People Partner with Nature for Sustainable Living Program

Socio-Economic Baseline Study around Echuya Central Forest Reserve

Final Report

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Environmental Surveys
INFORMATION, PLANNING & POLICY SYSTEMS

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Table of Contents

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LIST OF ABBREVIATIONS

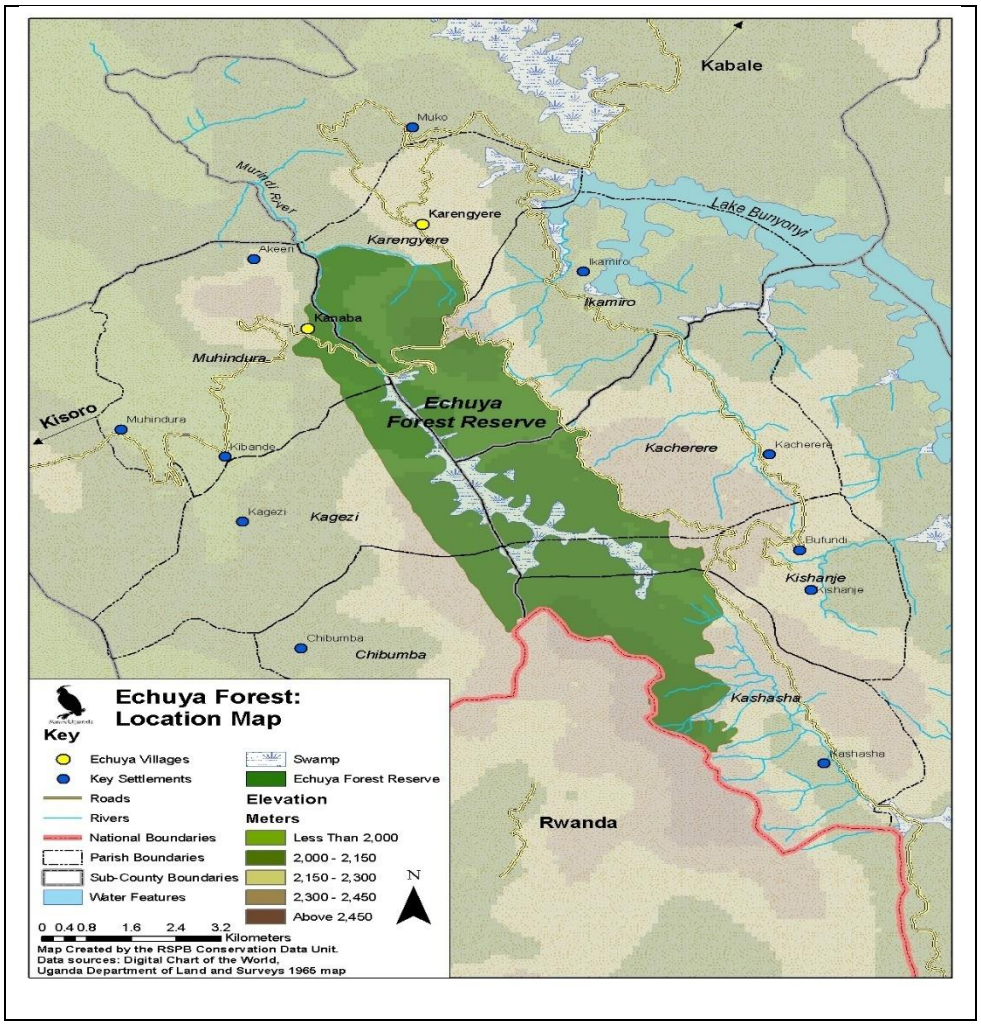
CFM	Collaborative Forest Management
CFR	Central Forest Reserve
DOF	Danish Ornithological Society/ BirdLife Denmark
ECFR	Echuya Central Forest Reserve
FGD	Focus Group Discussion
IGA	Income Generating Activity
NFA	National Forest Authority
NU	***Nature*** Uganda
SACCO	Savings and Credit Cooperative
SLM	Sustainable Land Management

CHAPTER ONE: INTRODUCTION

1.1 Background: The Echuya Central Forest Reserve landscape

Echuya CFR is one of the forests managed by the National Forest Authority. The forest covers 3,400 ha along the Albertine Rift, with 20 percent of its area situated in Bufumbira County in Kisoro District and the remaining 80 percent in Rubanda County in Kabale District. The southern end runs along the north-eastern border of Rwanda (Figure 1). It lies between 1°14´ – 1°21´S and 29°47´ – 29°52´E, covers an area of 34 km^2, with an altitudinal range of 2270 – 2750 m. It is situated on a high altitude ridge running between Lake Bunyonyi, 5 km to east, and Mgahinga Gorilla National Park, 13 km to the south west. It is 11 km east of Kisoro Town. The main Kabale to Kisoro road passes through the northern end (Bitariho et al., 2015).

Fig. 1: Location map of Echuya Central Forest Reserve



Echuya Central Forest Reserve (ECFR) is a unique Afromontane habitat and an area of high endemism (Plumptre *et al.,* 2003, cited in Bitariho et al., 2015). The forest lies at the heart of the biodiversity rich Albertine rift eco-region and is a site of global biodiversity. It is mainly constituted of moist montane forest, but also has an extensive swamp. The Forest and adjacent land scape are of significant conservation values. The forest plays a key water catchment function and habitat for important biodiversity resources. As a biodiversity habitat, Echuya forest houses rare and endemic species but the montane forest is severely threatened habitat. According to ***Nature***Uganda/DOF (2010), the forest harbors more endemic mammals, birds and amphibians than any other region in Africa, many of which

are globally threatened. In 2000, Echuya forest ranked as the most important forest in Uganda for the rarity of its flora and fauna[1]. It is also a priority BirdLife International Important Bird Area (IBA).

Echuya Forest is very rich is species diversity. Records show that the forest houses approximately 152 bird species, 54 butterflies, 43 moths and 127 trees and shrubs, of which some enjoy global recognition as endangered species (e.g., Grauer's Swamp-warbler), near Threatened (e.g., Kivu Ground Thrush, Handsome Francolin and Red–throated Alethe) among others. Approximately 40% of the butterflies are regional endemics.

The forest houses one of the remaining bamboo stocks in the south western Uganda. Over the last decades, natural forest and bamboo resources outside ECFR have been lost and access to bamboo in the other two locations (Bwindi Impenetrable and Mgahinga Gorilla National Parks) has been restricted thus leaving Echuya as the major source of bamboo for both domestic and commercial use in south western Uganda and Rwanda (Muhwezi, 2012)

The forest is surrounded by areas with a very high rural population density that depends almost entirely on agriculture and forest products for their basic livelihood needs (firewood, bamboo for construction, medicinal plants, etc.). Most of the landscape around Echuya has been deforested, leaving the Central Forest Reserve as the only local source of forest products.

1.2 Population

Echuya CFR is located in five sub-counties namely Muko and Bufundi, sub-counties in Kabale District, and Kanaba, Bukimbiri and Murora Sub-counties of Kisoro District. Adjacent the forest are 8 parishes of Chibumba, Ikamiro, Kacerere, Kagezi, Karengyere, Kashasha, Kishanje and Muhindura. In terms of ethnic groups, the population around the forest are Bakiga, Bafumbira and the Batwa (Nature Uganda, 2012).

The areas surrounding Echuya CFR have one of the highest population densities in Uganda. According to the 2014 National Population and Housing Census, the population densities of Kabale and Kisoro Districts are way above the national average of 173 persons/km^2. Kabale had a population density of 314 persons/km^2 and Kisoro was at 402 persons/km^2. However both districts' population growth rates were below the 3.0% national average. Kabale had a population growth rate of 1.2%, while Kisoro had a population growth rate of 2.1%. This implies that people are either migrating, or have taken measures to control birth rates. The two districts have the highest population densities in SW. Uganda as shown in Table 1.

Table 1: Human population densities and growth in South-Western Uganda (UBOS 2016)

District	Population density	2002-2014 Population growth rate	Average household size
Kabale	**314**	**1.2**	**4.4**
Kanungu	198	1.7	4.5
Kisoro	**402**	**2.1**	**4.5**
Ntungamo	236	2.0	4.7
Rukungiri	219	1.1	4.5
Uganda	**173**	**3.0**	**4.7**

The five sub-counties adjacent to the forest have a total of 123,345[2]people, shown in Table 2.

[1] Uganda Forest Department 2002. Forestry Nature Conservation Master Plan. Ministry of Water, Lands and Environment, Forest Department.
Echuya and Mafuga Forest. Reserves Biodiversity Report, Report No. 22, 1996

[2] This is from the provisional results of the 2014 census. Final census results are not yet analyzed below the district level.

Table 2: Human population in the Sub-counties adjacent to ECFR (UBOS 2015)

Sub-county	2014 population provisional census results
Bufundi	25,766
Muko	46,847
Bukimbiri	15,406
Kanaba	16,026
Murora	19,300
Total	**123,345**

1.3 Projects implemented at ECFR

Since 2004 Nature Uganda and its partners have worked around Echuya Central and Kasyoha-Kitomi Central Forest Reserves. A number of interventions geared towards forest health recovery and enhancing capacity of forest dependent communities to benefit and manage the forest together with National Forest Authority (NFA) through Collaborative Forest Management (CFM). The most recent project implemented by DOF and Nature Uganda was the DANIDA-funded *Improved Livelihoods through Sustainable Management of Forest Resources in and around Echuya Forest.* These included activities focused on collaboration for community livelihood improvement and fostering trust between communities, the government and the private sector. Under CFM, forest adjacent communities and local governments have been empowered to protect the forests through regular monitoring of forest resource status.

In 2015 NU together with DOF, a partner in Denmark, secured funds to consolidate the achievements made by the previous and ongoing Nature Uganda interventions through "Integrating Livelihoods and Conservation" through a new Program called **"People Partner with Nature for Sustainable Living".** The overall objective is to reduce the depletion of forests and biodiversity. This will be achieved through participatory forest management which involves and benefits local forest adjacent communities and supports the collaboration between community based groups, responsible agencies for forests and biodiversity and local authorities. The Program is expected to both, contribute to improved livelihoods among the local poor who will benefit from better access to the forest and 'green' income generating activities, and to the protection of forests and biodiversity. At another level the Program will engage in advocacy for biodiversity protection and support networking and training of community based groups, in order for these groups to be better able to influence policy decisions and advocate for their own involvement in decision making processes. The long term goal is to improve and qualify the management of natural resources, especially forested Important Bird Areas (IBAs), on which local livelihoods depend for food, fuel, etc. and for critical ecosystem services, such as water, soil conservation and reduced vulnerability to natural disasters such as landslides, and climate changes. The long term objective of the Program is to reduce the destruction of forested IBAs and contribute to the realization of best Participatory Forest Management practices for the benefit of all. This will be achieved through: increasing the capacity of Program partner, NU, to strategically work with the integration of poverty reduction and nature protection, improving livelihoods of poor communities, reducing pressure on ecosystems and biodiversity through Participatory Forest Management and empowering local civil society groups to engage in rights based advocacy and improving governance processes. NU commissioned a socio economic study to be undertaken among the communities adjacent to ECFR.

1.4 The socio-economic study objectives

The objective of the study was to gather background information about the target communities, mainly on demographics, social profiles of the population, gender, subsistence activities, forest activities, household economics, economic opportunities and threats, civil society, their governance and decision making structures.

Specifically, the study was supposed to do the following:

- Undertake social, demographic and gender profiling of the communities adjacent to ECFR

- Undertake economic profiling and identify economic opportunities available to the communities
- Describe the existing civil society organization and governance situation
- Assess the existing networks and networking opportunities
- Assess the existing level of community participation in forest management and identify other opportunities of participation

The data collected will serve both, to develop activities that address the actual needs and realities of the communities and to secure the poverty orientation and gender balance of these activities and will form the baseline for monitoring and measuring progress and changes incurred by the Program.

The survey was undertaken from December 2015 to January 2015. The survey team included the team leader (consultant), together with six (6) enumerators, four of whom had worked around Echuya CFR, so had good understanding of the communities and the area. The team underwent three days of training to get a common understanding of the data expected and the approach to the interviews. During the training the pre-formulated questionnaire provided by Nature Uganda was modified to suit the context in the field. Primary data collection was done over ten (10) days.

CHAPTER TWO: METHODS

The survey was undertaken from December 2015 to January 2015. The survey team included the team leader (consultant), together with six (6) enumerators, four of whom had worked around Echuya CFR, so had good understanding of the communities and the area. The team underwent three days of training to get a common understanding of the data expected and the approach to the interviews. During the training the pre-formulated questionnaire provided by Nature Uganda was modified to suit the context in the field. Primary data collection was done over ten (10) days. The data collection methods used included the following:

2.1 Village community wealth ranking

At village level the team approached the Chairperson of the Village Local Council, introduced the study and asked him to formulate a small group of village members to update the village register and rank the households into wealth groups. This exercise included writing down the list of households in the village, identifying those which are *dejure* female headed household (headed by widows or women who were not married), of *defacto* female-headed households (where the husband has more than one wife or works away from home, and so spend a lot of time away from home, leaving the wife to take major decisions of the household). The exercise also identified household of the minority Batwa.

Plate 1: A village wealth ranking exercise in Kamugoyi, Kanaba

After the village household register was completed, the village team identified the indicators of wealth and poverty in their village, identifying four categories of households, the first being the well-off by that particular village's standards, and the fourth being the poorest households. While some villages could have identified more than four groups of wealth/poverty, we opted to limit the groups to four, for purposes of comparability. The village representatives then went through the village lists and allocated each household to a wealth group. This was useful in getting estimates of the prevalence of poverty among the communities, but also for interpreting the data. The indicators of wealth and poverty were various, including acreage of land owned by the household, activities engaged in, whether households had access to liquid cash, were buying or selling labor, were food-secure or not, owned livestock or not. Brief description of the four wealth/poverty groups is given in the next section.

2.2 Household survey

The questionnaire survey lasting 10 days was undertaken in eight villages located in eight parishes of Bufundi, Muko, Kanaba and Murora Sub-counties. All the sampled parishes are adjacent to Echuya Forest. The respondents were adults within the households, mainly heads or their spouses or adult children. In many of the households more than one household member participated in the interview. In villages with the minority Batwa communities, effort was made to include them in the sample. A total of 173 household interviews were conducted.

Table 3: Sampled villages and number of households

District	Sub-county	Parish	Village	Total interviews	Processed interviews
Kabale	Bufundi	Kacerere	Rutagyengyere	23	15.1
		Kishanje	Rushayu	16	10.5
		Kashasha	Mushanje	17	11.2
	Muko	Ikamiro	Rwamahano	34	22.4
		Karengyere	Kashambya	21	13.8
Kisoro	Kanaba	Kagezi	Gitebe	20	13.2
		Muhindura	Kamugoyi	21	13.8

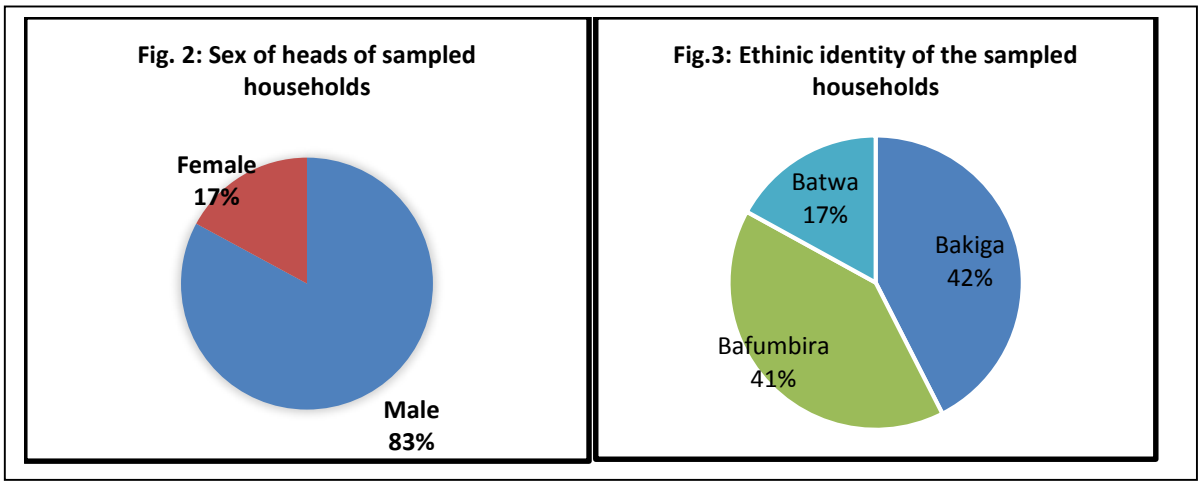
	Murora	Chibumba	Mihanga	21[3]	
Total				**173**	

The households to interview were randomly selected by the team from the village register, effort being made to sample from all four wealth groups. The village Chairperson then directed the enumerators to the sampled households. Every end of the working day the team leader and enumerators cross-checked the filled in questionnaires for completeness and consistency. The Household questionnaire focused on many aspects, including:

- Household demographic (numbers, relationships, gender, age, literacy, occupation, and ethnic identities of members)
- Land- amount of and characteristics of land owned by the household and whether it had increased/decreased in the last decade and landuse, main crops grown and livestock reared by the household and the gender division of labor in farming activities, main income sources of the household, approximate annual incomes and household gender division of labor in income generation
- main sources of water and fuel, associated costs and gender division of labor in water and fuel provision, access to communication media and markets, access for resources from ECFR, approximate incomes from forest resources and gender division of labor in forest resource provision and other perceived benefits of the forest, problems associated with its existence and household participation in forest management activities
- constraints faced by women in subsistence and income generation activities and memberships in community institutions like CFM groups, Village Savings and Loan groups and other institutions and perception by households of community priorities.

2.2.1 Profile of sampled households

According to the UBOS (2016), the average household size of districts in the region is generally lower than the national average (see table 1 above). The average size of the households sampled in this survey was 5 people per household, higher than the average household size of both districts. There were 768 family members, with a female-male sex ratio of 1.05. Most of the households (83%) were headed by men. Less than a quarter (17%) of the households were headed by females. However many more households are *defacto* female headed households because of polygamy. Many polygamous men live away from some of their families. Such households are disadvantaged in economically and socially.

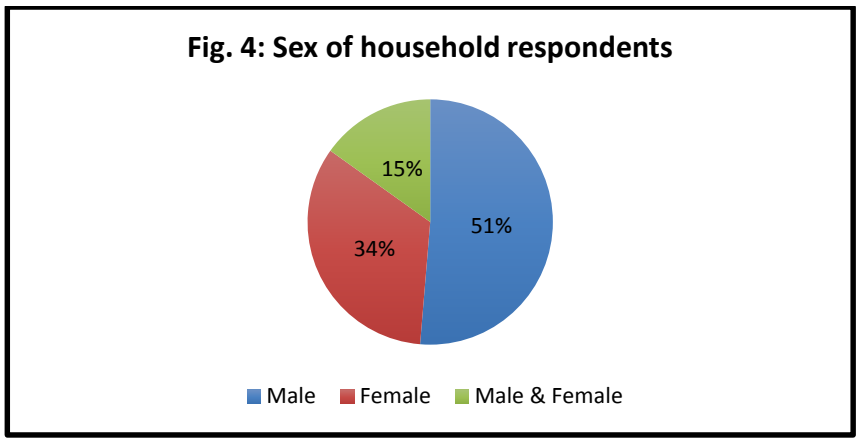


[3]In this village the team found the village community in a village meeting. After a long explanation about the survey, community leaders were uncomfortable about undertaking a village wealth ranking exercise and interviewing their members. Even though some individuals eventually agreed to be interviewed, the general impression of the team was that the respondents were highly secretive, and the data cannot be trusted. As such we have excluded it from the analysis.

Of the sampled households, 42% were Bakiga, 41% were Bafumbira and 17% were Batwa. There were no other ethnic groups identified in our sample.

2.2.2 Profile of respondents

We interviewed a total of 188 people in 152 households. In most households (80%) one individual was available for the interview, while in the remaining 20% of the households 2-3 people participated in the interview. The respondents were mainly males alone (51%), females alone (34%) or males and females together (15%).



Most of the respondents were household heads (62%), while 26% were spouses. In a few household we interviewed adult children (11%) and parents (2.1%). Almost 30% of the respondents were in the mid age of 36-50 years, while over a quarter of the respondents (25.7%) were in the 26-35 years' age group.

Table 4: Respondents' age and relationship with the household head

Age groups of respondents		Relationship of respondents to HH Head	
Age group	**%**	**Position in HH**	**%**
<20	7.0	Head	61.7
20-25	13.9	Spouse	25.5
26-35	25.7	Child	10.6
36-50	29.4	Parent	2.1
51-70	18.7		
>70	5.3		
Total	**100**	**Total**	**100**

Just over half (54%) of the respondents said they could read and write, while 46% said they couldn't.

Table 5: Literacy of the respondents

Can read and write	101	53.7
Cannot read/write	87	46.3
Total	188	100

2.3 Focus group discussions

Two Focus Group Discussions were conducted in Muko and Kanaba Sub-counties with the Collaborative Forest Management Groups. The FGDs were conducted by the team leader, assisted by a note taker. The focus of the discussions was history of the CFM groups, membership and issues of inclusion of minority and marginalized groups, governance, issues of rights and responsibilities vis a vis the forest, the activities, achievements of the groups, benefits realized from CFM and challenges faced by group members.

2.4 Key informant interviews

Key informant interviews were conducted by the team leader among leaders of villages. The discussions general community development issues and challenges, issues of resource ownership, population dynamics, the performance of community institutions like CFM groups and Village Savings and Loan groups, and social services.

2.5 Observation and photography

During fieldwork the team members made observation among the communities and households they visited. The team members also took photographs of key phenomena that exemplify the socio-economic situation among the communities. These observation were shared and helped in interpreting the data collected.

2.6 Challenges encountered in the study

In one sampled village in Kisoro District, Chibumba Parish, the community was unwilling to participate in the study even after a long explanation to a village assembly attended by leaders and the community. The team visit coincided with a village meeting. The community leaders were uncomfortable about undertaking a village wealth ranking exercise. Even though some individuals agreed to be interviewed, the general impression of the team was that the respondents were highly secretive, and the data cannot be trusted. As such we have excluded it from the analysis.

In general there is reluctance by the community members to give information about themselves, especially information on land owned and incomes. The general tendency is for people to under-declare what they own and earn, and amount of forest products harvested. However some people do give genuine information. Thus the figures got should be considered under-statements in most cases.

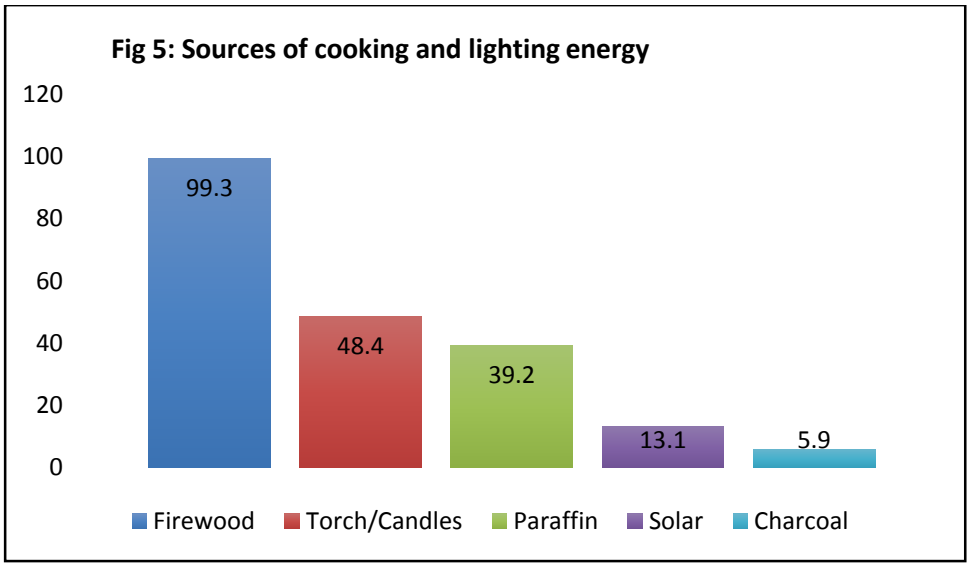
CHAPTER THREE: RESULTS

3.1 Access to services

3.1.1 Energy

Plate 2: Firewood is the main source of energy in the Echuya landscape

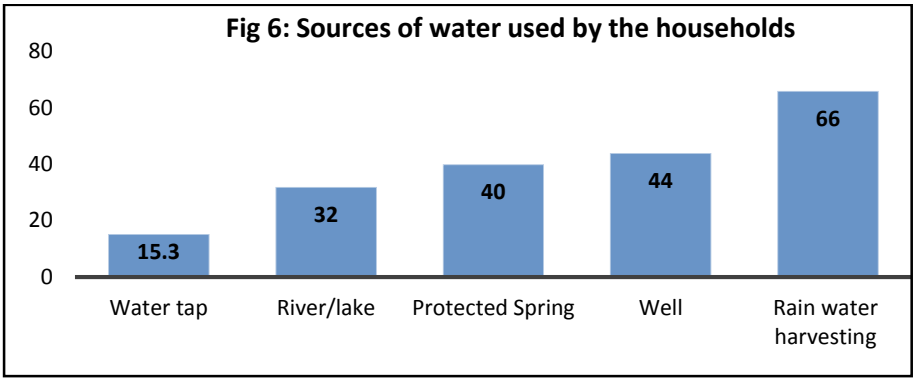
All the household sampled except one used fuelwood for cooking. Among the Batwa households, fuelwood is also used for lighting homes at night. While there are a few households that use fuelwood from their own woodlots, 97% use fuelwood collected by the household members, or bought from others who collect from ECFR. Actually, the community do not perceive fuelwood as scarce, because there is ready supply from the forest reserve, especially supplied by the Batwa. Firewood exchange is an important livelihood source for Batwa in the region. Batwa are allowed to access fuelwood from the forest on a daily basis, and they sell it to buy food, or barter it for food. Torches are also commonly used. In most households these just batteries connected to small bulbs. Only 13.1% had solar systems, and the main hindrance seems to be the high initial costs. Charcoal is not a common energy source, because it's more expensive than fuelwood, but also the area outside ECFR is already heavily deforested.



Among 53% of households whose primary source of energy for cooking was firewood, women did 60% and above of the work related to firewood provision. Men were responsible for 60% and above of firewood provision in only 8% and children in 14% of these households. Clearly, firewood provision is women's work.

3.1.2 Water

Rain water harvesting is the most commonly accessed source of water among the community. The areas around Echuya receive high amounts of rainfall. A blessing because those who have rain water harvesting facilities have clean water most of the time. However many do not have sizable water storage facilities and only harvest in small containers. The wells and rivers are located mostly at valley bottoms, and households located up the hills have challenges collecting water. Rain water harvesting is thus one of the priority investments that household make when they get good income. Many of the household who fetch water from wells and rivers fetch it from inside the forest, and water is one of the highly recognized benefits from the forest. In Kacerere Parish a faith based organization built a gravity water system, and all houses had reasonable access to clean water, except the Murubindi Batwa community who are located up the hill. Lack of clean or accessible water, especially in the dry seasons, was the 6th most mentioned livelihood challenge.



3.1.3 Communication

The most commonly used communication means are radios and mobile phones. Over half (53.2%) of the sampled household have access to a radio. This percentage is lower than that established in another survey around ECFR in 2012 which established radio possession at 69.7% (NU, 2012). The most likely explanation for this difference is that all the villages surveyed in this study were forest-adjacent, in which communities tend to be remote and poorer. The 2012 survey had more representation of non-forest adjacent villages. The radios are mainly owned by men in the households (94%). Half (50%) of the household have access to mobile phones. The phones are mainly owned by men in the household (89.5%). Radios are mainly used to get information on government programs, get news but also send out announcements. Phones are principally used to communicate to friends and relatives, and in households selling crops, they are used to link to buyers and get information about crop prices.

3.1.4 Access to markets

Majority of the households (90.2%) sell one or more products or crops. Irish Potatoes, beans, crafts and craft making material, sorghum, bamboo stems, peas and bean stakes top the list of products sold by households. Firewood (mainly from ECFR) is also sold by 5.1% of the sampled households. In addition, all the forest products on the list below are also exchanged for food by the poorest households (especially the Batwa), and this is not reflected in table 6 below. As the table shows, potatoes are the backbone of the local economy, and so any setbacks in production caused by diseases or climate changes affects the entire community severely. Thus support in terms of access to improved seed, disease control and soil productivity enhancement in this community is key to local development.

Table 6: Main products sold by the sampled households

Product sold	Number of households	Percent
Irish Potatoes	115	83.3
Beans	39	28.3
Craft/Craft Material (ropes, grass)	29	21.0
Sorghum	12	8.7
Bamboo stalks	12	8.7
Peas	9	6.5
Bean stakes	9	6.5
Wheat	8	5.8
Onions	8	5.8
Firewood/charcoal	7	5.1
Passion fruit	6	4.3
Livestock	4	2.9
Barley	3	2.2
Vegetables	2	1.4
Others crops/products	8	5.7

The high demand for agricultural produce in the region creates competition among the traders and middlemen. They traverse the villages to buy at farm-gate prices, often under-paying desperate farmers. About 14% of the household said they sold some of the products from home, and many more sell within

their village, usually at a store of a local middleman. Women mainly sell products from home, within their village or at nearby trading centers. This is because they are less mobile due to other household responsibilities. Selling locally means that they sell at low prices to local middle men. Men on the other hand access further away, and more lucrative markets like Kampala, Kabale, Kisoro, or even beyond the national borders. Among the formal markets, Muko, Kisoro, Karengyere, Mfasha and Kanaba are the most commonly accessed markets.

Table 7: Markets accessed by local communities around ECFR

Market	Number of Households	Percent
Muko	51	37.0
Kisoro Town	29	21.0
Karengyere	21	15.2
At home	**19**	**13.8**
Mfasha	11	8.0
Kanaba	8	5.8
Serere Trading Centre	8	5.8
Gifumba Trading Centre	7	5.1
Kashasha Trading Centre	7	5.1
Kabale Town	6	4.3
Kacerere Trading Centre	6	4.3
Murandama Trading Centre	6	4.3
Mushanje Trading Centre	3	2.2
Rushayu Trading Centre	3	2.2
Hakajagi Trading Centre	2	1.4
Karukara	2	1.4

3.2 Economic profiling of the sampled households

3.2.1 Wealth groups within the communities

The village population are generally disaggregated into four main wealth groups. The village representatives who undertook the wealth ranking exercise described the groups as shown below.

Wealth group 1 (*Abageiga/Abakire*)

These represented 12.2% all the listed households in the sampled villages. They were the well-off households in the villages. Typically, they owned more land pieces and total acreage than others, ranging from 5 to 20ha of land. They also owned more livestock (cows, sheep, and goats) because they could afford grazing land, in an area with high population density. They also had easy access to liquid cash, either from businesses or regular paid employment. The livestock was not only an asset that could be converted into cash, but also a source of manure to maintain crop productivity. Qualitatively, these people are able to educate children to institutions of higher learning, can afford healthcare and live in good quality houses. In two villages it was mentioned that typically these households were smaller monogamous families (better planned). These households are able to use hired labor and so have higher crop production. They also typically own woodlots of eucalyptus, pine or both. In terms of forest resource use, these households do not directly access the products, but buy from those who collect them, especially fuelwood, bamboo stems and craft made from forest products.

Wealth group 2 (*Abakungu/Abaragyezaho*)

These represented 23.1% all the listed households in the sampled villages. These were considered to be living "comfortably". They own between one to five acres of land depending of the village context, and some livestock for manure production, though they do not set land aside for livestock grazing. Rather they graze them in fallowing crop fields and along roads/paths. They live in "good houses", but not permanent. In some villages they were described as usually polygamous, having large families- therefore sufficient labor for production. They produce enough food to feed their households, and are able to

produce surplus crop yields for sale. These households are able to educate their children to advanced secondary level.

Wealth group 3 (*Abooro*)

These represented 39.1% all the listed households in the sampled villages. These were considered poor, but not destitute. They own one acre of land or less, and usually very few or no livestock. They live in small grass-thatched or un-plastered mud and iron roofed houses. They do not own enough household implements, utensils, or clothes. Their children drop out of primary school because they cannot afford the basic needs of food, clothes and scholastic materials. They do not produce enough food, and so have to sell labor and buy food. These households usually do not have woodlots, so depend heavily on the forest for fuel and other products.

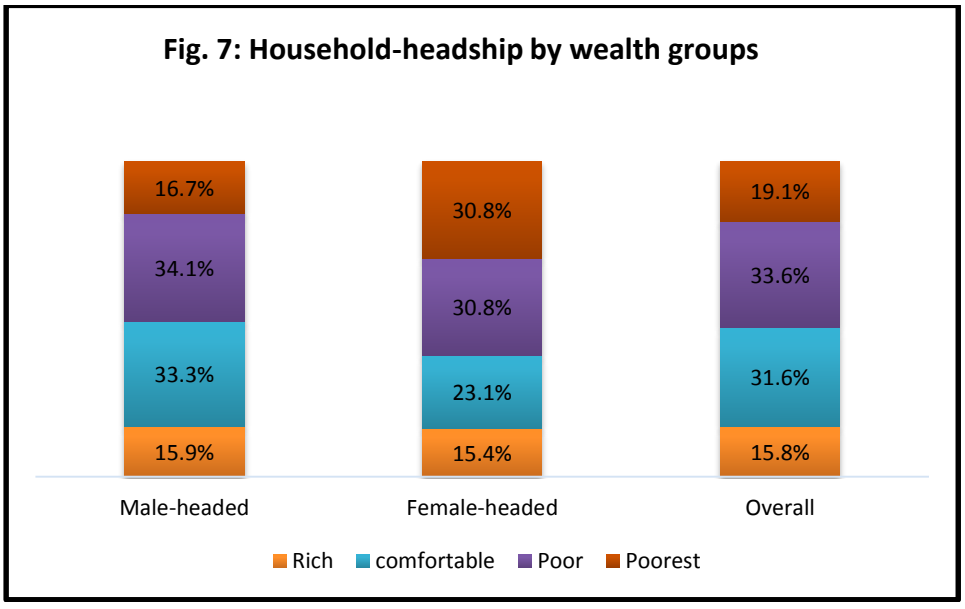
Wealth group 4*(Abatindi/Abooro Rununka*)

These represented 25.6% all the listed households in the sampled villages. These household were considered the poorest (in some communities referred to as destitute). They own a quarter acre or no land. Most of them work for food (*abachwanchuro*), or if they earn money, it is still used to buy food. They own no gardens of their own because they have no land or no time to cultivate it since they are always working for others. Their children do not enroll in school at all, because they lack the most basic needs including decent clothes and food. These people do not seek medical services when sick because they cannot afford it. Most of the Batwa households listed in the village registers were in this group. This group heavily depends on the forest especially for firewood, bamboo stalks, ropes and mushroom which they often exchange for food and money.

3.2.2 Wealth status of sampled households

Only 16% of the sampled households were identified as rich according to the wealth categories developed by selected community members. Almost a third of the sampled households were in the middle-income group (32%), 34% were identified as poor and almost a fifth (19%) were identified among the poorest in the communities.

Over half (53%) of were categorized as poor or very poor. This indicates high incidence of poverty among the communities. There are notable differences between male and female-headed households. Fewer female-headed households were in the "comfortable" wealth group (23.1%) than male-headed households (33.3%). Conversely, there were more female-headed households classified among the poorest (31%), than male-headed households (17%). This indicates that female-headed households are disadvantaged among the communities.



3.2.3 Land and natural resource ownership

Kisoro and Kabale Districts are densely populated. This has led to high levels of land fragmentation as land changes hands through inheritance and sale. Very little immigration is happening in the two districts. Instead many households sell all or part of their land holdings and shift to less densely populated districts in Central and Western Uganda.[4] However, the natural population growth rates are still high, due to early marriages, high fertility rates and polygamy.

Most sampled households owned multiple land pieces as shown in Table 8 below. Three Batwa household owned no land and were living with other families. Of those households who owned some land, the average number of land pieces owned per household was 4.65. Typically, a household owns and works on land pieces distances apart, costing them a lot of time going to and from working in the gardens. Having gardens located away from homesteads also makes it hard to apply organic manure from household waste.

Tables 8: No of land pieces and total land size owned by households

Group	Number of Households	Percent of Households	Average Acreage
No land	3	2	
1 Piece	20	13.1	0.99
2 pieces	21	13.7	0.88
3 pieces	32	21.6	1.73
4 pieces	25	16.3	2.32
5 pieces	14	9.2	2.25
6-10 pieces	31	20.3	4.69
>10 Pieces	6	3.9	7.75
Total	**152**	**100**	

The poor and poorest households owned mostly 2 acres of land or less. More than half (54.2%) of the households categorized rich and 39.6% of those categorized as comfortable owned above 2 acres of land. This indeed demonstrates that the acreage of land owned is an indicator of wealth in the region.

Table 9-: Total size of household land by wealth categories

Size of Household land	Rich	comfortable	Poor	Poorest	Total
<1 acre		16.7	30.0	22.2	19.5
1-2 acres	45.8	43.8	64.0	77.8	57.0
2.1-5 acres	37.5	31.3	6.0		18.1
5.1-11 acres	16.7	8.3			5.4
Total Households	**24**	**48**	**50**	**27**	**149**

Most of the rich and "comfortable" households reported that their total land acreage had increased in the previous ten years, mainly through purchase, while 26% of the poor reported their land had decreased through sale. This indicates a trend of land consolidation in the hands of those that have liquid cash. The people who sell land do so to meet emergencies like sickness, settling disputes, or to pay school fees for children. Still others sell land that has become too small to be productive and migrate.

[4] Interview with LC1 Chairpersons, Rutagyengyere, Rushayu and Kamugoyi Villages.

The situation of population growth rates around ECFR: Rutagyengyere Village

According to the Chairman Rutagyengyere Village in Kacerere Parish, the largest landowner in this village owned a total of about 12ha in multiple land pieces, while many small land owners owned about half an acre And while the birth rate was high in the area, the level of out-migration was equally high, as small land owners sell off land to richer people and migrate mainly to Bunyoro Region in Western Uganda. Thus in his view the local population growth rate was controlled.

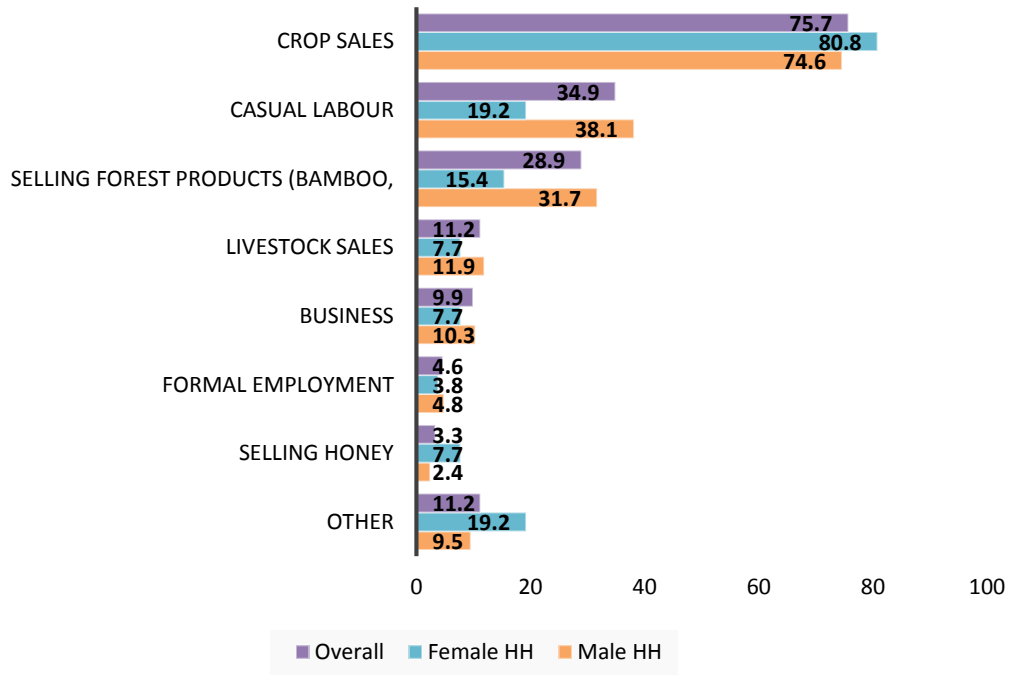
(Interview with LC1 Chairman, Rutagyengyere, Kacerere Parish)

3.2.4 Main occupations and income sources among the community

Crop farming was the main occupation for majority of the respondents (88.3%). Some households mix crop farming with keeping a few livestock. The main crops grown are sorghum, Irish potatoes, wheat/barley, beans, peas, sweet potatoes, onions and other vegetables.

Most of the households engaged in multiple income sources[5] as shown in figure 8.

Fig. 8: Sources of income for male and female-headed households



While majority derived income from crop sales (76%) and casual labor (35%), the sale of products directly extracted from Echuya forest, (including fuelwood, bamboo, ropes, weaving grass, bean stakes, and poles) were either the sole or one of the income sources for 29% of the sampled households. This means that almost a third of the population around Echuya CFR depend directly on the forest for livelihood. Additionally, the 3.3% households that depend on honey sales practice apiary mainly in the forest (though the survey did not disaggregate these from those who might be doing beekeeping outside the forest). Other households greatly depend on the resources of the forests, even though it is not their main

[5] This means that in terms of percentages, the total is greater than 100%.

livelihood source, as will be shown below. Clearly, Echuya CFR is a significant component of the livelihood systems of surrounding communities.

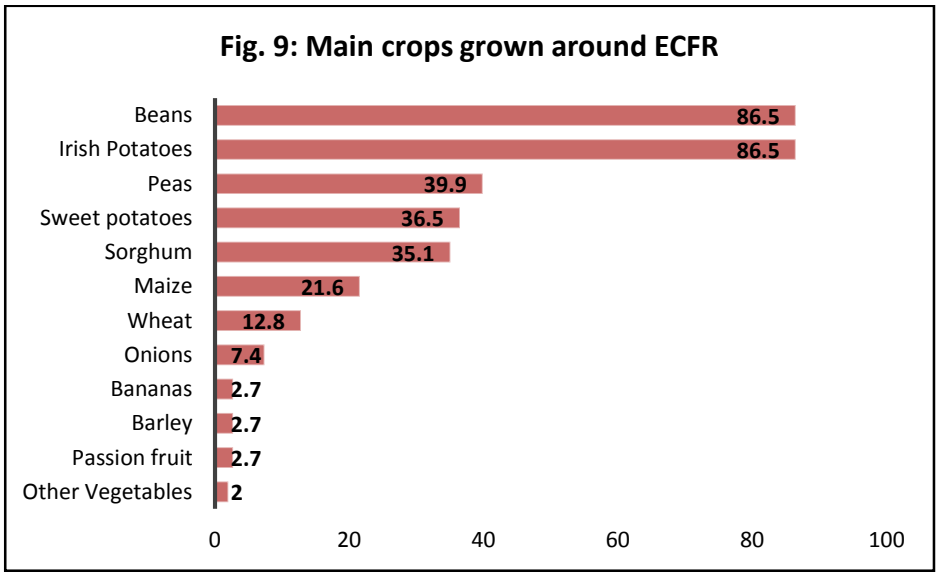
As figure 8 shows, crop sales are the major income source in the community, but more important to female-headed than male headed households. Women rely more on selling crops they have produced. On the other hand, male headed households dominate in off-farm sources of income like selling casual labor, forest products and business. Male-headed households were also more reliant on sale of livestock. This indicates that the crop farming is dominated by women, and all interventions around agriculture must focus on women.

Crop farming

Majority of the households (96.7%) grow some crops, mainly annual crops, with a few communities growing bananas which are perennial. The five household that mentioned they did not grow any crops were Batwa families. Beans and potatoes (locally referred to as Irish Potatoes) are the most grown crop in the region. The two crops are both stable foods but also major cash earners. The market of the two crops in the area can be referred to as booming, fueled by the increased demand within the country (mainly from urban populations and institutions like schools), but also because of increased cross-border trade of produce in the region (Rwanda, Kenya, Southern Sudan and DRC). Because of the favorable climate around the forest, most farmers have three harvests a year. Other important crops include sweet potatoes, peas and maize (grown mainly for household subsistence) and wheat/barley and onions which are mainly grown for sale.

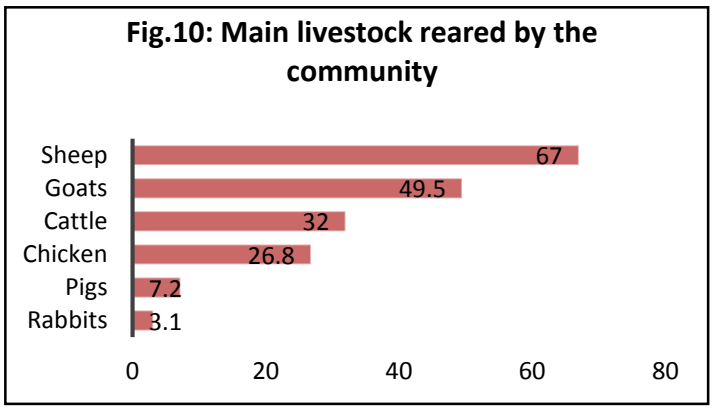
Plate 3: Nontraditional crops like passion fruits are important income sources

Non-traditional cash crops like passion fruits, tree tomatoes and mushrooms were promoted by NGOs (including Nature Uganda). Currently they are being grown by a few households, but these households were among the top income earners. These crops are important to the communities because the yield per unit of land is high.



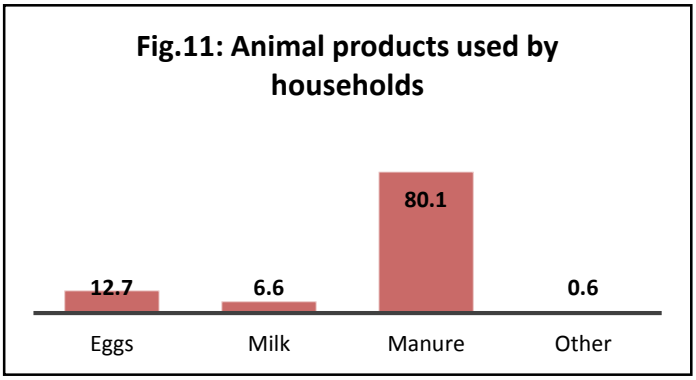
In terms of division of labor, men are mostly involved in the growing and management of cash-oriented crops like Irish potatoes, passion fruits, tomatoes, onions and wheat. For potatoes, reasons given were that spraying and carrying harvested potatoes was too heavy for women. While it is true that spraying acres of gardens is heavy work, women participate in collecting the water, especially where the source of water for spraying is not close. They also participate with men in planting, and do the bulk of weeding which is very tedious. Women on the other hand are predominantly responsible for crops grown for household subsistence like peas, sweet potatoes and beans. In reality the real reason why men concentrate their labor on cash-oriented crops is to control the resultant income.

Plate 4: A temporary livestock enclosure in a garden to fertilize the soil



Livestock raring

Sheep is the commonest livestock reared in the region, followed by goats. The importance of these animals is not just the income from sale of the live animals or their meat; rather they are more valued for the manure they produce. Animal manure is a very dear commodity in the region, because the soils are mostly over-cultivated and yields are very low if no soil enrichment is done. The great need for soil enrichment has triggered a market for manure. Farmers with sizable herds of sheep/goats do hire them to other farmers to enrich their gardens. The clients construct enclosures in their gardens, and the animals are brought in overnight. The enclosure will normally be shifted within the garden every 1-2 weeks, depending on the size of the herd. As such sheep and goats (more so sheep, because it seems to be easier to feed and produces more urine) are highly demanded assets, and a common indicator of wealth of a household.



Cattle are also prized for manure, but they are more difficult to feed in a situation of acute land fragmentation and shortage. Few households can afford to set aside grazing land. Sheep and goats are grazed along the village roads/paths and in fallow land. But cattle is said to tramp and destroy terraces, so land owners discourage cattle owners from grazing on their fallow land.

Casual labor

The region around ECFR is hilly, land is highly fragmented and yet the people are dependent on seasonal crops. As such there is high demand for casual labor, mostly used to till land, weed and harvest crops. Some households also hire labor to fetch water for domestic and farm use (e.g. for applying pesticides), where water sources are far. Many poor and very poor people depend on selling their labor. In all villages there are multiple labor groups, mainly of women, but in fewer cases mixed groups that sell labor collectively. This favors the clients because the work is done in a short period, so they can keep up with

Plate 5: Children are involved in casual labor

the agricultural calendar. The members of the labor groups also work on their own gardens collectively, in turns. Many times the distance to the gardens is long, so the laborers walk long distances and come back home very late. Some are unable to devote enough time on their household subsistence production, because they need the cash. This contributes to household food insecurity. Some women cited the need to sell their labor for cash as one of the factors that hinder them from meeting their household subsistence needs (no time for childcare, proper diets, or working on their own gardens).

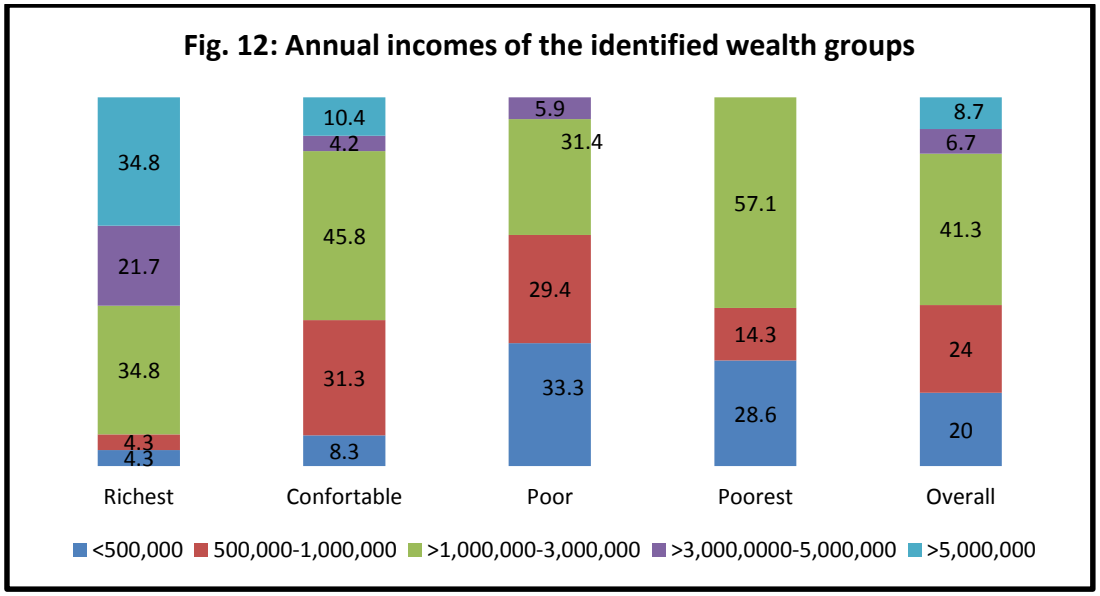
The other important demand for labor is transporting potatoes from the gardens, because they are bulky and heavy. Thus many young men traverse the hills and valleys transporting clients' potatoes to the selling points, which can be the nearest road, trading center of roadside market. The labor demand is so high, and relatively well paid (a 100-120kgs bag is carried for Shs. 5,000-10,000) depending on distance and terrain. Thus boys and children are lured from school to earn a quick buck. This means the potato trade is in a way negatively affecting the communities as it contributes to school drop outs. The Batwa, mostly men but also women are very active sellers of labor.

Business

The main forms of business undertaken by community members is trade in agricultural produce (potatoes, beans, sorghum, peas), general merchandise shops and bars selling factory made alcohol and beverages, or local brew and porridge. The profit from the latter particularly seemed to be high. In general, owning a business is a wealth indicator, and households that engaged in business were ranked among the wealthy of the villages. Thus many households aspired to engage in business if their incomes increased.

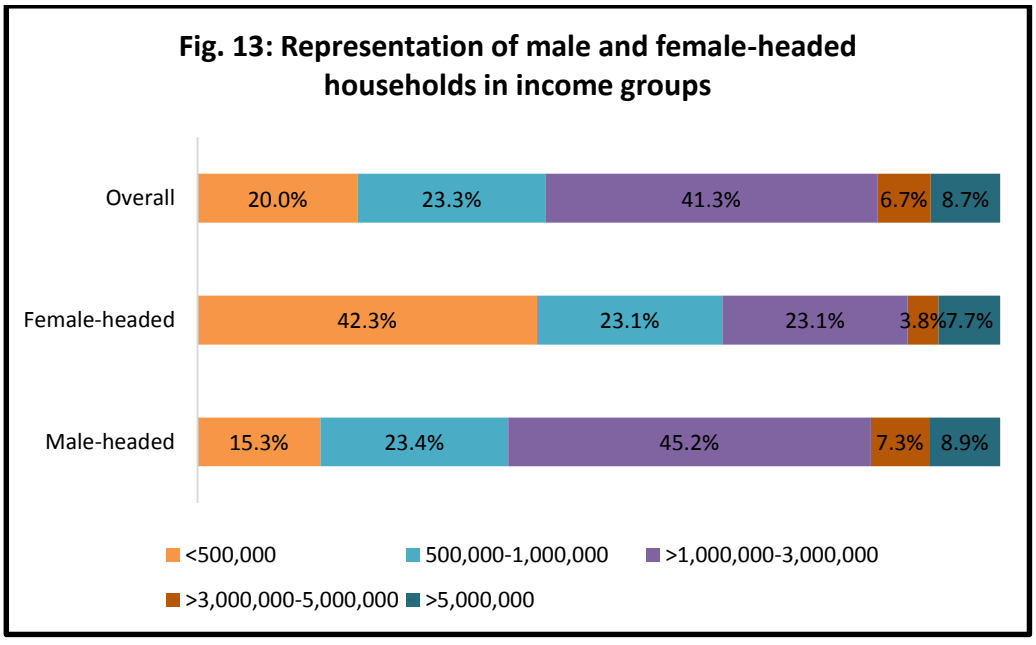
3.2.5 Household Incomes

Respondents were asked to give estimates of their incomes from the various activities they were involved in the previous year (2015). This is really an estimate since most people would not remember exactly what they earned, especially those who engaged in various activities. The annual income data provided by individual households did not fundamentally differ from the wealth classifications done by the community leaders. More than a third (34.8%) of the people identified as rich by the community earned annual incomes of more than five million Uganda shillings, and another 22% earned between three to five million. However, the striking aspect of the graph below is that 57% of the people classified as the poorest recorded to have earned between one to three million. This could be interpreted in several ways. It may be that the respondent's recall of monthly or seasonal incomes which were then extrapolated to annual income exaggerated what they actually earned. It may also result from the fact that people earn incomes in small amounts that they are unable to save and invest it in visible assets (houses, livestock, and business) that were commonly used to define wealth status. This would for example be true about Batwa households sampled. It turned out that many Batwa actually earn significant incomes from selling labor and forest products. But they are unable to save the money, mainly because they don't grow their own food and have to buy it on a daily basis, but also because a substantial part of their income is spent on alcohol. The ability to save incomes among Batwa households is still low.



The other inconsistent finding is that fact that 1 household (4.3%) among the households identified as "rich" indicated they earned less than 500,000. We later found that this household was a *defacto* female headed household, the head was a third wife of a polygamous man. The man himself was part of the wealth ranking exercise, and since his main household was ranked as "rich", the group automatically ranked his third wife in the same group (probably because he was present). However the interview with the third wife revealed the husband had neglected her and she was not materially and financially comfortable.

We identified the income groups of male and female-headed households. Results indicate that female-headed households were more represented in the two bottom income groups than male-headed households. Conversely, male-headed households were more represented in the top three income groups. This indicates the disadvantaged positions of many female-headed households.



3.3 Community Interaction with Echuya Central Forest Reserve

3.3.1 Forest related economic opportunities

Almost all the households surveyed used products from ECFR. Some got the products for household use, but many also got them to sell directly, or convert into other products (baskets, mats) for sale. Most of the Batwa fall in the latter.

Fuelwood from ECFR is used by almost all the households. The other most used forest products are craft weaving material and bamboo stems (used to weave baskets and granaries, build houses and fences and to stake bananas, beans and passion fruit). Other commonly used resources are bean stakes, water and grass for thatching or weaving mats. The demand for grass from the forest is acute because most of the wetlands outside the forest have been cleared for cultivation, and ECFR remains the main source.

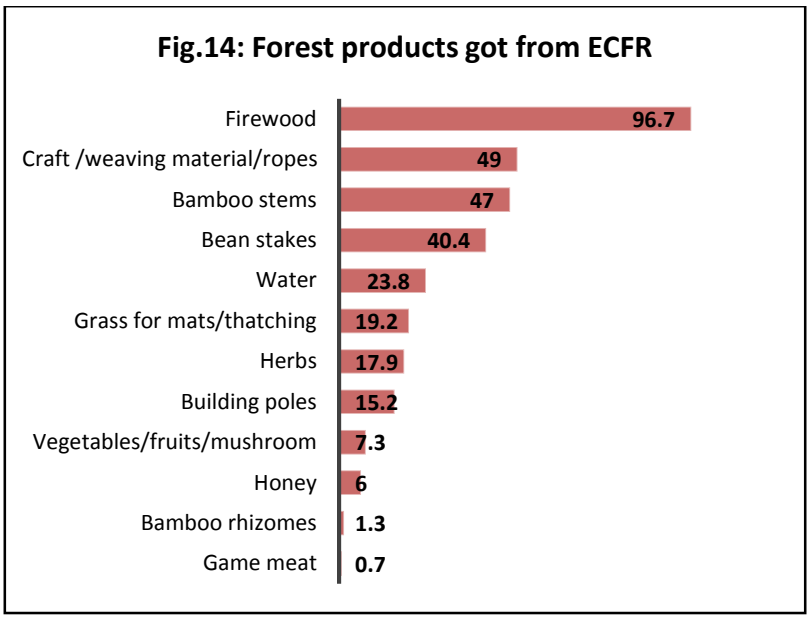


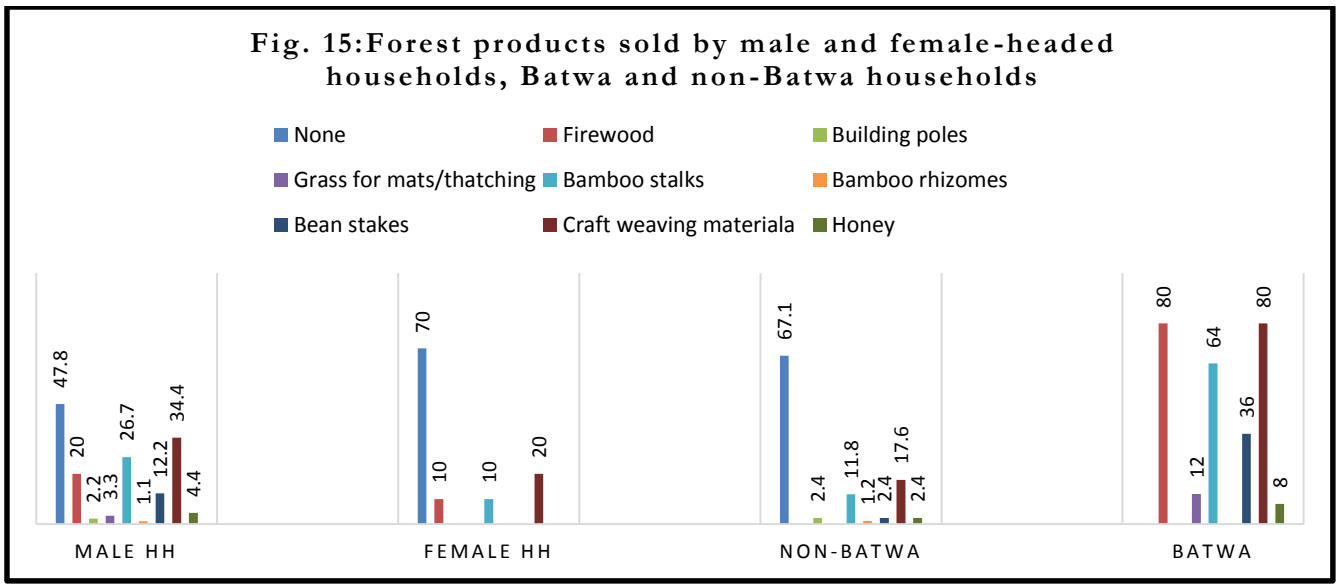
Plate 6: Firewood from the forest is an important livelihood source for Batwa women and men

Majority of the households (74.8%) collected some or all the forest resources they used themselves, while 18.2% bought or bartered some or all the resources from others who collected, and 22.5% said they collected some of the resources and bought others.

Almost three quarters (72.4%) of the surveyed households said they sold some forest product, raw or processed into other products. The product most sold is ropes used in weaving mats, baskets as well as in construction of houses and granaries. The second item most sold is bamboo, again mainly used for basket weaving, but also used in house and fence construction and banana and passion fruit staking in some communities. The other commonly sold forest products are firewood and bean stakes.

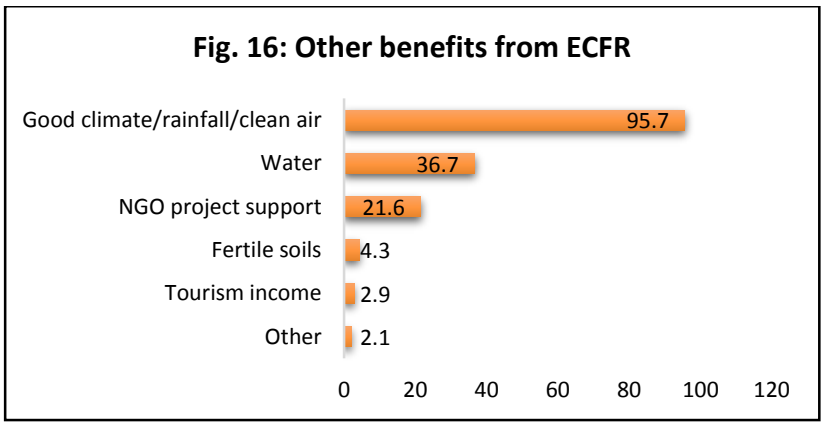
The forest products most sold by the dominant Bakiga and Bafumbira households was weaving materials (sold by 18%) and bamboo stalks (sold by 12%). All the Batwa households sell forest products. They sell mainly weaving materials (80% of them) fuelwood (80%), Bamboo (64%) and bean stakes (36%). In addition, Batwa households barter these products for food (especially fuelwood and grass). So clearly, the forest is still a significant source of livelihood for most households around, and particularly the Batwa. In terms of wealth groups, over half of the poorest households (52.3%) and 12.5% of the poor households sell fuelwood from the forest.

Of the households that accessed some forest resources, male-headed households undertake commercial use of forest resources more than female-headed households, and sell a wider variety of resources. Female headed sold craft material, bamboo stems and firewood.



3.3.2 Other benefits associated with ECFR

Apart from the resources that many households get from ECFR, the forest is also acknowledged for the environmental services it renders to the surrounding communities, as well as other material and financial benefits. Communities appreciate the favourable climate (reliable rainfall) on which their agricultural livelihoods depend, as well as the cool environment and clean air it brings. The forest is acknowledged as the main source of water in the region. Many households fetch water from the forest, and others from streams that flow from the forest. The communities also appreciate that the existence of the forests contributes to the fertility of their land. Apart from these services, the NGO programs that the forests attracts (including Nature Uganda) and the occasional tourism and employment opportunities (e.g. boundary clearance exercises) are also appreciated as benefits.



3.3.3 Economic aspirations of the sampled households

We asked men and women separately about what they would do to improve their household economy. The responses are presented in Table 10 below. Crop diversification came out strongly as an option by both men and women. Communities feel they are too reliant on a few crops (Irish potatoes, beans, peas, sweet potatoes), and when there is a problem of crop disease or climate change, household economy is greatly affected. In addition, the output per unit of land is decreasing due to soil exhaustion. As such, many respondents felt they need to adopt crops whose output per unit is high in terms of resultant income. Specifically identified were passion fruits and mushroom, which have been promoted by Nature Uganda.

Acquiring livestock, especially sheep and goats was the second highest prioritized option. These animals are important because they are money banks, but more importantly the manure they generate increases land productivity. This is important because the people know it is vital to increase the productivity of their land given the acute land shortage in the area.

Expanding land under cultivation was mentioned mainly by households who had relatively more land but had a constraint of labor, or who were considering the option of hiring land.

Investing in business was prioritized, more by men than women, because men tend to be more mobile, and are less burdened with household responsibilities. Business is important in the region because it enables people to live off agriculture, given the acute land shortage. Beekeeping was also mentioned more by men than women.

Table 10: What would you do to improve household economy?

Women's aspirations	Number	Percent	Men's aspirations	Number	Percent
Diversify crops	40	47.6	Diversify crops	53	53
Acquire livestock	39	46.4	Acquire livestock	52	52
Expand land under cultivation	23	27.4	Expand land under cultivation	24	24
Invest in business	7	8.3	Invest in business	17	17
Improve agricultural methods	7	8.3	Beekeeping	10	10
Increase trade in forest product	4	4.8	Acquire more land	9	9
Acquire more land	2	2.4	Increase trade in forest products	5	5
Beekeeping	2	2.4	Improve agricultural methods	4	4

We asked respondents what inputs were necessary for them to undertake the above activities. Table 11 below shows the responses. Improved seed/seedlings, livestock and capital were the top priorities of both women and men. Closely related to these was manure/fertilizers.

Table 11: Key inputs needed to improve household economies

Inputs envisaged by women	Number	Percent	Inputs envisaged by men	Number	Percent
Improved seed/seedlings	40	49.4	Money/Capital	50	51.5
Money/Capital	33	40.7	Improved seed/seedlings	52	53.6
Livestock/improved breeds	25	30.9	Livestock/improved breeds	34	35.1
More Land	20	24.7	More Land	25	25.8
Manure/fertilizers	10	12.3	Manure/fertilizers	11	11.3
Free access to forest	3	3.7	Beehives	8	8.2
More labor	1	1.2	More labor	5	5.2
Training		0.0	Free access to forest	5	5.2

We also asked respondents how they would utilize any additional income earned by their household if the economy improved. The responses are shown in Table 12 below. The top two priorities were similar between women and men: buying land and livestock. Women rated investing in children education higher than men did. Men on the other hand rated upgrading their residential house higher.

Table 12: How would people spend additional household income?

Priorities of women	Number	Percent	Priorities of men	Number	Percent
Buy more land	54	63.5	Buy more land	61	67.0
Buy livestock	35	41.2	Buy livestock	40	44.0

Invest in children education	22	25.9	Build better house	21	23.1
Build better house	15	17.6	Invest in business	17	18.7
Invest in business	13	15.3	Invest in children education	16	17.6
Furnish home	9	10.6	Buy seed	7	7.7
Expand agriculture	6	7.1	Expand agriculture	6	6.6
By seed	4	4.7	Buy means of transport	4	4.4
Buy food	3	3.5	Furnish home	2	2.2
Save in SACCOS	2	2.4			

3.4 Civil society organization and governance

3.4.1 Collaborative Forest Management (CFM) Groups

Only 36 households (23.7%) of the household sampled said one of their members was a member of a Collaborative Forest Management (CFM) group. All the villages sampled in this survey were adjacent to ECFR boundary. However some villages had higher representation in CFM than others as shown in the Table 13 below.

Table 13: Sampled villages' representation in CFM groups

Sub-county	Parish	Village	# in CFM Group	# not in CFM group	Total HH interviewed
Bufundi	Kacerere	Rutagyengyere	7	16	23
	Kishanje	Rushayu	1	15	16
	Kashasha	Mushanje	6	11	17
Muko	Ikamiro	Rwamahano	1	33	34
	Karengyere	Kashambya	4	17	21
Kanaba	Kagezi	Gitebe	8	12	20
	Muhindura	Kamugoyi	9	12	21
			36	**116**	**152**

CFM groups are formed at sub-county level, with members originating from forest adjacent Parishes. It is thus possible that the institutions can be inaccessible to forest-adjacent communities, who are usually remote and voiceless. The following case of Muko Environmental Conservation and Development Association (MECADA), the CFM association in Muko Sub-county, illustrates this point. One of the key points shown in this case is the underrepresentation of Batwa within the CFM framework, despite the fact that they are the key users of the forest resources.

The case of Muko Environmental Conservation and Development Association (MECADA)

MECADA was initiated in 2007, with 259 members (109 women, 150 men, including 20 Batwa). The membership fee was Uganda Shillings 1,000. Buy 2015 it had been increased to Uganda Shillings 2,000. Membership by 2015 was 150, of whom 81 were women, 69 men and of these 10 were Batwa. The reduction in membership is attributed to death, migration and loss of interests because the benefits of membership were perceived as low by some of the old members who left. MECADA membership comes from three parishes: Karengyere (11 villages), Ikamiro (7 villages), and Butare (6 villages). Of these 24 villages, only 4 villages are forest-adjacent- Kagano and Kashambya Villages in Karengyere Parish, and Rwamahano and Murubindi Villages in Ikamiro Parish. Butare Parish does not touch the forest boundary. Of the nine members of the MECADA executive elected in 2012 for a 5-year term, 5 are from forest-adjacent villages, 2 are from non-forest adjacent villages, but within forest-adjacent parishes. Two are from Butare Parish, which is non-forest-adjacent. Three of the executive members are women, and one is a Batwa representative. ***(CFM FGD, Kagano Village, Karengyere)***

Majority of those in CFM had been members for 8 years (54.3%). About a third (34.3%) had been members for 3-7 years, while only 11.4% said they had been members for more than 8 years.

Seventeen households said one of their female members was a CFM member, and 30 households said one of the men in the household was a CFM member. Clearly there were more male than female CFM members in the sampled households, though the MECADA case above indicates more female membership. The cited roles of female and male members within CFM did not differ. They include participating in forest patrols, reporting illegal activities, boundary maintenance and some said women were members of the CFM executive.

3.4.2 Perceived benefits accruing to women from CFM

Access to forest resources was the most acknowledged benefit of CFM. Related to this was bamboo rhizomes, tree seedlings and seeds that were provided mainly by NGOs like Nature Uganda. Key among the resources of interest to women was firewood, since its provision is women's responsibility. Non-Batwa are allowed to collect firewood from the forest once a week, though in reality many households collect firewood multiple times a week. Batwa are allowed to collect firewood multiple times a week, because they depend it for survival through exchange for food and money.

Table 14: Perceived benefits of CFM accruing to women

Perceived benefit of CFM to the women	# of respondents	Percent
Access to forest products	16	69.6
NGO support	5	21.7
Access to bamboo rhizomes, seed and tree seedlings	4	17.4
Education events	2	8.7
Allowance's/payments	2	8.7

The respondents mentioned lack of consideration of women for leadership positions within CFM groups, the long distances walked during forest monitoring with the associated risk of being raped by their fellow male members as challenges facing women within CFM groups. The ban on forest access was also mentioned as a demotivation for active participation, since access to forest products was the main benefit of CFM.

3.4.3 Participation of the poor in CFM

We asked respondents whether CFM groups include poor people. Of the 57 people who had idea about this, 60% said they do include the poor, and 40% felt they did not.

Access to forest products was the most acknowledged benefit of CFM to the poor, and access to bamboo rhizomes for planting, crop seed and tree seedlings. Training and NGO support were also mentioned as benefits.

Table 15: perceived benefits of CFM to the poor

Perceived benefit	# of respondents	Percent
Access to forest products	21	63.6
Access to bamboo rhizomes, seedlings, seed	13	39.4
NGO support	9	27.3
Training/awareness	4	12.1
Allowance's/payments	2	6.1
Loans from group	2	6.1

The most cited challenges of the poor within CFM groups were not being considered for leadership (40%), being discriminated by fellow CFM members, including exclusion from rewarded CFM activities like boundary clearance (24%), failure to raise CFM membership fees (which some mentioned were unnecessarily high) (12%) the NFA ban on access to resources on which the poor heavily relied (16%), which exposed the poor to corrupt tendencies of some NFA staff (8%).

Of the people who knew about the existence of a CFM group in their area, 47% said the membership included Batwa. The benefit accruing to Batwa from CFM were similar to those accruing to poor people. Also the challenges facing Batwa within CFM groups were very similar to those facing poor people as enumerated above.

Among the key benefits of CFM membership are free tree seedlings from NFA and NU, bamboo stems were sold to CFM members at 300 Shillings while non-members paid 500 shillings; members got bamboo rhizomes for planting free, while non-members buy them at 1,000 shillings per stool. The CFM members mentioned that the benefits of participating in CFM are reduced by the attitude and practices of NFA staff, who often insist on charging CFM members and non-members alike.

3.4.4 Other civil society networks within the community

Savings and credit groups

Majority (71.1%) of the household sampled participate in village savings and credit groups (popularly known as Savings and Credit Cooperatives –SACCOs). Individuals participate in one or several groups. The absence of formal financial service providers coupled with the known and hidden costs of using them makes SACCOS attractive in rural areas. SACCOs have several advantages: people are enabled to regularly save in manageable amounts, the money is kept within the same community where people trust each other, members get easy access to loans when they need them, their savings act as collateral and they get to share the profits made by the SACCO at the end of the year. Both men and women are active participants in these groups. The most mentioned objective of these groups was to save and access affordable loans (87.2%) and generating and haring profits through loan interest (18.3%).

Table 16: Objectives of Village Savings and Credit Groups

Group Objective	No of respondents	Percent
Saving and accessing affordable loans	95	87.2
Generating and sharing profit	20	18.3
Buying household implements	8	7.3
Working together (production)	9	8.3
Help members in sickness/death	11	10.1
Other reasons	3	2.7

Respondents said they realized a number of benefits from participating in these groups. These are shown in Table 17 below. Access to affordable loans, sharing group profits, member support during difficult times of sickness and death, and using group profits to buy essential household needs (utensils, beddings, furniture) were the most cited benefits).

Table 17: Benefit realized by households from savings and loan associations

Benefit	Number of respondents	Percent
Affordable loans	48	48.5
Share group profits	33	33.3
Assistance in sickness/death	31	31.3
Purchase household products	30	30.3
Supply of seeds	6	6.1
Togetherness among the community	6	6.1

Apart from the village savings and loan groups, individuals from 63% of the sampled households were members of other institutions/groups among the community. These included stretcher societies (55%), labor-selling groups (23%), joint production or marketing groups (19.4%) and Beekeepers' associations (8.6%).

But the participation Batwa in these groups is still low, even where such groups were initiated by NGOs specifically to empower the Batwa, as the following case of Murubindi Village demonstrates.

The case of Murubindi Nyekundire Village Savings Group, in Kacerere Parish

During fieldwork we found members of the Murubindi Nyekundire Savings Group in one of their regular meetings. In an interview with an LC1 Chairman in Rutagyengyere Village, Kacerere Parish, who was also a member of the group, he mentioned the group was initiated by the African International Christian Ministry (AICM), an NGO, specifically to empower Batwa who had been resettled in Murubindi. The NGO however encouraged non-Batwa to be members in Muribindi and surrounding villages to offer support and encouragement to the Batwa. Originally there were 32 Batwa members.

After three years, Batwa started dropping out of the group, mainly, according to the chairman, because they had no money to save. (However during household interviews some Batwa, mentioned being stigmatized and under-looked by non-Batwa within village groups. Some Batwa even mentioned the need for Batwa-exclusive groups). By the end of 2015, the group had 71 members, of whom only 3 were Batwa. The group had jointly saved 4 million shillings, and generated 1.5 million in profit from loan interest in the year 2015. *(Interview with LC1 Chairman, Rutagyengyere, Kacerere Parish)*

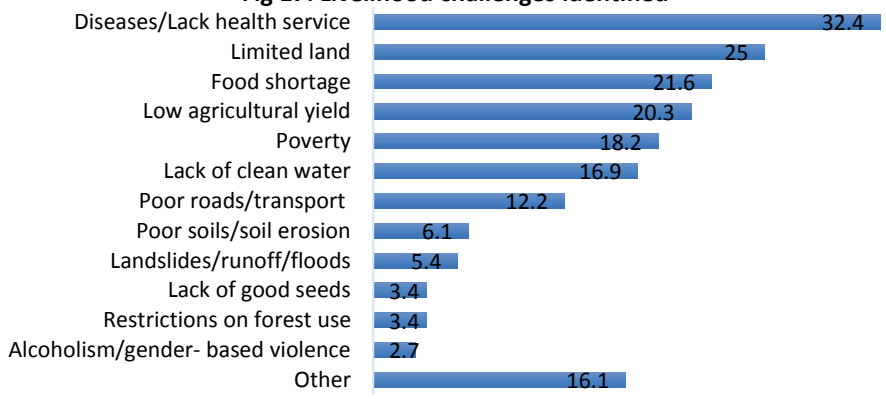
Stretcher societies

The stretcher society (local known as *Engozi* (Rukiga) / *Engobyi* (Rufumbira)) is sort of an ambulance group where every family in the village has to be a member (people become members on becoming independent households). These are the oldest and most inclusive institutions in the communities. The fact that they were mentioned as "stretcher society" by only 55% doesn't mean that those who did not name them thus are not members of such groups. The likely explanation is that these societies have widened their objectives and activities beyond assisting in sickness and death, mostly towards operating as savings and loan associations, and in some communities their names have similarly widened/changed to reflect this. As such many members do not conceptualize by their original objectives of transporting sick people to health centers and supporting bereaved families. There are very few households that are not members of village stretcher societies, and those that are not are often treated as outcasts.

3.5 Challenges affecting the community

The area around ECFR is very hilly. This poses a challenge of access to social services: roads and transport services, schools and health services, etc. This is why these issues came out strongly as challenges the community is facing. In addition, limited land and food shortage, low agricultural yields and infertile soils, all results of the very high population pressure, came out among the top challenges. The problem of gender-based violence, in some cases resulting from alcoholism was mentioned by both male and female respondents. Natural hazards like landslides and floods, triggered by heavy rains, but again resulting from poor farming methods were also identified. There is clearly need for promotion and adoption of farming methods suitable for steep and de-vegetated slopes.

Fig 17: Livelihood challenges identified



3.5.1 Challenges affecting women in meeting household subsistence and earning income

In terms of women meeting their household subsistence needs the problem of lack of water was the most mentioned. The region is hilly and water is in the valleys. For those who live up the hills, getting water in the dry season is challenging. In the rainy season many harvest water, so it's easier. And collecting water is predominantly a role of women and children.

Feeding the household is also a responsibility of women. Crops that are grown mainly for household subsistence were mainly responsibility of women. Many respondents mentioned that yields are low because of soil infertility or crop disease, making it difficult for some women to feed their households. When yields are low, women from poor households who have no money to buy supplementary food have to work for other households to get money to buy food, or even work for food. Spending valuable time working for food means that they have little time to care for families and to produce their own food. This encircles such households further into perpetual food insecurity.

The problem of limited household labor also came out strong. Because the region is dependent on seasonal crops (as opposed to perennial crops), there is a lot of cultivation to do all year round. In households where the majority members are young, the adult women have to do the bulk of this work. And some of the households are large. This is made worse in households where the husbands and other males members do not participate in cultivation, because they are doing other paid work, or just because household food production is seen as women's responsibility. Many women complained of men who spend a lot of time in bars and other places of leisure, while the women toiled away. Yet some of these women had to provide other needs for their children, including school materials and fees. Related to this was the issue of gender-based violence. Some women reported that men sell off the little food produced by the household and misappropriate the money, usually by buying alcohol.

Households with gardens at the edge of the forest mentioned crop damage by primates as a contributory factor to food insecurity.

Table 18: Challenge facing women in providing household subsistence needs and earning income

Challenge of providing household subsistence	No of respondents	Percent	Challenges of earning income	No of respondents	Percent
Lack water in dry season	26	21.3	Low crop yields/food insecurity	40	33.0
Food shortage/ Low crop yields	23	18.9	Infertile soils/limited land	28	23.1
Long distances to get water/firewood/cultivate	21	17.2	Low pay of women's labor/high levels of unemployment	18	14.9
Limited household labor/ Men do not participate in household activities	20	16.4	Inaccessible markets/low prices	16	13.2
Infertile soils	18	14.8	Heavy household workload/work for food/bad debts	11	9.1
Gender-based violence/men abandon families	7	5.7	Poor health	9	7.4
Large families	7	5.7	Gender-based violence	8	6.6
Limited land/do not own land	7	5.7	Limited business opportunities	8	6.6
Time wasted in problem animal control	5	4.1	Problem animal damage	7	5.8
Poor health	4	3.3	Restriction of forest access/Corruption by forest authority staff	5	4.2
Spend time selling labor coz of poverty	2	1.6	Limited household labor	4	3.3
			Do not own land	2	1.7

In terms of earning income, low crop yields resulting from infertile soils is a major challenge for women. It means that households can barely produce surplus for sale. As mentioned earlier, many women sell labor to earn income. However the wages offered for digging (dominated by women) are low, compared

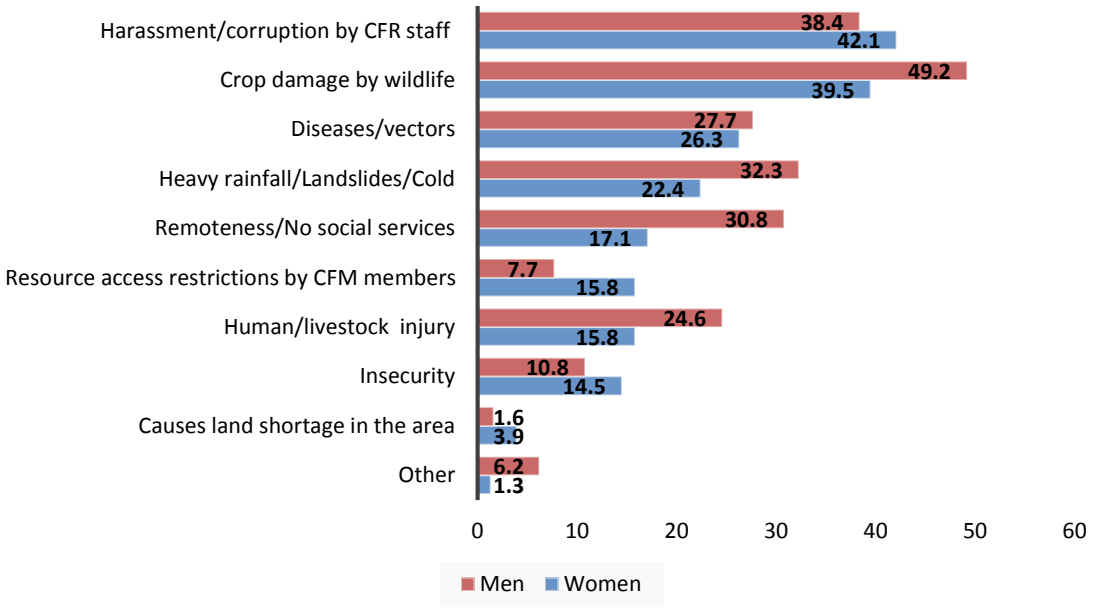
to other casual labor opportunities, e.g. carrying potatoes (dominated by men). Some women also mentioned that it is common for clients to refuse to pay them for work done (bad debts). Specifically among the poorest households (especially the Batwa), women spend time working for food or collecting forest products to exchange for food, that there is limited time to earn money. The heavy household workload (growing household food, collecting water and firewood, childcare, cooking, cleaning, etc.), all of which are predominantly women's responsibilities, also leave women with very little time to engage in productive activities that earn income. Low prices for agricultural produce was also mentioned as a challenge. Again, some women and men mentioned that in some households men discourage women earning income, and at times appropriate the income they earn, directly or indirectly through abandoning household provisioning to them.

3.5.2 Forest related problems

ECFR also comes with a set of problems that face the local communities. Top most among these was perceived harassment by the CFR staff. By the time of this survey, the National Forest authority had instituted a ban on forest product access, specifically bamboo. This is because there are concerns that the off-take levels are unsustainable. However, local community dependence on the forest is so high, that few can desist from accessing the forest. So arrests for illegal access are common. However the communities tend perceive this as harassment, not just law enforcement. Part of the reason they perceive it thus is because, they say, sometimes law enforcement is selectively applied. Related to this, some community members who are not part of Collaborative Forest Management (CFM) program blame the CFM members for restricting other community members' access to forest resources. Controlling and reporting illegal activities are some of the obligations of CFM members.

Crop damage by wildlife is another concern among the community. Forest edge farmers have to spend a lot of time guarding crops, or to hire guards in some seasons. No other problem animal management interventions were reported in this survey. Related to this is livestock and occasionally human injury by snakes and animals locally referred to as "wild dogs" (but these might as well be other carnivore species recorded in the forest (the African golden cat, serval and the side striped jackal- see Bitariho et al. 2015). The forest is also seen as a source of vectors that spread disease, mainly mosquitoes. The heavy rains associated with the forest also exacerbate the problem of landslides and inaccessibility.

Fig. 18: Perceved EFCR-related problems faced by the households



3.6 Key community level priorities

We asked respondents what they thought were the key community priorities. Clean water, better roads and health facilities and training in improved agricultural methods were the top priorities for both female and male respondents.

Table 19: Key community priorities

Priorities as perceived by women	#	Percent	Priorities as perceived by men	#	Percent
Provision of accessible/clean water	54	63.5	Better roads	50	52.1
Better roads	33	38.8	Provision of accessible/clean water	42	43.8
Better health facilities	31	36.5	Better health facilities	20	20.8
Training in improved agriculture methods	12	14.1	Training in improved agriculture methods	12	12.5
Support with livestock	11	12.9	Provide improved seed	11	11.5
Affordable solar systems	7	8.2	Cooperation among the community/labor groups	10	10.4
Easier rules for forest access	5	5.9	Support education services	10	10.4
Marketing cooperatives	3	3.5	Affordable solar systems	8	8.3
Form SACCOS	3	3.5	Support with livestock	7	7.3
Provision of manure/fertilizers/	2	2.4	Form SACCOS	6	6.3
			Govt give land to Batwa /poor people	6	6.3
			Provision of manure/fertilizers/	5	5.2
			Easier rules for forest access	3	3.1

CHAPTER FOUR: CONCLUSIONS

The local economy

The fact that only 16% of the sampled household were categorized as rich, while over half (53%) of were categorized as poor or very poor indicates high incidence of poverty among the communities. This brings into focus the need to address underlying causes of poverty in the area, including land shortage and productivity, in order to achieve conservation goals. Results also indicate that poverty incidence is higher among female-headed households than male-headed households, indicating that female-headed households are even more disadvantaged among the communities.

Plate 7: Livestock rearing is prized for income and soil fertility enhancement

While crop farming is the main livelihood source in the region, the decreasing yields from faming due to soil exhaustion and land shortage means that households are increasingly relying on supplementary livelihood sources. A third of the population around Echuya CFR depend directly on the forest for livelihood, and other households greatly depend on the resources of the forests, even though it is not their main livelihood source. Clearly, the significance Echuya CFR in the livelihood systems of surrounding communities is high, and will grow as incomes from farming decrease with land degradation. Interventions to increase land productivity are therefore key to managing the rate of resource extraction from the forest. One way to increase land productivity used in the area is use of organic manure, specifically animal waste. Thus the enabling of farmers to acquire and rare livestock (especially sheep, goats, chicken) can go a long way in increasing affordability and application of manure.

Crop farming is the back bone of the local economy. However the range of crops grown requires large unit area of land to make economic sense. Yet land shortage is acute in the region. This survey found that the few households who have ventured in the growing of non-traditional cash crops like passion fruits, tree tomatoes and mushrooms promoted by NGOs (including Nature Uganda) were earning significant income because these crops are on demand and output per unit of land is high. The need to diversify the range of crops grown was highlighted by both men and women as a strategy to improve their households' economy.

The communities realize their situation is bound to deteriorate, unless they adopt alternative practices. Among the urgent actions that can be undertaken to improve the economic situation was crop diversification mentioned above. Acquiring livestock to generate organic manure was also highlighted. Local communities know it is vital to increase the productivity of their land given the acute land shortage in the area. For these to be adopted, there is need for promotion of improved seeds/seedlings, and improved livestock breeds.

The significance of ECFR for local livelihoods

While the forest is still a significant source of livelihood for most households around, the Batwa livelihoods revolve around the forest more than other groups. Similarly, direct reliance on the forest resources is higher among the poorer households who sell resources (especially fuelwood, bamboo, ropes and grass) from the forest. Addressing the underlying causes of poverty within the communities is therefore key to the sustainable management of ECFR.

A recent biodiversity study of the forest (Bitariho et al. 2015) recoded human activity as nearly evenly distributed in the whole forest including cutting of bamboo stems, trees, grazing of livestock and footpaths crossing all through the reserve. That study recorded agricultural encroachment (potato gardens as well as freshly cleared land) in the forest and observes that this is a recent development, which has the greatest impact on the forest ecosystem. Though none of the respondents in this study reported cultivating in the forest, informal discussions with community members indicated that cultivation indeed takes place in the forest. Bitariho et al. (2015) state that given the small size of the reserve, agricultural encroachment cannot take place without the knowledge of the forest staff. Many community members we talked to also claimed CFR staff are aware of the encroachment. Clearly, this rate of forest utilization is not sustainable. To protect the forest effectively, while creating goodwill among the communities, there is need for government and development partners to engage with NFA staff at CFR level, to control illegal activities in the forest, especially agriculture which has far reaching implications for forest ecology.

Ssali and Bitariho (2013) indicate that there is an increase in intensity of bamboo harvesting in ECFR which remains the only source of bamboo for domestic and commercial use in the Kigezi region. This, according to the study, is greatly affecting the health and regeneration of the bamboo population, which will ultimately affect local community livelihoods.

Challenges facing women

The hilly nature of the region makes it difficult for communities to access water in the dry season. Water provision is a women's role, so this is predominantly a women-specific challenge. It's also women's responsibility to feed families, so they are predominantly in charge of subsistence food production. Women are directly affected when soils become unproductive. The best soils are used to grow potatoes (predominantly managed by men for sale), so women have to produce food on less fertile land. In some households men have abandoned cultivation to women, which has an effect on household food security. Heavy household workload also leaves women with very little time to engage in income-oriented activities. In some households men discourage women earning income, and at times appropriate produce or the income they earn, directly or through abandoning household provisioning to them. While this is a general problem, it affects *defacto* female heads of households within polygamous families more. Many female respondents who were second or third wives talked about husbands abandoning household provisioning to them. Physical gender-based violence against women was also reported by both male and female respondents, in most cases associated with alcoholism.

Essential service provision

Almost all the households in parishes adjacent to ECFR utilize fuelwood from the forest. The community do not perceive fuelwood as scarce, because there is ready supply from the forest reserve. Firewood is

officially collected by Batwa daily. Firewood is important for Batwa men and women's livelihoods, as an exchange commodity for food or cash. Other households also collect it multiple times a week, though officially they are allowed only once a week. And very few household are utilizing energy saving stoves. The promotion of energy saving stoves and biogas is thus a key intervention to reduce the amount of fuelwood being sourced from the forest. Since firewood collection is women and children responsibility, reducing the regularity of firewood collection would free their labor to other productive activities. Children would also have more time to study. Less than a quarter of the households have solar systems, and the main hindrance seems to be the high initial costs. Promotion of affordable solar systems would thus improve the health of the communities, contribute to the global shift towards clean energy, but also create goodwill among the communities for conservation, if the benefit is clearly linked to the forest.

Indeed lack of clean or accessible water, especially in the dry seasons, was among the most mentioned livelihood challenges and provision of clean water was a top priority identified by women and men. This is caused by the hilly nature of the region. Water provision for domestic use and, and in some households, for spraying crops is a women's responsibility. Promotion of affordable water harvesting facilities would improve the health of the households, free up women's labor to more productive activities and children's time for education. Such an intervention would also create goodwill among the communities for conservation, if the benefit is clearly linked to the forest.

Civil society organization and governance

Relative to the level of community dependence on ECFR, the representation of forest-adjacent village communities in CFM groups is way too low, to be effective. Less than a quarter of the sample households, all in forest-adjacent villages, were members of CFM groups. The fact that CFM groups are formed at sub-county level with members originating from forest adjacent Parishes may make them inaccessible to forest-adjacent villages, who are usually remote and voiceless, but yet have significant impact on the forest.

Fewer women than men are members of CFM groups and the main challenge facing women within CFM was marginalization from CFM leadership. Some women also mentioned the risk of rape by male members during forest monitoring exercises. So clearly there is need for gender mainstreaming within CFM groups, and gender awareness creation to support mutual respect among members. Similarly, the poor people and the Batwa minority in CFM groups face the challenge of exclusion by fellow members from leadership and rewarded CFM activities or through unaffordable membership fees. The corrupt tendencies of forest managers also lad to exploitation of the poor who heavily rely on the forest.

Back in 2012 a baseline done among the communities adjacent to ECFR (Nature Uganda, 2012) indicated that the level of participation in CFM was lower than expected, due to a number of factors including inability to pay membership dues or to sustain individual membership through paying annual subscription and lack of awareness of the procedures for joining CFM. The baseline recommended targeted information flow and sensitization about CFM, and the need to ease on the terms and condition relating to membership dues so that more people can afford to join or sustain membership. The baseline also recommended application of incentives for attracting and retaining membership to CFM, such targeting CFMs members for IGAs and SLM interventions. Special mention needs to be made of beekeeping. At the moment, the level of beekeeping by local communities within ECFR is lower than could be. Yet beekeeping is lucrative, and can reduce dependence on other extractive uses of the forest. In addition, an assessment of the impact of integrated conservation and development interventions around Bwindi Impenetrable and Mgahinga Gorilla National Parks revealed that local groups' stakes in the forests increased when they practiced beekeeping in there This translated into increased voluntary participation in forest management activities like fire control (Blomley et al 2010).

Majority of the household sampled participate in village savings and credit groups (popularly known as Savings and Credit Cooperatives –SACCOs). SACCOs enable members to avoid the costs of accessing formal financial services. They also have several advantages. Both men and women are active participants

in these groups. Related to these are "stretcher societies", which are the oldest and most inclusive institutions in the communities. These societies have widened their objectives and activities beyond assisting in sickness and death, mostly towards operating as savings and loan associations.

4.1 Recommendations

1. The domestication of key resources (bamboo) and tree planting for firewood and building materials as has been promoted in the previous Nature Uganda Projects should be continued as a strategic intervention to alleviate pressure on the forest resources.

2. The existing high levels of appreciation among the communities of the environmental services that ECFR brings to the local communities should be capitalised on to engage communities in responsible forest use, because they know their livelihoods depend on it.

3. Conservation intervention around ECFR need to promote energy saving technologies (e.g. cook stoves, biogas), to reduce the amount of fuelwood being sourced from the forest, free women's labor to other productive activities, and allow children more time to study.

4. Promotion of affordable solar systems would improve the health of the communities, contribute to the global shift towards clean energy, and create goodwill among the communities for conservation, if the benefit is clearly linked to the forest

5. Land shortage and the need for soil fertility enhancement is a key need among the communities. Any efforts to conserve ECFR have to promote strategies to enable community income and food security through enhancement of crop yields. Thus promotion of use of organic manure from crop residues and livestock waste keeping is key, as well as awareness creation on other sustainable land management techniques.

6. There is need for deliberate effort to make CFM pro-poor and more inclusive. The NU program needs to engage CFM groups to devise means of removing the barriers that limit participation of the poor and the Batwa in CMF. Focus needs to be put on marginalization by fellow CFM members and making membership fees affordable

7. In order to attract and retain CFM membership, additional incentives need to be part of the package. Members need to be engaged in alternative income generating activities like apiary and other sustainable land management interventions (mushroom growing, bamboo domestication, fruit farming, etc.).

8. Beekeeping as an income generating activity needs to be further promoted as part of CFM, with affirmative action to include Batwa. This will have to go hand in hand with clear mechanisms of self-policing mechanisms within groups, since honey theft from the forest was mentioned as a problem, and the Batwa are suspected to be the culprits.

9. Most households are members of village 'stretcher societies', and individual members also participate in multiple SACCOS. "Stretcher Societies" and SACCOS can be capitalised on to mobilize the communities around specific causes and activities. For example energy saving stoves and water harvesting tanks can be promoted through SACCOs. They can also be used as communication channels

10. To relieve pressure in ECFR resources, the Program must creatively engage with both communities and NFA, especially in halting agricultural encroachment. Good will has to be encouraged on both sides.

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ANNEX: SUMMARY OF BASELINE FINDINGS AND RECOMMENDATIONS

Area of work	Summary result	Key recommendation
• **Social, demographic and gender profiling**		
a. Socio economic, cultural (and political) factors including population dynamics at both community and household levels	• Areas surrounding Echuya CFR have high population density: Kabale (314 persons/km²) and Kisoro (402 persons/km²). • Average household size among forest-adjacent villages (5 people per household) is higher than the average household size of both districts • Population pressure implies extreme land shortage (20% own less than one acre of land) and fragmentation, but also pressure on ECFR resources. • The landscape around ECFR has been deforested, leaving the Forest Reserve as the only source of forest products • The risk of agricultural encroachment is also high.	• There is need for land management technologies to enhance land productivity and soil fertility management, e.g. use of organic manure. • Intensive livestock management should be promoted, to boost access to organic manure, as well as an income and food security measure • Economic activities with high output/unit area ate important should be promoted.
b. Gender composition of the communities and relationship with natural resources.	• The female-male sex ratio of around ECFR is 1.05. • Fuelwood is the primary source of energy for cooking, and firewood and water provision is primarily women and children's work. • ECFR is the main source of fuelwood among the community, and water is one of the most prized environment services communities realize from the forest. • Both men and women depend on ECFR resources for household use and income, especially firewood, craft material, bamboo stems and bean stakes. • Firewood from ECFR is a key product, especially for Batwa women because they exchange it for food and money.	• Domestication of key resources (bamboo) and tree planting for firewood and building materials should be continued as a strategic intervention to alleviate pressure on the forest resources. • Conservation intervention around ECFR should promote energy saving technologies (e.g. cook stoves, biogas), to reduce the amount of fuelwood being sourced from the forest, free women's labor to other productive activities, and allow children more time to study
c. Demographic groups with respect to natural resource management	• About 42% of the population around ECFR are Bakiga, 41% are Bafumbira and 17% are Batwa. • While all these ethnic groups are heavily dependent on the forests for material resources and environmental services, Batwa are heavily depended on forest resources (especially bamboo, fuelwood, stakes and other craft materials) which they use for sale and barter exchange for food.	• The high levels of dependency of the community on the material resources and environmental services from ECFR should be capitalized on to engage communities in responsible forest use, because they know their livelihoods depend on it.
• **Economic profiling and opportunities**		
a. Wealth status, income sources, land and natural resources ownership.	• 16% of the sampled households were identified as and a third of the sampled households were in the middle-income group • Over half of the population around ECFR are characterized as poor or very poor. This indicates high incidence of poverty among the communities.	• Some intervention that require significant resources (land, money) can be targeted towards the rich and middle income groups, who will then act as role models for other households. The rich and middle income households with significant land acreage should be targeted for tree planting so as to reduce their reliance on ECFR for wood products.

Area of work	Summary result	Key recommendation
	• Incidence of poverty is higher among female-headed households than male-headed households. • Female-headed households were more represented in the two bottom income groups than male-headed households, while male-headed households were more represented in the top three income groups. This indicates the disadvantaged positions of many female-headed households among the communities. • Less than a quarter (17%) of the households were *officially* headed by females. However many more households are *defacto* female headed households because of polygamy and male migration in search of economic opportunities. Such households are disadvantaged in economically and socially.	• The richer households should also be targeted for adoption of subsidized solar systems, household biogas plants and water harvesting tanks because they can afford it. These will then become role models for other households. • At the same time, conservation and development interventions need to apply affirmative action in favor of the poor households, and in particular the *dejure* and *defacto* female headed households in order to improve equity in access to resources and services.
b. Employment, employment sector, specific areas engaged in within the employment sector	• Only about 5% of the households earn income from formal employment. These are among the households in the higher income groups. But employment is not among the top sources of income for most households. • 35% earn income from selling casual labour, especially among poor and very poor households. • Demand for casual labor is mainly in land cultivation (dominated by women) and carrying produce from gardens to markets (dominated by men and the Batwa). • High availability of casual labor opportunities has negative implications: some households' food security is at risk because they spend little time on their own farms, and children are lured from school to earn a quick buck.	• There is need for empowering the poorest households who are the main sellers of casual labor to engage in activities that yield food and cash for their households so that they are not forced to sell their labor. • To ensure inter-generational evolvement of households from extreme poverty, there is need for awareness creation on the need to keep children in school and the dangers of child labor among the community.
c. Segregation of roles, responsibilities (labor) in households	• Men are predominate growing and management of cash-oriented crops (Irish potatoes, passion fruits, tomatoes, onions and wheat), and control the resultant income. • Women predominate growing of crops for household subsistence (peas, sweet potatoes and beans), as well as weeding of cash crops. • Women are also responsible for household reproduction activities (fuelwood and water provision, childcare, cooking, cleaning) and small livestock care).	• Conservation and development interventions need to include support activities that men and women do. Income generating activities that women are able to engage in at home should be supported, because they enable them to combine production and reproductive responsibilities. • Interventions aimed at food security enhancement should particular involve women because food provision is their responsibility.
d. Access to basic needs (communication, social services, energy, water etc.) a forest related economic opportunities in the areas.	• All the household sampled used fuelwood for cooking, and 97% use fuelwood collected from ECFR. Only 13.1% had solar systems • Rain water harvesting is the most commonly accessed source of water among the community. Many households fetch water from	• Conservation intervention around ECFR need to promote energy saving technologies (e.g. cook stoves, biogas), to reduce the amount of fuelwood being sourced from the forest, free women's labor to other productive activities, and allow children more time to study.

Area of work	Summary result	Key recommendation
	inside the forest, and water is one of the highly recognized benefits from the forest. • Over half (53.2%) of the sampled household have access to a radio. Radios are mainly owned by men in the households (94%). Half (50%) of the household have access to mobile phones.	• Promotion of affordable solar systems would improve household health, contribute to the global shift towards clean energy, and create goodwill among the communities for conservation, if the benefit is clearly linked to the forest • Conservation programs should increase households access to water harvesting technologies (e.g. through subsidies) to create good will in favor of conservation • The relatively good access to radio and mobile phones should be capitalized on as media of conservation education and to enhance community participation in interventions.
e. Opportunities for synergies and integration into existing sustainable development programs in the area.	• Non-traditional cash crops like passion fruits, tree tomatoes and mushrooms promoted by NGOs (including Nature Uganda) are among the top income for the few households that are growing them.	• These crops should be further promoted among communities because the yield per unit of land is high and their markets are good
f. Markets, access to markets and viability of products from the households to support income generation and wealth creation.	• 90.2% sell one or more products or crops. Irish Potatoes, beans, crafts and craft making material, sorghum, bamboo stems, peas and bean stakes top the list of products sold by households. • Women mainly sell products from home, within their village or at nearby trading centers because they are less mobile due to other household responsibilities. So they sell at low prices to local middle men, while men access further away, and more lucrative markets. • The government is working on the roads, which is good indicator. But many communities remain inaccessible due to terrain.	• There is need to improve access to markets through better road access. • Development agencies need to devise more efficient crop value chains, and post-harvest handling mechanisms to increase incomes from crop sales.
• **Civil Society organization and governance**		
a) The proportion of the community in the CFM association	• Only 36 households (23.7%) of the household sampled said one of their members was a member of a Collaborative Forest Management (CFM) group	• To attract and retain CFM membership, additional incentives need to be part of the package. Members need to be engaged in alternative income generating activities like apiary and other sustainable land management interventions (mushroom growing, bamboo domestication, fruit farming, etc.)
b) Household (individual) membership to the CFM association	• There are more male than female CFM members. • 60% of the respondents said their CFM groups include the poor, and 40% felt they did not. • 47% said their CFM group membership included Batwa.	• There is need for deliberate effort to make CFM pro-poor and more inclusive. • The NU program needs to engage CFM groups to devise means of removing the barriers that limit participation of the poor and the Batwa in CMF. Focus needs to be put on marginalization by fellow CFM members and making membership fees affordable

Area of work	Summary result	Key recommendation
c) Clear understanding of the governance structure of the Associations and internal democracy	• Lack of consideration of women for leadership positions within CFM groups was mentioned as a problem faced by women, Batwa and the poor in general within CFM groups. • Long distances walked during forest monitoring with the associated risk of being raped by their fellow male members is a challenges facing women. • The ban on forest access demotivates participation in CFM, since access to forest products was the main benefit of CFM. • The poor and Batwa were said to be excluded from rewarded CFM activities like boundary clearance. High CFM membership fees also exclude the Batwa and the poor in general.	• As above
d) Roles and responsibility of the member in the CFM group.	• The cited roles of CFM members included participating in forest patrols, reporting illegal activities and boundary maintenance. In return the communities get access to forest resources including fuelwood, bamboo rhizomes and tree seedlings and seeds provided mainly by NGOs like Nature Uganda. • The CFM members and general community feel they are being restricted from accessing forest resources while more connected groups encroach on forest land	• To relieve pressure in ECFR resources, the Program must creatively engage with both CFM groups and NFA, especially in halting agricultural encroachment. Good will has to be encouraged on both sides.
e) The existence of any other cooperative or social activities (saving schemes)	• 71.1%) of the household sampled participate in village savings and credit groups (SACCOs). • All the households are members of village stretcher societies (ambulances). These are the oldest and most inclusive institutions in the communities.	• "Stretcher Societies" and SACCOS can be capitalized on to mobilize the communities around specific causes and program activities. For example energy saving stoves and water harvesting tanks can be promoted through SACCOs. • They can also be used as communication channels
• **Networks and networking opportunities**		
a) Identify existing groups/ networks within the target communities, their roles and focus	• All the households are members of village stretcher societies (ambulances). These are the oldest and most inclusive institutions in the communities. Their original objectives were to help member households during sickness and death, by transporting sick people to health centers and supporting bereaved families. But these groups have gradually widened their focus mostly towards operating as savings and loan associations. • 71.1%) of the household sampled participate in village savings and credit groups (SACCOs). • There are also various "labor group", mainly women groups that sell labor jointly.	• These groups can form strong basis for mobilizing communities around specific program activities. The fact that they are already in existence, and most are strongly cohesive should ease community outreach.

Area of work	Summary result	Key recommendation
d) Forest resources use by minority groups (Marginalized Groups)	All the Batwa households sell forest products including weaving materials, fuelwood, bamboo stems and bean stakes. In addition, Batwa households barter these products for food (especially fuelwood and grass). Over half of the poorest households (52.3%) and 12.5% of the poor households sell fuelwood from the forest. Male-headed households undertake commercial use of forest resources more than female-headed households, and sell a wider variety of resources. Female-headed households sold craft material, bamboo stems and firewood.	• Collaborative forest management should involve and specifically target Batwa because their livelihoods revolve around the forest, to encourage them to practice sustainable use of the forest.
e) Extension and Social services workers in landscape and opportunities for linkages.	• The International Fertilizer Development Centre (IFDC) is operational in the areas around ECFR. It is promoting the use of agri-chemicals to increase land productivity, but also improving the road network system to improve market access.	• NU should collaborate with IFDC to synergize around the agricultural extension services offered by IFDC to incorporate sustainable land management, and to ensure that the agro-chemicals being promoted are conservation friendly (e.g. do not have negative impact on pollinators and apiary in general).
g) Linkages with local governments and government programs addressing ENR issues	• NFA has a program of supplying bamboo rhizomes to farmers for domestication at a fee.	• This program should be strengthened and expanded to ensure that all households have bamboo plots, because all need bamboo for home use and sale.
• **Community participation and participation opportunities**		
a. Identify options for community participation in resource management	• Both men and women prioritized crop diversification are for food and economic security, as well as adoption of crops with high output per unit including passion fruits and mushroom production as interventions that can improve their household economies. Livestock, especially sheep and goats were prioritized as money banks, but more importantly for manure to increases land productivity. Business and beekeeping were also highly prioritized by men, as options that .enable people to live off agriculture, given the acute land shortage.	• NU needs to continue interventions started under previous projects, including apiary and other sustainable land management interventions (mushroom growing, fruit farming, etc.). Promotion of livestock as a sustainable land management intervention should also be considered. Apiary projects need to target Batwa specifically, because the non Batwa claim they steal their honey from the hives.
c. Suggest areas which can be considered incentives by communities for participation in natural resources management	• Land shortage and the need for soil fertility enhancement is a key need among the communities. At household level, both women and men identified access to improved seed/seedlings, livestock and capital as the top priorities to enable their households improve their food security and incomes. Closely related to these soil enrichment through access to manure/fertilizers	• Conservation initiatives around ECFR have to promote strategies to enable community income and food security through enhancement of crop yields through promotion of use of organic manure from crop residues and livestock waste keeping is key, as well as awareness creation on other sustainable land management techniques
d. Come up with community priority needs	• The top community –level priorities identified by both men and women included access to clean water, better roads and health facilities and training in improved agricultural methods.	• NU and other conservation and development agencies need to lobby government to improve access to basic social services in the region

Area of work	Summary result	Key recommendation
		• NU should prioritize training on sustainable land management and improved agricultural practices
e. Come up with community primary challenges and hindrances to participation in NRM	The top mentioned challenges include: • Access to social services (roads and transport services, schools and health services) were the most mentioned challenges • Limited land and food shortage, low agricultural yields and infertile soils, all results of the very high population pressure, came out among the top challenges. • Gender-based violence, in some cases resulting from alcoholism was mentioned by both male and female respondents Challenges related to ECFR include: • Perceived harassment by the CFR staff (restrictions on resource access, arrests and fines) and perceived selective application of law enforcement. • Non-CFM members blame the CFM members for restricting other community members' access to forest resources. • Crop damage by wildlife • Occasional human injury • Vectors that spread disease, mainly mosquitoes • Heavy rains associated cause landslides and inaccessibility	• NU and other conservation and development agencies need to lobby government to improve access to basic social services in the region • NU should prioritize training on sustainable land management and improved agricultural practices • The CFM program needs to be reviewed, to strengthen provisions, and encourage parties to agreements (NFA and CFM groups, Local Government) to fulfill their commitments. The review proves will also act as a dialogue and conflict resolution mechanisms. • In areas with severe wildlife damage, dialogue needs to be initiated between NU, NFA and the affected communities on suitable problem animal management methods.
f. Outline suggestions on how the communities think they can participate in averting the challenges	• Communities perceive provision of clean water, better roads and health facilities as a function of government • On their part, they identify being trained in improved agricultural methods, and forming groups to mobilize resources among themselves. The groups are also seen as mechanisms of receiving extension services.	• NU and other conservation agencies should target the already existing community groups (SACCOS, Stretcher Societies, Labor Groups) as media for conservation and sustainable agriculture extension messages.