogilvy's Duiker
Senegal Genet	Dame Gazelle	Reed Buck	Red Pig	Red Flanked
Marsh	Mongoose	Water Buck		Duiker
Mongoose	Ostrich	Civet cat		Gorilla
Egyptian	Duker			
Mongoose				
Jackal				

Table 4. List of animals found in North East Nigeria -Mambilla (MAHF 184)

The extent to which these animals have disappeared in the region is unclear. A researcher I spoke to when I was in the field said:

When I came to Ngel-Yaki in the 1970s, me and my dad had to stop in Yelwa and trek from Yelwa to Ngel-Yaki forest edge, and there where nothing like so many cattle. I really felt remote up here and I remember looking at all of these colobus monkeys and it was so common. It was common to see chimps and they would always love to call out to us and so you always heard chimps. There were warthogs. And so the whole place has a completely different feeling to what it is today.

She went on to say:

We need to do some surveys and research. We need a mammologist or zoologist to come here. It would be really good to have baseline survey like now and then in five years' time so that we can actually quantify if animals are coming back.

Nasi et al. (2008) also observe that wildlife and hunting are intimately connected to many cultures throughout the world with social and cultural value. Elements of African cultures, encourage or permit bush meat hunting for consumption and trade and for making traditional medicines. Historically, these practices have been sustainable, but with the rapid growth in human population in the last 50 years, increased access to forests through logging roads (Wilkie et al. 2000) and with the development of modern weapons (Bowen-Jones & Pendry 1999), this is no longer so.

The African Manatee is an excellent example of this. The African manatee is found in most of West Africa. In Nigeria, it is distributed along the River Niger and Benue and their tributaries as well as coastally. The Bachama people have cultural practices where the man that catches the first male manatee of the year is highly honored and blessed by the traditional chiefs. This is not only because of its consumption but the oil derived from the skin is used for healing and traditional medicine. The male organ is highly prized and is used as a charms and talisman (Ogogo A. U, Eniang E. A, 2013). Archival records indicate attempts by the colonialist to conserve the manatee but because it was so closely affiliated with culture they were unsuccessful.

In recent years the cattle that were protected to the extent of near extinction of many animals in the country have continued to be a problem. Some of my respondents said:

Cattle are grazing, so there is no more grass and the land is depreciating. They (pastoralists) burn the grass with fire. Now cattle enter and fire burnt the grasses and the animal run, they are eating them. Many animals run away.

There is great difference in hunting now and before, for now as we go out for hunting we are not getting the wild animals as before and the reason why we are not getting them is that now there are domestic animals like cows who have grazed and the wild animals have lost their home and where to hide, so they have gone far into the forest because they are afraid of the domestic animals and the hunters.

.....Today...

The coals glowed a bright orange-red. It was beautiful actually and I had to remind myself that it was hot and dangerous. The blacksmith's son manned the bellows, an ingenious creation made from a bicycle wheel instead of the inner tyre tubes that was still prevalent in the community. Under his coaxing the piece of metal in the fire quickly took on the luminous red-orange glow of the coals. The blacksmith removed it quickly and hit it fiercely on a mantle with a hammer until it flattened, forming a thin rod. He repeated the process again until it formed the likeness of an axe. When he was satisfied he dipped the newly formed axe into a trough of water and pulled it out to admire.

I sat across from the blacksmith. Watching his movement while I played with his youngest children. Blacksmithing was his after-hours job, teaching was his day job and hunting was his gig. It was a trade that he had inherited from his father and he and all his brothers were hunters. They all had families and always consumed what they hunted as a source of protein. He admitted that he never

caught enough to sell but sometimes if he caught something big he would share with his friends or neighbors.

“Do you talk about sustainability with your student?” I asked.

“Yes, I do”. He launched into a vivid description of what he tells his students about sustainability and protecting the environment. He used the analogy of consuming enough for his children and grandchildren. Did I mention I was playing with his daughter?

Was that not hypocritical? Speechless and annoyed I tried to understand how one man could be a teacher and talk about sustainability to his students, while on the hand he was a hunter that was perpetrating the rapid decline of biodiversity in his region. Add into the mix that he is also a parent with children that at this rate will have very little if anything left to show.

And then I remembered this was life. This is how it has always been and probably always will be. I remember the words of one of my respondents.

“This is how we live in the bush. Eat or be eaten. Capture or be captured.”

**From my field notes- Later in the day I saw what looked like a tiger. A tiger in the Mambilla??? In all my interviews I had heard no mention of the tiger. Should I go forward or should I go back? I really wanted to make a phone call and I was almost at ‘the spot’, I proceeded and made my phone

call. That evening I asked one of the researchers and after much description and consultation with textbooks, I was informed that I had just seen a Civet cat. Everybody seemed interested and intrigued that I had seen one. They had been here for four years and had only seen them on camera but never in real life. Later on, the science coordinator told me that it was quite ferocious. I would have to be careful.

THE MINER

My research assistant and I walked briskly in the rain discussing the interview we had just had with a community member who was big in the mining activities in the community. We discussed the possibilities of formal mining and how it could be used to promote community development.

"Aunty, I can hear you are talking about mining and stones," the young man walking in front of us interrupted. He was young but seemed very sharp and smooth.

Before any of us could answer, he quickly put his hands in his pocket and pulled out a handful of blue stones. Blue sapphire. I had never seen a precious stone in real life. I held the stone in my hand and felt its cold weight. Minerals in the Mambilla include gemstone, mainly blue sapphire, topaz and occasionally amethyst and garnet (Ahmed & Oruonye, 2016).

"Will you buy them? He asked eagerly.

"No," I honestly replied. "But, I would like to ask you some questions."

He did not mind, and I asked if he had mined them personally, if he was afraid at the mines, how much he got for them and if he felt it was worth it. I was surprised and maybe even a little sad at his response. Not at him but at the ball that life had tossed him and the way he played the game.

Life is complicated but, for this young man only one thing is important: survival. As an environmentalist, the only acceptable solution in my mind for mining and the environmental degradation that it causes is to put an end to mining. Unfortunately, I had overlooked the people.

Neither the government nor I had any brilliant plans to replace the social and economic benefits these miners were receiving from their trade.

I thought of the Walt Disney cartoon Pocahontas. In the animation English settlers from the Virginia company in London travel to the New World. They are in search of gold and silver to bring them wealth and status. The Walt Disney version is a romanticized, idealized version featuring John Smith the captain of the ship, Governor Ratcliffe the voyage leader and Pochahantas, the Powhatan bride. Many people do not understand that even the colonization of the America's was based on natural resources and confrontations with the natives that had tragic results. Western North America was colonized and developed partly by artisanal miners and it took years for them to become industrially organized at a great expense. Natural resources (metallic, non- metallic minerals and fossil fuels) are important in the development of any country and has proven to be the situation in many countries.

Interestingly colonial documents in support of a similar situation state:

I have already said that if it is necessary to create a Forest Reserve over mineralized areas, then mining must come first." (Forestry and Mining MAHFR C.84 – 1940 Nigerian archives)

However:

Since mining and forestry are both necessary to the welfare of this country and since at times and in some ways they are antagonistic to each other some working agreement involving cooperation and compromise, such as exists at present, is the only practical and reasonable solution. There is no doubt that considerable justifiable protest would result from any attempt at restrictive measures (Forestry and Mining MAHFR C.84 – 1940 Nigerian archives).

Therefore:

Complete segregation of forestry and mining in this country is impracticable and unnecessary..... There is not good and sufficient reason why mining lesses, in certain conditions, should not be granted in forest reserves, not why forest reserves should not be created, where necessary, over areas including mines, as is the situation at present. Neither do any legal difficulties exist to this end, since the present legislation provides for this (Forestry and Mining MAHFR C.84 – 1940 Nigerian archives)

This was however not an easy decision and in other places statements like this are made:

I have encountered the view that no mining should be permitted in forest reserves unless an exceptionally rich mineral deposit is proved. It is perhaps curious that a forester should be placed in the position of having to support the cause of mining, but I cannot help feeling that such a policy would be unduly restrictive; that an abundance of mineral might thereby remain undeveloped and much wealth be lost to the country. The question arising in such cases is whether the objects of reservation are materially and vitally prejudiced; and except where this can be shown, I am in favor of permitting mining under control of the reserves. (Forestry and Mining MAHFR C.84 – 1940 Nigerian archives).

Mining is one of the oldest economic activities in Nigeria dating back to prehistoric times when man crudely exploited iron and clay for production of implements and utensils (Ahmed & Oruonye, 2016). In the mining sites, the miners indiscriminately carry out extensive mining activities without any consideration to the environment and other users. Artisanal small mining (ASM) operations include clearances of vegetation to create footpaths in the mining area, manual digging and evacuation, transportation, washing and sorting of minerals.

A 1940 policy document presented during a Forestry Conference held at Jos on April 1st and 2nd, and attended by all Circle Officers of the Northern Provinces expressed the following views on the relationship between forestry and mining: -

1. *In Nigerian conditions, mining in forest land rarely involves a risk of accelerated erosion of the type that tends to spread unless checked. The land affected is normally re-colonized by vegetation when mining ceases.*
2. *Mining may result in the silting up of river beds but this, at the risk of spreading erosion when present, are objections to it that have equal weight inside and outside forest reserves. Soil conservation measures occasioned by mining have really nothing to do with forest preservation and should be considered independently of the presence or absence of forest reserves (Forestry and Mining MAHFR C.84 – 1940 Nigerian archives)*

I know that has not played out to be true. My hometown of Jos was a major mining city from 1903. Because of the open cast and paddock mining method used in Jos, heaps of alluvial overburden and mine- tailings litter the surface as well as numerous man-made ponds and lakes and the destruction of vegetation abound. In the Mambilla the scene is similar though smaller. I can see the degraded land, piles of dirt, abandoned pits, called "lottos," and trenches. These all posed a serious danger to humans and animals (Ahmed & Oruonye, 2016) and has made the area unproductive for agricultural purposes. As a result, the activities of the miners results in conflict between community members and other major resource users like pastoralist, farmers and foresters. In Maisamari town, ASM activities stopped in 2007-2008 as a result of conflict between these various resource users.

Veiga in his writings on mining in the Amazon states that artisanal and small-scale mining is an important livelihood activity for many rural dwellers (Veiga, 1997). The Mambilla community is no exception, and it has been a beehive of activities with an influx of many people from different nationalities hoping to strike it rich. On a large scale, the importance of the mining sector has been documented to include foreign exchange, employment and economic development. But, to the

millions of ASM miners, it's just a means to survive for one more day. An aged farmer I met said with much emphasis to me:

"The youths have to work, and unless they work, they cannot eat. They will do anything. What can you do with an empty stomach?"

Her statement confirmed what many other researchers claimed that unfortunately, despite the dangers of ASM, operations continue to spread due to rise in the demand for gemstones and the unattractive nature of other means of livelihood such as farming in the rural area where the mineral is substantially available. (Ahmed & Oruonye, 2016; Ako et al., 2014).

During my time in the Mambilla, I never saw an industrial machine or any equipment worth mentioning. It is obvious and surprising that despite the prospects and possibilities of mining in the state and region it is still dominated by informal mining activities undertaken by individuals who rely on manual labor, handmade tools, and local methods. As such, these small-scale miners work in difficult and hazardous conditions. In the absence of the required safe mining regulations mining poses a danger to all who mine in the area. (Veiga, 1997). The concept of survival is constantly the driving force of these miners. An artisanal miner works based on instinct, need for feeding his family and paying his bills.

Ahmed (2016) states that ASM is a means of livelihood adopted primarily in rural areas and is often considered the informal sector because it is outside the legal and regulatory framework and is thus not formalized, organized, planned and controlled. Because it is considered informal, it is outside the legal and regulatory framework and its income is difficult to estimate. As a result of the lack of

formalization and control, it is usually considered negatively by conservationist and even governments as a result of its potential for environmental damage, social disruption and conflict.

The miners and the community are fully aware that the process of mining gemstone involves high risk and occupational hazards which could result in death and injuries following the collapse of mine pit and other accidents. Horror stories of collapsed/trapped mines and blast gone wrong abound with unfortunate endings. Depletion of oxygen by burning candles that are used as a source of light, dust pollutions from digging and blasting, air pollution from oil and gas combustion from water pumps are just some of the health hazards that miners are exposed to.

In an interview with a miner he expressed with resignation, *“What do you want me to do? I have a family.”*

English really does not do justice to his words, because in his statement he expressed that he knew he was putting his life at risk. He had seen others die. But yet, he continued because he had no other option. I asked what he would do if he did not mine and he said, “Look around you, see them sitting hungry.” By them he was referring to all those that were not mining.

Nightmares

Dust, dirt, sand.

It filled his nostril and he remembered the verse from the Bible that the pastor would always say at funerals: All come from dust, and to dust all return.

Simon felt the warm ball of tears fall from his eyes, down on his cheek and onto the ground. He felt the saltiness in his mouth and then he was embarrassed at himself for crying. Mandi's words hurt him. It was more than just being wrongly accused of a crime that he did not commit but also being fired from a job that he genuinely loved.

Maybe it was lying on the ground so close to the earth or maybe it was just reverting to former habits but at that moment he realized that he would have to go back to mining. He did not like it one single bit, but he was an honorable man and he had a family and children to care for.

Simon rose from the ground and walked home.

"Welcome, my husband," Saratu greeted her husband as he walked into the room.

Simon looked at his wife and nodded his head unable to talk.

His children came out shouting, "*Baba oyoyo*". Simon picked up all 5 of his children one by one and gave them each a big hug. Simon had been married for seven years and he and Saratu had jumped straight into having children. Saratu was pregnant with the 6th, and it was apparent that her time was very near. She sat in front of the flames; her feet opened wide with the pot in between. Her pregnant belly filled the space but she still somehow managed to bend over and stir the *tuwo* until it formed a thick consistency with the large wooden spoon in her hand. She took the cracked gourd and molded the *tuwo* in the pot before she dropped it in the plates in front of her.

She served a large portion in a big tray and poured the okro soup on it. Setting it down she called Mariam the oldest child who carried it away to eat with her siblings.

She carried another bowl and waddled over to her husband and set it down on the floor.

“My husband, are you okay? You have been so quiet since you came home.

Simon looked at the floor in front of him. He had no appetite and did not even think he should eat any of the food. When would he be able to provide food for his family again? He shook his head deeply saddened at the thought. Maybe he was a failure of a man.

Simon did not feel Saratu move which considering her circumstance was a miracle. Suddenly she was next to him, holding his hands.

“What is it?” Her voice heavy with concern, “Talk to me, please.”

“I got fired today,” he blurted out.

Saratu kept quiet for a moment and then she said smiling, “That's okay. It's not the end of the world. We will find a way.” After a moment she added with forced humor, “Haba, Is that why your face is so long. Please smile I do not want to be around grumpy people”.

They sat like that for a long time looking at the flames, comfortable silence between them interrupted only by the sounds of the night around them. Eventually, the fire died down and left nothing but blackness. The blackness reminded him of the darkness in the mines.

“I will go back to the mines tomorrow,” he stated.

Sarartu gasped, shocked at his remark but even through the darkness, she knew there was nothing she could do.

Early the next morning Simon woke up and went into one of the empty mud barns. He pulled out a dirty and dusty sack tied at the mouth with an old string. He didn't open it. Inside it was his mining equipment; a shovel, pitchfork, matches and a sieve. He slung the sack over his shoulder and walked towards the mines. The roads were empty apart from a few other miners like him heading down to MaiSamari¹³. Simon heard a voice call him and he turned around.

“Yangadi,” Simon called out to his friend that called his name. “How are you?”

“I’m fine oh.....things have been hard. You know this Buhari thing, I voted for him, thinking there would be change but things are just worst.”

Simon nodded his head in affirmation. Yangadi continued, “The hunger is worse this year than it has ever been.” “The president say’s he is tackling corruption and there are all those cases of houses full of money but none of it is reaching the poor man like us. The twins were sent home for non-payment of school fees last week and they also need to pay examination registration fees”.

Simon nodded in agreement. He understood what Yangadi was saying.

¹³ Mining town

He continued “If it's not because of this climate change thing we would have all frozen to death now because one part of the wall at the house collapsed after that last heavy rain. My mother is sick and my brother is marrying one girl from Gembu. My brother, I need plenty of money to be able to get out of my financial problems.”

“Ba damuwa¹⁴, God will provide” Simon replied with what he thought was a reasonable response.

“God.....where is God when you need him”? Yangadi responded sarcastically.

“My friend, why are you here? I thought you had been upgraded and were working at the forest reserve?

"Mandi got me fired yesterday and let's say my problems are insurmountable as well. I need to work sharply.”

The sun had cracked open a lazy eye and the rays were pushing themselves through the mist. Even though visibility was poor they knew where they were going. Simon and Yangadi had been on this road so many times that they walked with confidence. They passed the farmers with their hoes and the women with their baskets on their way to pick tea at the plantation. Scattered greeting and sleepy conversation filled the area.

Simon looked at the bleak land in front of him amidst the general lushness of the Mambilla. There wasn't a single tree or shrub in sight only heaps and mounds of dirt excavated in the attempt to dig blue sapphire, topaz, gold and cobalt. It was unimaginable that this barren looking land had anything worthwhile left to take.

¹⁴ No problem

From protecting the forest and the natural resources as a reserve protection officer to the indiscriminate and dangerous excavation of mineral resources. Simon pushed the thoughts from his mind and went down the narrow shaft into the mine all the while praying as he dug that today would be the day that he would strike it big and be rich.

That night Simon went home utterly exhausted. After months of working on the reserve, his body had forgotten the aches and pain of mining. The first week back had been a nightmare. After spending hours every day on his knees, stomach and sides in tight, cramped space, his back burnt from pain and he felt like it would catch on fire. He imagined that the fire from his back would explode and he would die. It wasn't just the pain; there was the dusty polluted air, the cyanide and the possibility of a mine cave-in.

But everyday he dragged his dirty and aching body home and when he got to the door he mustered all his energy and shouted in a jovial manner: "Where are my kids!"

His children rushed towards him all seeking for his attention and a hug. He dutifully lifted them up one after another momentarily ignoring the aches and pains of his back and joints. He saw his wife in the corner, her face sweaty and exhausted from the weight of her swelling belly and the intrinsic of raising five kids. Saratu watched him, the concern and love were evident in her eyes.

"And how is my adorable wife?" Simon said. He wanted to hold and embrace her, but he was aware of the dust and dirt of his body. He could smell his armpits, and it was not pleasant.

"How is my husband?," Saratu asked in response. She walked towards him. Her walk an awkwardly graceful gait.

"God willing, I am fine," he said and Saratu nodded in response.

"Come and eat," she said. "There is food."

Simon wanted to bathe, but the aromatic smell of food made his stomach growl. With a little persuasion he navigated to the mat, quickly washed his hands in the bowl of water and eagerly swallowed large lumps of tuwo to fill the gnawing pain in his stomach. Realizing his voracious appetite Saratu gave him some of her food feigning that it was left over from the kids' meal. He ate it all, but that did not take away the look of hunger in his eyes.

Simon's appetite grew and Saratu increased his quantity of food. But, they were running out of food. It had been several months since Simon gave Saratu any money for food. Despite her growing stomach, she lost weight and the children were cranky and whiney.

Simon had been working in the mines for several months now and still there was nothing. He was embarrassed at his incapability to care for his family like a man. He borrowed some money from his friend Yangadi and promised to pay him back with the first big hit he made at the mines. Ashamed he came home later than usual so he would not have to see the faces of his children. He peeked into the room where they all lay down. Limbs intertangled, Suki the third born sucked his

thumb despite his mother's attempt to discourage them by rubbing bitterleaf on it. He admired the way they slept contently and deeply, unlike him.

Simon had always known that he wanted to be a father. When his first child was born the villagers said he cried more than the newborn baby. His joy was incomparable, and even when his wife gave him four daughters and no son, still he laughed and cried for joy. The sons eventually came, and Simon never wasted an opportunity to tell his children how much he loved them.

Simon laid down to sleep and tossed and turned as usual. Despite his fatigue, sleep eluded him, and when he slept, he was plagued with images of explosions and blown up limbs. “Nooooo,” he shouted over and over rolling on the mattress as if possessed. Saratu reached out and tried to hold his hands. Breaking free, he frantically touched her legs and hands before he touched his legs and hands. “I’m alive, I’m still alive,” he muttered to himself. Tears seeped out of his tightly shut eyes.

In the morning he went to the mine and Saratu never mentioned this to him.

.....Three weeks earlier.....

Yangadi ran around the camp shouting “*Za mu sa nakiya.*”¹⁵ All the miners walked a few miles away and watched Yangidi as he lit the explosives and ran back towards them.

¹⁵ We are putting an explosive.

They all heard the explosion. The ground shook and the dust rose. The miners all walked back.

A cry cut through the dust. The loud, sad, resigned cry of a person that knows that he is about to die. There was a boy covered with blood. His leg clumps of flesh around him.

The boy was too young to be in the mine. He was ten maybe 11 but young nonetheless. He was trying to be a man and help his father who was sick with pneumonia. At ten he had the arms of a man ripped and muscular from the endless movement. He hardly smiled, but he worked hard.

That day his unsmiling face was sad and fearful. He cried and cried until his mouth opened in a quiet wail; his voice drained from excruciating pain. His small frame shivered and shook till he finally lay quiet.

TALES BY MOONLIGHT

Defining what you can't describe and Explaining what you do not know

Talitha: Ga mu nan, Ga mu nan.... ku zo ku ji ta! (here we are, here we are..... Let's hear it)

There is a town called Kowa. The people in Kowa are strong and hard-working. For many years, they farmed the land and reaped in a bountiful harvest of corn, cassava, beans, and pumpkins. Their children and wives were robust, healthy and happy. The pasture around the village grew lush grass, and their cows and livestock grazed there. The villagers were plump and healthy.

The villagers had enough to eat, and every year the villagers would sell a portion of their crops in the market so that they could pay their children's school fees and buy goods that they could farm from the market.

Now you see next to them was a forest. It spread as far as the eye could see, through the mountains and down in the valley. Tall and strong the trees grew reaching to the sky.

One day some men came to the village.

"*Barka*¹⁶," they said greeting the villagers.

"*Welcome, sannu da zuwa*¹⁷,".

"We are businessmen," they said. "We are interested in buying some of the trees in your forest."

¹⁶ Hello

¹⁷ Welcome

The people in the village looked at each other and suddenly realized that they could sell the trees and get even more money to meet some of their needs and even their want.

Faced with this scenario that I had presented my interviewees, these were some of the sample responses.

Sample Respondent1: *We won't allow him to have the whole tree but, what I can do for him is I will go and let him have a part or bark which will not do any damage to the entire tree and get it for him. We won't let him cut the whole tree unless if we have order from above.*

Sample Respondent 2: *If he wants it and at that time I have no problem that is to say I have a lot of money to take care of myself and my family and if I have the authority to allow him and nothing will happen, I will let him have it. But if not I won't allow him to do that.*

Sample Respondent 3: *I won't agree for him to cut the trees because by so doing the place will become a desert. When it becomes a desert, it will affect us so I won't allow that.*

What you see above was an activity that I carried out in the field during or after my interviews. The aim was to engage the respondents in creatively thinking about how they will handle their natural resources. I was interested in seeing what they understood about sustainable management of natural resources. As such, I probed the respondent by throwing out variables and what if scenarios like:

Scenario: What would the outcome be if you were an impoverished community?

Sample Respondent 1: *That changes everything. In that case, I will sell them*

Scenario: What would you do as the resource diminished?

Sample Respondent 2: *(Laughter)... in this situation, not all people will agree to clear all the trees.*

Scenario: How would you ensure that the distribution was fair? How would you include unwilling participants?

Sample Respondent 3: *There are few people who will sell the trees to buy food, pay fees but there are still those who are knowledgeable about the importance of the forest. If it is me, I won't agree to clear the forest.*

The Activity: Tales by Moonlight

Tales by moonlight is based on a popular African custom common in rural areas where people of all ages sit around the fire eating roasted maize or groundnuts and tell stories. Many of these stories are passed down from generation to generation in this sacred ritual of storytelling. Stories are ways in which people see and describe the world. Many stories are on civic education, man's interaction with nature and social concerns. In the absence of a storyteller and a starry sky, there are television shows in urban areas to carry out the tradition. Children learn moral life lessons through the eyes of the tortoise, hyena and mosquito.

When I was in the field over the summer, I conducted this activity with the people in my host community. After going through the interview questions, I would say something like, "Today we are all going to tell the story. I will start, and you will finish. It can be anything you want but think before you answer and pretend it's really happening".

Sometimes during the interview, respondents would say sustainability or development to me. I felt it was a word that they were strategically using on me. No doubt a word they had heard before and most likely flung at them by NGO staff or government officials.

The activity really got me thinking about what sustainability really means to the typical African? Is it attainable? Most importantly how can it be practiced? I wondered if we were using the word sustainability only as a buzzword or if it really meant something.

Buzzwords

Nobody trying to be influential can afford to neglect the fine art of buzzwords. According to the Merriam-Webster dictionary, a buzzword is an important-sounding usually technical word or phrase often of little meaning used chiefly to impress laymen. Images conveyed by simple terms are taken as reality, and words are increasingly loaded with ideological symbolism and political correctness. The language question may seem innocuous. It surely is not. Why make a fuss? The reason is that the term we use help to share the policy agenda (Cornwall and Eade, 2010).

Sustainability is one of a plethora of development buzzwords with contested analytic value, but a strong positive resonance. Other contested terms are empowerment, participation, good governance and capacity building (Cornwall and Eade, 2010).

Sustainability in Local Understanding

“What the hell is sustainability in Hausa,” (the local language) I pondered to myself, already frustrated.

My interview guide said ‘dorewa’ but even I found that difficult to understand. It was not a commonly spoken Hausa word. I’d had my interview guides professionally transcribed and had consulted dictionaries, but I knew something was wrong. When I spoke the word, I got blank and confused stares and I would launch into an exposition of the word sustainability.

The direct translation of 'dorewa' is 'to tie something,' that is to suggest that sustainability means to keep something tied and locked away from interference.

Even in English sustainability is an ambiguous word to define. The Brundtland Report defines sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Griggs defined sustainable development as development that meets the needs of the present while safeguarding the earth's life support system on which the welfare of current and future generations depends (Griggs et al., 2013).

The concept of sustainable development was first launched onto the international political agenda at the United Nations Conference on the Human Environment in Stockholm in 1972. Yet in scholarly and political circles more than three decades later, it is still highly contested whether mankind is capable of reconciling economic growth with environmental pressure. The sociologist Redclift noted: "like motherhood and God, it is difficult not to approve of it. At the same time, the idea of sustainable development is fraught with contradictions" (M. Redclift, 2002; Michael Redclift, 1993).

Through the years sustainability has emerged as a global keyword that signified modernity. Development, on the other hand, implies industrialization, urbanization and the intensification of resource use, the costs of which have often been externalized at the expense of the environment. Sachs says, "for a purist, the terms are diametrically opposed, sustainable development

representing a threat to sustainability on account of its 'dangerous liaison' with economic growth" (Sachs, 1991; M. R. Redclift, 2006).

The concept of sustainability regularly used in rural community development stems from the Sustainable Livelihood Approach (SLA) inspired by Brundtland. The SLA defines a livelihood as sustainable when "it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets, both now and in the future" (Scoones, 1998). This has translated to a focus on projects that will be ongoing after introduction or conception, do not unduly deplete the community's natural resource base and involve at least one of the following: environmental protection, eventual financial self-sufficiency or community involvement in project planning and implementation (Mazibuko, 2013). Self-sufficiency as fiscal and moral concern continues to be the defining factor for sustainability.

What's in a word?

Like development, the word sustainability may be a concept with near-universal currency but not universal consistency. Similarly, development language today is often contrary to the linear tropes in development thinking. Many familiar words evoke a comforting mutuality, a warm and reassuring consensus, ringing with the satisfaction of everyone pulling together to pursue a set of common goals for the well-being of all. The term sustainability like poverty reduction, participation and empowerment epitomize this character (Cornwall & Brock, 2005).

Sustainability is a word, concept or term that does not only convey its own meaning but also an assessment of it or what you understand from it in relation to development (Mcnamara, 2017). Sustainability typically manifests through global environmental concerns (like climate change) and localized financial self-sufficiency. Sustainable development as a moral good and a development necessity encourages developers to ignore the structures, histories, and processes that have led to, and continually reinforce, inequitable global and local distribution of resources (Springett, 2013) and to favor approaches that emphasize development.

Very often sustainability is defined from a top-down, ethnocentric perspective. Thomas McNamara in his research on sustainability said that the people imposing sustainability (NGO's, government) drew upon their own differing moral, social and economic structures when interpreting local sustainability. These outside perspectives did not fit with local realities. Thus, it was normal that when the topic was approached or discussed the local respondent was silenced, and dialogue was constricted.

It is not surprising that the concept of sustainability has thrived more in societies of abundance. This research in a poor, rural community offered me an insider experience into what it is like to live and depend on the environment exclusively for livelihood and survival. Add into the mix the issues of poverty, gender, institutions, policy, social class and status. In response to a question that I asked an expatriate respondent in regards to poverty making it harder for the community to manage their natural resources sustainably, she said:

Yes absolutely. In my country, no one is starving, so it's okay and okay for them to say okay let's have a national park, but it's very different here.

It is no surprise then that achieving sustainable development in many communities like Yelwa has been difficult despite a plethora of initiatives.

This has led me to understand that discursive concerns have interacted in and resulted in the different ways that the concept is understood. This chapter explores how the lived experiences of various users are created through their lives and everyday activity as they interact with the resource and with other resource users. I recount their responses related to sustainability and development and how community members and resource users create meaning for sustainability that incorporates different moral economies or sets of normative expectations concerned with obligations relating to the status in life, experiences, and livelihoods.

Sustainability Discourse from the Mambilla

What is Sustainability?

i. Sustainability is Remaining for the children

The futuristic concept of sustainability for many is translated into remaining for future generations. Children are a crucial component of the African culture and seen as a sign of wealth and influence. Inheritance is important and most parents want to hand down something to their children.

During a discussion a community member said it so well when he said:

Respondent: Yes, conservation will really be of great benefit to our children and us because they will make use of it (forest).

Talitha: How about if it turns out to be another man's son and not your biological child.

Respondent: It's not only for our biological children because all of them are ours.

We are protecting the forest for our children. First, when we heard about conservation, we were not united but now that we know that our children and we are the beneficiaries we stand by it. – community member

You see whether I am employed or not I must protect the forest because my children will grow to benefit from that forest one day. – community member

For some, management of the forest may not be directly related to ecosystem services but to the fact that their children will be employed there as long as the forest is managed:

Now, the community is happy having the forest as a reserve since the program has employed our children as security and they get monthly stipends. When we told them many years ago about the benefit of conservation for the future they did not take us seriously. Now they are enjoying the benefits. They are really happy. Their nonchalant attitudes have reduced. – community member

ii. Sustainability is.....Blank

Others do not understand what sustainability means.

*Talitha: Do you understand the concept of sustainability?
No I don't really....I don't.*

I don't really know what they want from this forest.

I can't really say

I don't speak English so I don't know what all the people that come here say and my son is not employed in the reserve

How do we Achieve Sustainability?

i. By Halting all Activities.

As incredulous as it sounds achieving sustainability for some means to refrain from all activities that involves and affects the natural resource. For a population that depends heavily on the

environment this will be a problematic and challenging task. The direct translation of the word sustainability into the local language supports this discourse.

To conserve the environment, we need to build the forest and raise some plant species like we used to do. Stop hunting, bush burning, cutting down trees and to improve beekeeping by providing more hives so that we can have a lot of honey to sell. – community member

There are strict trespassing rules for the reserve even though they are not fully upheld and enforced. The next two responders reply in what would be an ideal situation.

We stopped spoiling the things in it like cutting down the trees, cattle rearing, farming and hunting. So definitely the wild animals will return, we will have many trees and the forest will look better and better. We have plenty of medicinal plants and there is one plant that in the whole world it is only found here. – community member

Well, we have stopped everything. Nothing is happening here. Alhamdulillah (Allah be praised), if not for this project most of the things on sight would probably have disappeared, and most of us wouldn't be here. Moreover, the visitors we are receiving now we wouldn't have been seeing them. If you don't have all those animals and plant species would we have such? We wouldn't have had any. – community member

However, for a community that depends heavily on the natural resource this is not a realistic expectation in the least. It is irreconcilable in that context to assume that you can have both a healthy community and yet not utilize the most accessible means available to them.

ii. Through Financial Payments or Income Generation

For many, sustainability can only be achieved if there is some form of financial payment or income generation to enable them to provide for themselves and for their families. Preferably, this income should be generated from the resource directly.

Honestly, the only way that I think is gonna work given the community is who they are like I said is by using ecosystem services of the forest to provide income to the people directly and it's got to be obvious and there has to be a link between the wood and money. That's how I see it. - community member and staff at the forest reserve.

If you want to the community to manage the natural resources or the forest you will have to provide funding and have enough in other for the community to help themselves and to help other or to run some businesses. If not, the reverse is the case and people will destroy everything. - community member

Yes, if they will fund our projects then we will do anything they want. We can do it perfectly. Even now we support our manager, he is loyal so whatever he says we do.

A community member on staff at the reserve said:

Talitha: Do you think that they want to manage their resources and they can't?

Respondent: No, I don't think they are interested. They are waiting for the state government or someone else to do the work for them.

In discussing a past initiatives that had gone south with a respondent he said:

Yes, initially we work together and they just want us to be working and patrolling the forest so we will show that we are together. But we know that they give money but they don't give us so we stopped. – community member

iii. With Expatriate Supervision

However, for many sustainability can only be achieved with the supervision and presence of expatriate staff from the global North. There is a sense of helplessness exhibited by many and a lack of trust in the capacity and intentions of others exhibited below:

The community cannot manage and protect the forest. This is a new concept. They have not been adequately trained and they do not know a lot about it. – community member

Really if it has to do with the people even if they have the money they wouldn't be able to manage it. – community member

Additionally, many Nigerians (myself included) do not trust their leaders, which would explain the villager's comments cited below.

The problem is that even if the community is willing to do it, but there is at all no white man involved it will not work. You will see someone will come from Jalingo (capital city) as Director of Forestry and start cutting trees for the roofing of his house. Some people don't have a sense of reasoning. We are just fighting for ourselves we don't care to leave it for the next generation but if the white men are involved everybody will be afraid to touch it (forest). – community member

I don't understand how government operates. Though the forest belongs to Government. We trust NGO more than Government because Government personal can just force you his junior staff to sign a document that involves embezzlement and he walk away with the funds. – community member

As one of the few trans montane forests in Africa, the area is of high biodiversity importance and receives a relatively steady influx of researchers. No doubt these researchers talk about sustainable utilization of resources to permit continuity of their research. As such sustainability is something that is affiliated with western presence and has some advantages for them. The next two quotes suggest that sustainability is something that is not for them but for the western researchers that come to their village. Thus, what it is and who it's for is the same.

..... Ngel-Yaki is internationally known in the scientific community so if anything happens to it, it would look really bad. – community member

Honestly, we have been benefiting from it (conservation) because people come from England, American and New Zealand for this forest and we are happy with that. Even the country, (Nigeria) benefits from it through revenue not to mention us the laborers. We are still gaining from them. I am also an herbalist and I know the importance of different trees and how to use them. If they (Westerners) don't come it (forest) would have been fading off and people would have turned the place into hunting and farming arena. - community leader

Last Note about Sustainability in the Mambilla

The tales by moonlight activity demonstrates how sustainability is specific to individual communities and resource users as they draw upon differing histories, cultures, norms, and economic concerns when using the term sustainability and sustainable development. This explains why the terms are difficult to describe and often in local languages the term often supports colonial notions.

It also demonstrates the sense of helplessness exhibited by many and a lack of trust in the capacity and intentions of others to work collectively towards a common goal. Local communities may or may not have the capacity, will or values to manage their surrounding environment, but this does not transfer automatically into sustainable management. No matter the specific situation it can be overwhelming and this is a good avenue for capacity building. The ability for the local actors to pool resources and knowledge is a crucial aspect of natural resource management.

In a village like Yelwa where there is no electricity discussions about solar panel and wind vanes are non-essential when women and children fetch water from the well, adequate taps and water saving toilet fixtures make no sense. When all around them is green hills and pasture incorporating green zones into the landscape is an absurdity. When they build like their parents before them green architecture is secondary. Sustainability means very little to people who are struggling to survive. The futuristic view of sustainability goes only as far as the next meal.

Today sustainable development, especially in local communities, needs to be linked to new material realities. In my research, I discovered that in Yelwa those material realities are associated with the economy. The people desire to see a direct link from the resource to their financial situation. The inability for this desired situation suggests that they cannot and will not conserve or sustainably manage what is meant for their utilization. This is synonymous with the representation of sustainable development as nested concepts instead of pillars. The model of the nested ideas starts with a thriving economy in the heart which produces a healthy and prosperous society that is willing to support the earth's life support system.

Understanding and working with this knowledge is critical because at its heart, sustainability is about people; people caring enough to act. And to get to this stage the people of Yelwa want financial stability. We need to talk more about the people and how we can create opportunities for financially self-sufficient and only then we talk about sustainability.

ABRUPT DEPARTURE

“You all have to pack your things and leave Ngel Yaki tomorrow. It is no longer safe here and I do not want to be held responsible for you.”

Those were the words that left me speechless.

Hours later I was packed and looking for a vehicle out of the village. Rushed and perplexed the journey to the capital was long and scary. It was hard getting a driver that was willing to travel with all the uncertainty on the road but, the commercial drivers also realized a business opportunity and promptly doubled the transportation rate. It was either pay their price and get to safety or bargain at your own risk. The road was filled with check points manned by vicious looking officials and vigilantes. They were all armed and prepared to deal with any situation that could lead to further out burst of violence in the community. Occasionally, a vehicle with bullet holes or smashed windows would speed by adding to the suspense and fear. By the time we got to Jalingo, the capital city, a state of emergency had been declared in the Mambilla.

.....*The day before...*

I laid on my bed reading when the loud sound of a motorbike interrupted me. The light of the bike flashed into my dimly lit room. It disrupted the insects flying around the light bulb enjoying the warmth. It was louder than the high pitch screech of the cricket and the croak of the frogs, the sounds of the night I had become accustomed.

The sound of the motorbike was alarming. Like most Mambilla nights it was foggy and visibility was poor. The ride up and down the mountain was slippery and I knew that whoever had risked coming out at such a time as this must have felt a sense of urgency and importance for his mission. "Talitha, *kuna ina*¹⁸" Mandi's deep voice boomed from outside asking where we were. "Shedrach, Lydia, Murna." Mandi called the names of other residents in the house.

"I'm coming," I answered standing up from my mattress on the floor and opening the door to my room. It screeched in protest. As if to say don't leave....sit.

Mandi was a respected man in the community and my host. He made it possible for visitors and researchers like me to get around easily. He spoke all the major languages in the area, knew a lot of people and was super helpful.

I walked to the front of the house that I shared with a group of students from the State University that were collecting data and saw Mandi sitting on the back of his bike. Like most Mambilla men, Mandi was huge and tall. He demanded authority and respect. Rightly so because he was the head of the Montane Forest project and a well-respected member of the community.

"Toh¹⁹, you all have to pack your things and leave Ngel Yaki tomorrow! It is no longer safe here and I do not want to be held responsible for you."

¹⁸ Where are you?

¹⁹ Well

Silence.

“Can you hear me? Trouble is brewing and I do not want any of you to get caught in the middle. I do not want any problem oh.....please go inside and pack up your things.”

But, I’m in the midst of my research, I thought. I have an important interview tomorrow. I can’t afford to leave the area right now. Can’t I just stay, keep a low profile? How are we sure these aren’t rumors? A million questions raced through my mind.

I opened my mouth to talk and so did everyone else. We all spoke at once asking questions, what about our work and research, should we be worried about our safety? What was going on?

Mandi explained, "The farmers and the Fulani pastoralists are at it again." Fulani cattle trespassed into a farmer’s farm and destroyed his crop. In annoyance, the farmer and his brothers challenged the Fulani man, and fighting erupted. Many people have already been killed and injured.

In a flash, I remembered feeling the tenseness in the air when I went into the village earlier that day.

It was a Sunday morning and while Christians worshiped in church, other people usually just stayed at home. Like most cultures, no one goes to the farm or engages in hard labor on Sunday. But that

day there were a lot of people outside sitting on culverts, outside shops, on mats, on tree trunks, and on motorbikes.

However, unlike most days the sun was shining brightly and there did not seem to be any rain in the radar for that day. I assumed that everyone was sitting down outside to enjoy the sunny weather. Many people were also taking advantage of the weather and drying items outside.

A few miles from where I stood there was a check point and a man was seated there with a gun in between his legs. A long iron spike was blocking the road and every time a vehicle approached he would stand up and look into the vehicle asking questions and searching suspicious items. Once he was satisfied with their response, he would drag the spike from the road and grant them passage. Again, I assumed it was because it was Sunday and security was high because of the possibility of an attack. That was the norm in most parts of the country.

Further down the road there was another check point. The khaki clad soldier stood looking menacingly through his dark sunglasses.

Oblivious to what was happening at the time, I met my research assistant in his shop. I had arranged interviews with some female respondents and was looking forward to it. Mohammed my research assistant shook his head. "The community is bereaved; I do not think they will want to talk with you now. Today is also a day of rest. Why don't you go home and rest"? Nodding my head in agreement, I sadly turned around and went home.

That was the beginning of the end for me and my stay in the Mambilla.

Love and compassion are necessities not luxuries. Without them humanity cannot survive
- Dalai Lama

CONCLUSION AND RECOMMENDATIONS

Natural resource management and conservation are typically informed by science. It is a noble practice embracing a commitment to ensure that human needs are fulfilled in a way that allows the diversity of earth forms to flourish. Recently, earth forms have continued to deteriorate as our human activities have driven species to extinction and diminished other critical life-sustaining ecosystem processes. Therefore, the quest to achieve sustainability has become a high priority and urgent, often handled without full consideration, to the neglect of other critical moral concerns (Ramp & Bekoff, 2015; Wallach, Bekoff, Batavia, Nelson, & Ramp, 2018).

Achieving conservation success requires a fundamental organization of how human beings view and interact with nonhuman nature. If we agree that the task of conservation is to actualize a human relationship with nonhuman nature that is not only sustainable but ethically appropriate (Moore & Nelson 2011) it is important that individuals not be excluded from the scope of conservation concerns (Wallach, Bekoff, Batavia, Nelson, & Ramp, 2018).

The seven resource users in the community I studied all have unique characteristics and needs. Traditionally, entire societies have survived through hunting and foraging. Today, many animals are extinct because of overhunting, which has allowed the rapid increase in the number of cattle, much to the benefit of the Fulani pastoralist whose cattle graze without fear of attack from lions

or hyenas. However, the farmer has dealt with population increase by also expanding his land for agriculture. This is the same land that the pastoralist wants and the demand from both has led to bloodshed. Additionally, there are the loggers who cut the trees the women use for firewood and whose mass cutting of trees leads to the destruction of other non-timber forest products. Then there are the cattle who trample the rare plants used by the herbalist for traditional medicine. And the miner who, despite the risk of being blown into a thousand pieces, digs deep into the ground for precious stones. In the process, he destroys the land and makes it unsuitable and unsafe for anything else. The list can go on and on.

From the stories there are five destabilizing factors among the resource users that contribute to the inability for community management to occur. Some of these are:

1. **Conflict and conflict management** – This is a major issue and the most important point for me personally. Conflict readily arises between the different resource users and has been unresolved over the years. My abrupt departure from the community before my planned date was also because of conflict between pastoralists and farmers.
2. **Historical rights of people to the land** – Many communities have communal or customary rights to the land which are in conflict with the rights assigned to the conservation area or reserve by the government or ruling authority. The Mambilla is a classic example of this. The original inhabitants of the reserve were displaced and are denied access to the land even though they were never compensated for relocating (Ite, 1996; MacDonald, 2007).

3. **Weak Governance** – The current government and institutions in Nigeria are weak. Additionally, grassroots institutions are under resourced and lack skills and capacity in management and facilitation (Odera, 2009). As such in the Mambilla grassroots competence is low because of the lack of professionals and specialists. When they occasionally come for short projects, the community tends to have high expectations and is over reliant on them (Leach, M., Mearns, R., & Scoones, I. 1999).
4. **Mindsets, grounded stereotypes and resistance to change** – Community dynamics are a complicated and emerging democratic space in resource management. It is either highjacked by influential parties or dominated by internal squabbles. Similarly, resource users are pessimistic and feel threatened with loss of status and hence resistant change (Odera, 2009). This is a phenomenon that I observed with all the resource users.
5. **Reality and expectation of socio economic development** – Economic planning and management backed by equitable resource allocation is an important input for effective management. Deficiencies in this regard have created a tendency for local communities in most parts of the country to depend on external institutions and agencies for development initiatives which could have been the responsibility of the community (Ite, 1996) As such there is a tendency for the community to be treated as passive recipients of project activities (Leach, Mearns, & Scoones, 1999).

Additionally, resource management is a process that takes time and commitment and supernatural amounts of patience are needed. The time lapse between initial project planning and

implementation can lead to discontent and loss of confidence in the project by the community, especially with respect to proposed community development activities (Ite, 1996).

So, how do we unravel that? How do we facilitate change? How do we deal with all the underlying issues of religion, and ethnicity?

Recommendations to create an Enabling Environment that Contribute to Community Management

There is a strong argument that technical assistance, government involvement, private sector involvement and continued research will contribute positively to community management. Many of my stories demonstrate the need for this type of intervention by giving examples where the above mentioned can address particular issues. Examples of these types of interventions are:

1. **Land Tenure Rights** - Nigeria's land tenure laws are archaic, complicated and long overdue for a comprehensive amendment. They have not been reviewed since 1978. Presently, the state owns all of the land and has the right to seize any property they desire. Additionally difficulty is securing land document under current land tenure laws makes it's impossible to know which land belongs to the farmers and which land belongs to the pastoralists, and this contributes to the conflict. (Agbola & Agunbiade, 2009; Bello, 1962; Mabogunye, 2010). 'That night' the story of the farmer illustrates how weak land tenure laws resulted in the death of a farmer.
2. **Financial Support for Local Industries**- The section on non-timber forest products illustrated the importance of this sector. However, reducing dependency on the natural

resources is essential and can be achieved by diversifying the local economy. Support for cottage industries in areas like honey and bees wax can lead to viable business opportunities for the community. A sizable investment in the mining industry to ensure standard and safety to add value to mined stones will benefit the community more than how it exists today. Additionally, support and mentorship for entrepreneurs from the public and private sector will create jobs for the local community and address widespread depletion of natural resources.

3. **Research** – The chapter on the Fulani pastoralist demonstrates the urgent need for important research on how to restore grassland and pasture in the North. Research in the investigation of hardy and drought resistant grass varieties would also be beneficial. Additionally, research into the creation of ranches and ways to protect water sources and sustainably manage farmlands is also important. Because the pastoralists are generally considered mysterious and evasive an insider research approach would be highly beneficial to understanding them and their needs.
4. **Participatory Decision Making** - For effective participation, empowerment of local people in decision-making process has been identified to be very crucial. According to Macura et al. (2011), the system of governance in forest resources management includes structures and processes, through which partners make and implement decisions and distribute power (Ene, 2013). Throughout the research many of the community members indicated unhappiness as to how they were excluded in the management of the natural resources

including the reserve. Effective participatory decision making by the community members is crucial to the prevention of illegal forest activities through appropriate monitoring and evaluation by community members and users.

5. **Financial Contribution to Community Development** – Being in the Mambilla is like stepping back in time. Its remoteness from large towns has caused it to be neglected during infrastructural development of other towns and cities. The absence of electricity, running water, and internet access are major issues for the community. Development initiatives like road construction, health centers and educational projects need to be prioritized.
6. **Education and Awareness in the Community** – Context based education and awareness for adults and children is important. A lack of understanding the importance of resource management is detrimental but beneficial when the community is educated and empowered on the many advantages (Odere, 2009).

To be clear, this list is not a magical recipe for success because there exist a variety of factors that inform and dictate such projects. However, there is evidence that it holds promise as long as communities and governments are committed to making these strategies work.

However, these are not my contributions to this research. My contribution is to stress that our commitment to making this work is based on our understanding that, the earth, the soil, and every human being is deeply connected to one another and unless we acknowledge that connection and

recognize the power that we have to change it, little will change. Untangling the web of complexities that engulf us today in our communities calls for a different, unconventional approach. This integrated approach suggests that in addition to technical assistance, research and government involvement natural resource management should be approached through the heart rather than the head, by facilitating practices that encourage love, friendship, generosity understanding, solidarity and empathy. This is an essential step for creating an enabling environment that can instigate good governance, transformative policies, strong institutions, peaceful co-existence and responsible followership amongst others. The latter are all soft skills that originate from the heart. It is a skill that needs to be nurtured and with skillful facilitation the awareness of our common ground which is the land should lead us to meaningful dialogue. Without love and compassion there will be no commitment to making any other strategy work.

I do not mean that we should hold hands and skip and prance all day. Rather, I am talking about hard love; no sentiment allowed. Love that is willing to be critical of policies and politicians that are inefficient and love that is ready to make a change. Friendship that understands that wrongs must be made right and truth and justice has a role to play in attainment. Solidarity that practically demonstrates social justice and equity that does not stand for some and not others but realizes that we are one whether we farm the land or rule the land. It necessitates change and transformation which further compels government and yes, even communities to institute policies and laws that change and bring about greater freedom and equality.

It is not easy to practice love when your crops are trampled on by cattle, friendship when you know you can be killed for farmland, generosity when the tree being cut is the same tree that you pick branches off, understanding when they don't understand that you are one with the land, solidarity or empathy in a world whose systems are geared for the exact opposite. But that does not mean we should give up or not try (Meadows, D. H., Meadows, D. L., Randers, J., & Behrens, 1972).

It sounds impossible but, it is possible.

As a community of people who care about natural resources and community, we should ask ourselves what kind of natural resource we want to conserve and what type of character we want to manifest. Because at its heart, sustainability is about people; people caring enough to act. We need to talk more about the people and only then can we talk about conservation.

I sit alone in my room, my fingers aching from typing and rewriting. One year ago, I was outside in the mountains collecting data and now I've reached the end of my research adventure and wonder now what?

I unfortunately don't have any groundbreaking theory or discovery. All I can offer you have heard before. So, when I am asked "How do I respond to your research"? or "How can we sustainably manage our natural resources"? I will answer with a question. "How do you think that you can get people to care for others"? When we care for each other it pushes and propels us to want to do

more towards meeting the needs of others. When we care for humanity as we do for the land then we will be moved to action. If we don't care we will be fine to cross our hands and watch while the conflict escalates and our planet remains a ticking time bomb.

*There is no panacea to solve all conservation problems. Each problem is unique and each community presents its own challenges not only socially but also, environmentally –
Elinor Ostrom (Ostrom, E. 2007)*

APPENDICES

Appendix A: Community/ Forest Users Interview Guide

Introduction

Informed Consent

Questions

1. How long have you been a (mention occupation)?
2. How/Why did you decide/choose to be a (mention occupation)?
3. Has the amount of (mention resource he uses) changed since you started (noun e.g. hunting, trading in firewood/timber)?
4. Do you know why?
5. How have you benefited from this?
6. Has your household income improved or declined? Can you give an example of this?
7. Do you know what (mention organization) is doing in your community?
8. What do you think about CBNRM/ community management? (I will explain it in local simplified terms)
9. Can you tell me how you started conserving the forest? (probe for detail. Step by step account)
10. What do you think are/is the goal of the program?
11. Do you think the goals are likely to be achieved?
12. Are you part of what (mention organization) is doing in the community? (respondent may have answered this already)
13. If yes, why? / If no, why not?
14. How do you define success? (probe for sustainability)
15. Would you consider the project to be successful? (If the response was yes/no/both) In what ways is it successful/ not successful?
16. What are the factors that contributed to this success/ failure?
17. How do you think the program could be improved?
18. What do you like about the program? / What would you like to see in the future?
19. Does everyone have access to the forest? (probe for details on relationship between users identifying indicators for collective action)
20. Do restrictions introduced as a result of community management affect everyone equally?
21. If yes, can you give me an example? (probe for vividness and nuance)
22. If no, why not? (Are there ways they can improve this relationship to make it even better)
23. Is their conflict? What is the cause? How have you handled it?
24. Can you share a story or a memory about the forest?

Appendix B: Key Informant Interview Guide

Introduction

Informed Consent

Questions

1. How long have you been a (mention designation/occupation)?
2. How/Why did you decide/choose to be a (mention designation/occupation)?
3. Has the amount of (mention resource he uses) changed since you started (noun e.g. hunting, trading in firewood/timber)?
4. Do you know why?
5. How have you benefited from this?
6. Has your household income improved or declined? Can you give an example of this?
7. Do you know what (mention organization) is doing in this community?
8. What do you think about CBNRM/ community management? (I will explain it in local simplified terms)
9. Can you tell me how you started conserving the forest? (probe for detail. Step by step account)
10. What do you think are/is the goal of these program?
11. Do you think the goals are likely to be achieved??
12. Are you part of what (mention organization) is doing in the community? (respondent may have answered this already)
13. If yes, why? / If no, why not?
14. How do you define success? (probe for sustainability)
15. Would you consider the project to be successful? (If the response was yes/no/both) In what ways is it successful/ not successful?
16. What are the factors that contributed to this success/ failure?
17. Can you tell me about past attempts?
18. How is this different? How is it similar?
19. How do you think the program could be improved?
20. What do you like about the program?
21. What would you like to see in the future?
22. Does everyone have access to the forest? (probe for details on relationship between users identifying indicators for collective action)
23. Do restrictions introduced as a result of community management affect everyone equally?
24. If yes, can you give me an example? (probe for vividness and nuance)
25. If no, why not? (Are there ways they can improve this relationship to make it even better)

26. How do you think that people in the community view forest management among users?
Among the community? With organizations and third parties?
27. Can you give me an example?
28. Are there ways they can improve the relationship?
29. Is their conflict? What is the cause? How have you handled it?
30. Can you share a story or a memory about the forest?

Appendix C: Organizations/ External Stakeholders Interview Guide

Introduction

Informed Consent

Questions

1. When did you start working here?
2. What inspired/motivated/ made you to start community management in Ngel Yaki?
3. Has the organization been part of similar work elsewhere?
4. Can you describe the state of the forest before you started working there?
5. Can you describe the state of the forest now?
6. Which alternative livelihoods and programs did you introduce to the community
7. Which livelihoods do the community engage in the most?
8. How did you decide which one to introduce?
9. What role did the community play in deciding?
10. What are the goals of the CBM program?
11. Do you think the community understands that? Can you give me an example of that?
12. Would you consider the project to be successful? / Do you think you are likely to succeed?
13. Which programs do you consider to be the most successful?
14. How do you define success? (probe for sustainability)
15. Would you consider the project to be successful? (If the response was yes/no/both) In what ways is it successful/ not successful?
16. What are the factors that contributed to this success?
17. How do you think the programs could be improved?
18. What do you like about the program? / What would you like to see in the future?
19. Does everyone have access to the forest? Is it fair? (probe for details on relationship between users identifying indicators for collective action)
20. If yes, can you give me an example? (probe for vividness and nuance)
21. If no, why not? (Are there ways they can improve this relationship to make it even better)
22. Do you target particular groups for specific programs? Is everyone given the opportunity to participate?
23. If yes, can you give an example on how you do that and what it looks like?
24. If no, can you explain why you do that?
25. How do you think that people in the community view forest management among users? Among the community? With you and other organizations and third parties?
26. Can you give me an example?
27. Are there ways they can improve the relationship
28. Is their conflict? What is the cause? How have you handled it?

29. How do you think the program could be improved? / What would you like to see in the future?
30. What are your future plans?

<div>CODE</div> <div>RESOURCE USER</div>	CONFLICT – This refers to any conflict in regards to use of the natural resource	LIVLIHOOD - This refers to any reference in regards to importance / dependence on the natural resource by the users.	RELOCATION - This refers to any discussion in reference to the displacement process and forced resettlement.	RESERVE - This refers to any reference in regards to the advantages or disadvantages of the reserve.	INTERACTION EXAMPLE – This refers to any example of a negative or positive interaction with another resource user.
FARMER		<p>If they want the work to continue/improve, and if they will agree they should return the land to the owners, because people were farming there and have gotten a lot of farm products but now they have come and stopped them from farming in that place, so it is good to return the land for them to cultivate it and have something to eat.</p>	<p>What I heard about the community moving from Ngel-Yaki to Yelwa was that the white man wants to preserve the forest. He doesn't want the animals to be killed or trees to be cut down. They now asked people to move far away from the forest. That was how people came to settle in here in Yelwa.</p>	<p>In Ngel there were lots of farm and forest products more than Yelwa. We use to fish there and there were herbs. We were not hungry.</p>	<p>Yes, there was a time that they prevented people not to enter and the Fulanis should come out from the forest, but they refused to come out. They are still there grazing in the forest, and even the elders are not happy with this thing because they stopped farmers farming in the forest but they allowed the cattle rearers to stay there because they have bribed them but all farmers have packed out. This place is important but cows are going in there and destroying what they have planted, the government should not allow them to stay there with their cattle.</p>

Table 5. Abbreviated code book with examples

Table 5 (cont'd)

<div>CODE</div> <div>RESOURCE USER</div>	CONFLICT – This refers to any conflict in regards to use of the natural resource	LIVLIHOOD - This refers to any reference in regards to importance / dependence on the natural resource by the users.	RELOCATION - This refers to any discussion in reference to the displacement process and forced resettlement.	RESERVE - This refers to any reference in regards to the advantages or disadvantages of the reserve.	INTERACTION EXAMPLE – This refers to any example of a negative or positive interaction with another resource user.
FULANI PASTORALIST	That is one issue I would like to correct. If you see a Fulani man handling AK-47, that is because cattle rustling has become so much that one wonders if there is security in the country. No peace-loving Fulani man would be carrying AK-47 and moving about.	Our herd is our life because to every nomad life is worthless without his cattle. What do you expect from us when our source of existence is threatened? The encroachment of grazing fields and routes by farmers is a call to war.....Whenever we turn we find the land reserved for our cattle to feast, taken over by farmers....It becomes difficult for our herd to move and graze without veering into crop fields. Once this happens the farmers confront us and we have no option but to fight back			

Table 5 (cont'd)

<div>CODE</div> <div>RESOURCE USER</div>	CONFLICT – This refers to any conflict in regards to use of the natural resource	LIVLIHOOD - This refers to any reference in regards to importance / dependence on the natural resource by the users.	RELOCATION - This refers to any discussion in reference to the displacement process and forced resettlement.	RESERVE - This refers to any reference in regards to the advantages or disadvantages of the reserve.	INTERACTION EXAMPLE – This refers to any example of a negative or positive interaction with another resource user.
HERBALIST	<p>The main problem we have here is some people are liked better than others , because they force farmers, miners, hunters out of the place and leave those cattle rearers living in the place and we are not happy about that because this is where we used to get our food we left our farms and plants there and we have no compensation from them and as a result of that you will be forces to look for alternatives but had it been we have been employed their it would have been better.</p>	<p>Honestly there are some tree and plants that am always using in this forest, I even don't want anyone to come close to them because they are part of my entire life.</p>	<p>Yes, they said, forest have collected the land forestry and road have come here, and it is better we come close to the road, and leave the forestry and when we look at it that the road is coming here, we then move here close to the road</p>	<p>Honestly yes, we have been benefiting from the forest and everything nature gives because I am an herbalist and I know the importance of different trees and how to use them for healing. Now we can't go there again.</p>	<p>If anyone want those plant definitely I won't allow him to go close and even get them talk less of cutting them. I planted some and also found one farmer removed it and planted some cassava. Stupid cassava. I removed all of the cassava, and made the farm rubbish. I was so angry.</p>

Table 5 (cont'd)

<div>CODE</div> <div>RESOURCE USER</div>	CONFLICT – This refers to any conflict in regards to use of the natural resource	LIVLIHOOD - This refers to any reference in regards to importance / dependence on the natural resource by the users.	RELOCATION - This refers to any discussion in reference to the displacement process and forced resettlement.	RESERVE - This refers to any reference in regards to the advantages or disadvantages of the reserve.	INTERACTION EXAMPLE – This refers to any example of a negative or positive interaction with another resource user.
TIMBER EXTRACTORS/LOGGERS		<p>Yes, cutting trees is what I use to take care of my family. I borrow the saw from X and buy petrol and engine oil. So, after I give him something (money) I keep the rest for my family.</p>	<p>No, they did not give time. When you finish building, then you can move. When someone finish building he moves here, when some finish he move here, so when you see you are the only one left, you will quick finish your building so that you can come too and meet your relations.</p>	<p>The forest is a factor of prime importance in the economic, social, and physical balance of the world. Subject to wise conservation and utilization, it constitutes an indefinitely renewable source of products which are indispensable to man.</p>	<p>Apart from the fire danger which has already been discussed, it will be necessary to keep out as much livestock as possible from newly planted areas, as experience has shown that much damage can result from the movement of cattle herds through young plantation at the 'thin' and 'whippy' stage. Barb-wire fencing is the only answer, and of course all paths and cut lines would have to be fenced in this matter. A double strand with posts 20' apart should be sufficient.</p>

Table 5 (cont'd)

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MINING	Sometimes we don't go to the mine for many months because if something is happening you will not see or hear. It is dangerous and risky. They can kill you or you will need help and no one can help you	If you don't go to the mine and you don't have a farm you will just be sitting and be hungry. Tired doing nothing. So, for me there were 14 of us from my mother. None of us go to school. So, I start going to the mine.	Well, the people who settled and farmed in Ngel Yaki forest were ordered by government to evacuate the forest as it was designated a forest reserve. There were people that use to farm and get food and other. They kept quiet. I don't know if they were compensated but they were eventually silenced.	Initially we don't have any trouble before, there is only forest and animals like monkeys and lions and a lot of grasses and we used to trek from Yelwa to Ngel-Yaki.	They have soured the bush and denuded it of its rather sparse dry season grass, which makes it very hard on the grass-eating antelope and buffalo
NTFP (basket weavers, bees/ honey, firewood,		As a woman the major activities for the day were farming, fetching fire wood to use and sell in the market and cook for the house.	We were happy, since we were going close to the road. Since government said we should go, we thought the government is going to help us. Since they showed us land to build. We thought there would be no problem or bitterness.	Yes, you know this forest is very rich. We have the beichmedia (also known as the local yeast) that our people used it in frying and baking things like pan-cake, masa, bread or rice cake.	Before we get the grass close by but not now. The fire and the farms have covered everywhere. Now, the place is too far. I tell my children to get it for me.

Table 5 (cont'd)

<div>CODE</div> <div>RESOURCE USER</div>	CONFLICT – This refers to any conflict in regards to use of the natural resource	LIVLIHOOD - This refers to any reference in regards to importance / dependence on the natural resource by the users.	RELOCATION - This refers to any discussion in reference to the displacement process and forced resettlement.	RESERVE - This refers to any reference in regards to the advantages or disadvantages of the reserve.	INTERACTION EXAMPLE – This refers to any example of a negative or positive interaction with another resource user.
HUNTING	<p>When caught, they detain any trespassers in the Police station. There was this case that the offender was transferred to Jalingo which to me that wasn't justice because up till now there are still Fulani's who still graze around there. Why would you arrest hunter leaving Fulani who is grazing? It means something is wrong.</p>	<p>During Sardauna's time there was lions in the bush and they used to hunt and feed on other animals. And people from other towns down the mountain and from Adamawa there is a chief called Mukaddas. He would always come to hunt. We hunt for sport and then we eat.</p>	<p>They said this place, it was not reserve but now that the road have come here, when they went to Yola, the chief of Gambu should look for land and give us, to leave the place for reserved, and that is how we move and come here. We were not given any other explanation</p>	<p>From that time, we came to have game reserve but Initially hunting and farming there in the forest is prohibited and there is a great penalty to whoever was caught but later hunting and farming is allowed and some even have their settlement in the forest until the time it become a reserve and any activity seize and this is when this project started.</p>	<p>Now if cattle stop entering there, grasses cover everywhere, grasses cover between 2 to 3 years. But when they hear 'Fuu' fire they will run but if there is no fire, everywhere is quiet, and animals will be multiplying. When they go you will see the animal will start coming back and multiply. So, when bush burning stop, cattle go out, you will see everything will go back like before. When grasses are burning, animal will be afraid</p>

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