

**CGIAR Research Program on
Climate Change, Agriculture and Food Security (CAAFS)**

**Village Baseline Study:
Site Analysis Report for Albertine Rift –
Hoima, Uganda (UG0103)**

October 2012

**L. Onyango, J. Mango, C. Bukenya, Z. Kurui, B. Wamubeyi,
P. Birungi, V. Barongo**

Edited by: C. Perez, W. Förch, L. Cramer



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CCAFS Coordinating Unit - Department of Agriculture and Ecology, Faculty of Life Sciences, University of Copenhagen, Rolighedsvej 21, DK-1958 Frederiksberg C, Denmark. Tel: +45 35331046; Email: ccaafs@life.ku.dk

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The tools and guidelines used for implementation of the village baseline study across all CCAFS sites, as well as the mapping outputs at a higher resolution can be accessed on our website (<http://ccaafs.cgiar.org/resources/baseline-surveys>).

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Abstract

The village baseline study of Kibaire village in the CCAFS benchmark site Hoima in Uganda took place from 13 to 16 July 2011. Forests are exploited at unsustainable levels in Kibaire but deforestation does not appear to be a serious threat because the tree population is still relatively high. Most of the forests have been leased to private individuals as part of the privatisation policy being implemented in Uganda. Wetlands are also increasingly subjected to overexploitation and pollution from brewing and other activities. Farming at both subsistence and commercial level is increasing at the expense of forests. Community access to forest resources is restricted.

Participants identified 29 organisations working in the community, two-third of them operating from outside the locality. Participants said that they did have plenty of food in the village, and women expressed that they had never had a food crisis. Nonetheless, half of the organisations men and women identified were involved in some form of food security related activity, and notably food availability. Less than one-third of the organisations addressed natural resources management, and most of them were from outside the community.

Organisations are the most significant source of information on agriculture. Farmers also get information through the many radio stations in the area that air many programs in local languages.

Keywords

Baseline; Uganda; village study; participatory mapping; organisations; access to information

About the Authors

Onyango, Leah – Lecturer-Chairman-Department of Urban and Regional Planning-Maseno University, Private Bag, Maseno, Kenya

Mango, Joash – Senior Technician, ICRAF GRP 5 and East Africa region; World Agroforestry Centre, P.O. Box 2389 Kisumu, Kenya

Kurui, Zena – Estate management officer, Ministry of Housing. P.O Box 30119-00100 Nairobi, Kenya

Wamubeyi, Brian – Freelance GIS Practitioner/Consultant. P.O. Box 3613-40100, Kisumu, Kenya

Bukenya, Christopher – Lecturer, Department of Extension and Innovation, College of Agricultural and Environmental Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda

Birungi, Pauline – Research Officer (Rural Sociologist) Bulindi Zonal Agricultural Research and Development Institute. P.O. Box 101, Hoima, Uganda

Barongo, Vincent – Agricultural Advisory Service Provider, Buliisa Town Council, National Agriculture Advisory Services (NAADS), P.O. Box 228, Masindi, Uganda

Perez, Carlos – Independent Consultant, 28 Wheeler Pl., West Nyack, NY 10994, USA

Förch, Wiebke – CCAFS science officer, Theme 4 (Integration for decision making); International Livestock Research Institute (ILRI), P.O. Box 30709, Nairobi, Kenya

Cramer, Laura – CCAFS consultant, Theme 4 (Integration for decision making); International Livestock Research Institute (ILRI), P.O. Box 30709, Nairobi, Kenya

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Introduction

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic ten-year partnership between the Consultative Group on International Agricultural Research (CGIAR) and the Earth System Science Partnership (ESSP) to help the developing world overcome the threats posed by a changing climate, to achieving food security, enhancing livelihoods and improving environmental management. In 2010, CCAFS embarked on a major baseline effort at household, village and organisation levels across its three target regions, namely East Africa, West Africa and South Asia (more information about CCAFS sites is available on our website <http://ccafs.cgiar.org/where-we-work>). CCAFS trained survey teams from partner organizations in the three regions to conduct the baseline.

The baseline effort consists of three components – a household survey, village study and organisational survey. (1) The household baseline survey, a quantitative questionnaire on basic indicators of welfare, information sources, livelihood/agriculture/natural resource management strategies, needs and uses of climate and agricultural-related information and current risk management, mitigation and adaptation practices, was implemented by CCAFS partners in 35 sites (245 villages) with nearly 5,000 households in 12 countries to date. (2) CCAFS partners are implementing village baseline studies (VBS) and (3) organisational surveys in one out of the seven villages within each CCAFS site where the household survey was implemented. The plan is to revisit these villages in roughly 5 years, and again in 10 years, to monitor what changes have occurred since the baseline was carried out. The goal is not to attribute these changes to the program, but to be able to assess what kinds of changes have occurred and whether these changes are helping villages adapt to, and mitigate, climate change.

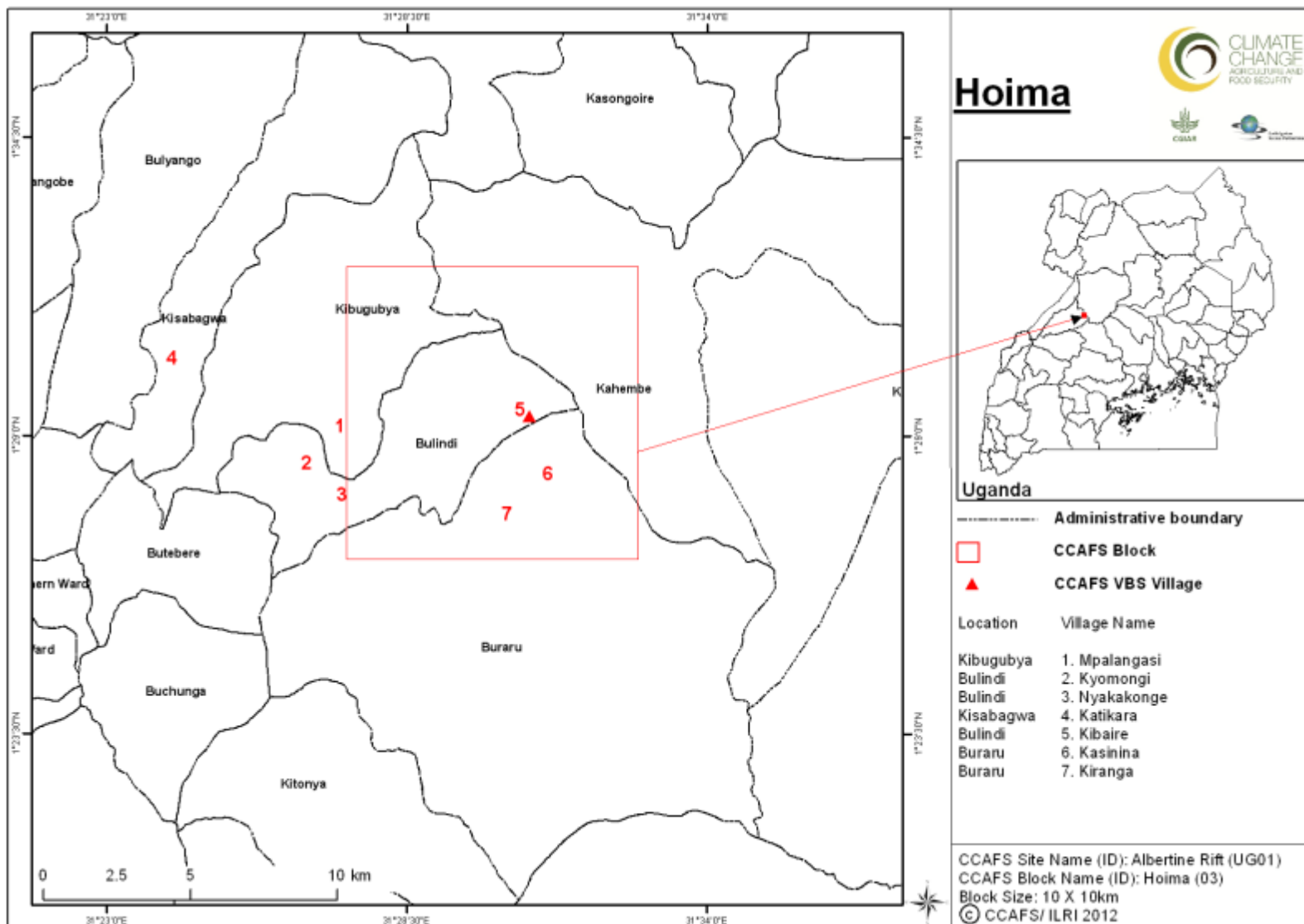
The focus of this site analysis report is the village baseline study (VBS). To date, fifteen VBS were conducted in the three CCAFS regions. The VBS aims to provide baseline information at the village level about some basic indicators of natural resource utilisation, organisational landscapes, information networks for weather and agricultural information, as well as mitigation baseline information, which can be compared across sites and monitored over time.

The objectives of the village baseline study are to:

- Provide indicators to allow us to monitor changes in these villages over time. In particular, changes that allow people to
 - Manage current climate risks,
 - Adapt to long-run climate change, and
 - Reduce/mitigate greenhouse gas emissions
- Understand the enabling environment that mediates certain practices and behaviours and creates constraints and opportunities (policies, institutions, infrastructure, information and services) for communities to respond to change
- Explore social differentiation:
 - Perceptions of women and men will be gathered separately to be able to present different gender perspectives.
 - Focus group participants will be selected to present perceptions of groups differentiated by age.

The detailed tools and guidelines used for the implementation of the village baseline study across all CCAFS sites, as well as the manuals, data and analysis reports can be accessed on our website (<http://ccafs.cgiar.org/resources/baseline-surveys>).

Map 1. Location of the Kibaire village in the Albertine Rift – Hoima site, Uganda



This report presents the results of the Village Baseline Study (VBS) conducted on 13 to 16 July 2011, in the village of Kibaire, in the CCAFS Hoima site, Kenya (Map 1). The village geo-coordinates are 1.491; 31.516. Kibaire was chosen for the VBS because of its relative central location in the 10km x 10km sampling frame. There is reasonable accessibility to the village although in the event of heavy rain the roads can be difficult to navigate. The survey team was composed of two facilitators, two note takers and two translators. Each pair was male and female. Consultations were made with the village authorities concerning time and place of meeting. The authorities selected the chief's palace as an appropriate venue. The site team leader sent out invitations to three sets of participants who were chosen using random sampling. Each group was composed of 15 men and 15 women. Three consecutive days were selected for the survey, and on each day only one set of participants was expected to participate. The whole community was invited on the first day for an introductory session where the survey was explained to them and results of the earlier household survey were shared. After the introductory session the rest of the community was released and only the invited group of 15 men and 15 women remained behind to carry on with the survey. At the end of the third day, when the survey was completed, the whole community was again invited to attend a debriefing session where the team shared a summary of the findings.

The survey used participatory methods of data collection. Throughout the data collection process two groups were used, one of male and of female members of the community. This was to allow for collection of gender-differentiated information. Information generated from this VBS was captured on sketches, maps, flip charts, information cards and notes. All these needed to be brought together in one debriefing report from which this site analysis report is written. Photographs were also taken of all the activities and information generated at each stage. The debriefing report was prepared in the field so that it could benefit from the presence of the site team. The notes form the base of the report. In the final report computer-generated maps and diagrams replace the photographed sketches and maps originally inserted in the debriefing report.

Data analysis

Topic 1: Community resources - participatory satellite imagery interpretation and visioning

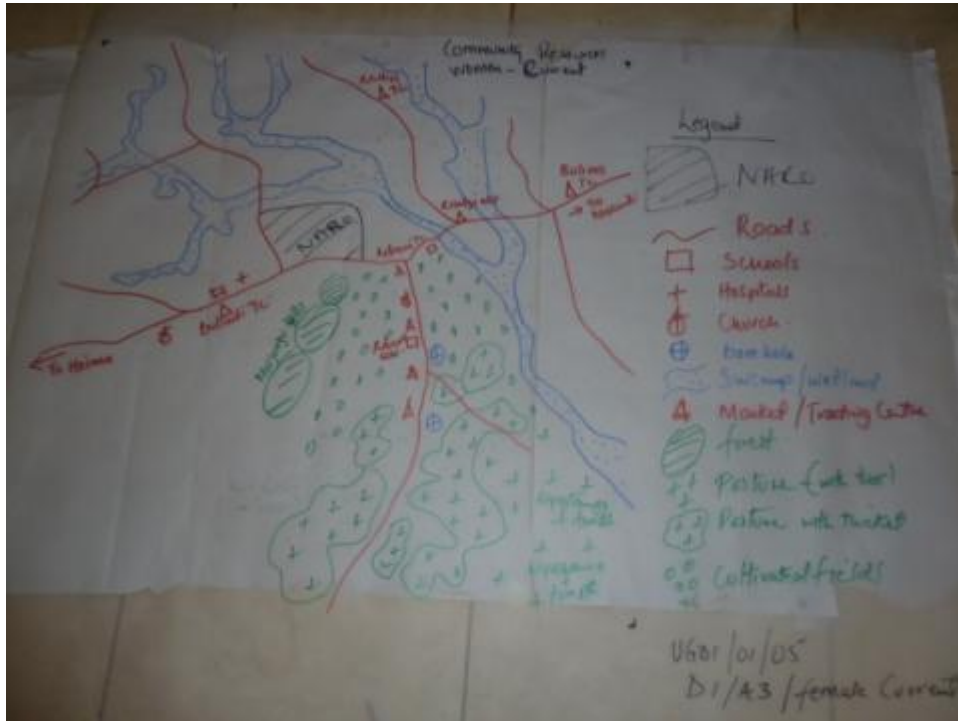
Community infrastructure and resources and gender-differentiated access and utilisation of those resources have been analysed, based on a process of participatory visual interpretation of high-resolution satellite imagery (RapidEye). The aim was to create a basic understanding of existing community resources, as well as of community dynamics in relation to its environment. The participants discussed the current state of those resources, in terms of quality, access, management, history and potential drivers of change. Another group developed an image of village resources and human well-being into 2030 to understand opportunities, constraints and aspirations for the future. The detailed approach to this exercise is outlined in the CCAFS Village Baseline Study Implementation Manual (follow the link to the baseline study from our website <http://ccafs.cgiar.org/resources/baseline-surveys>).

A. Current resources

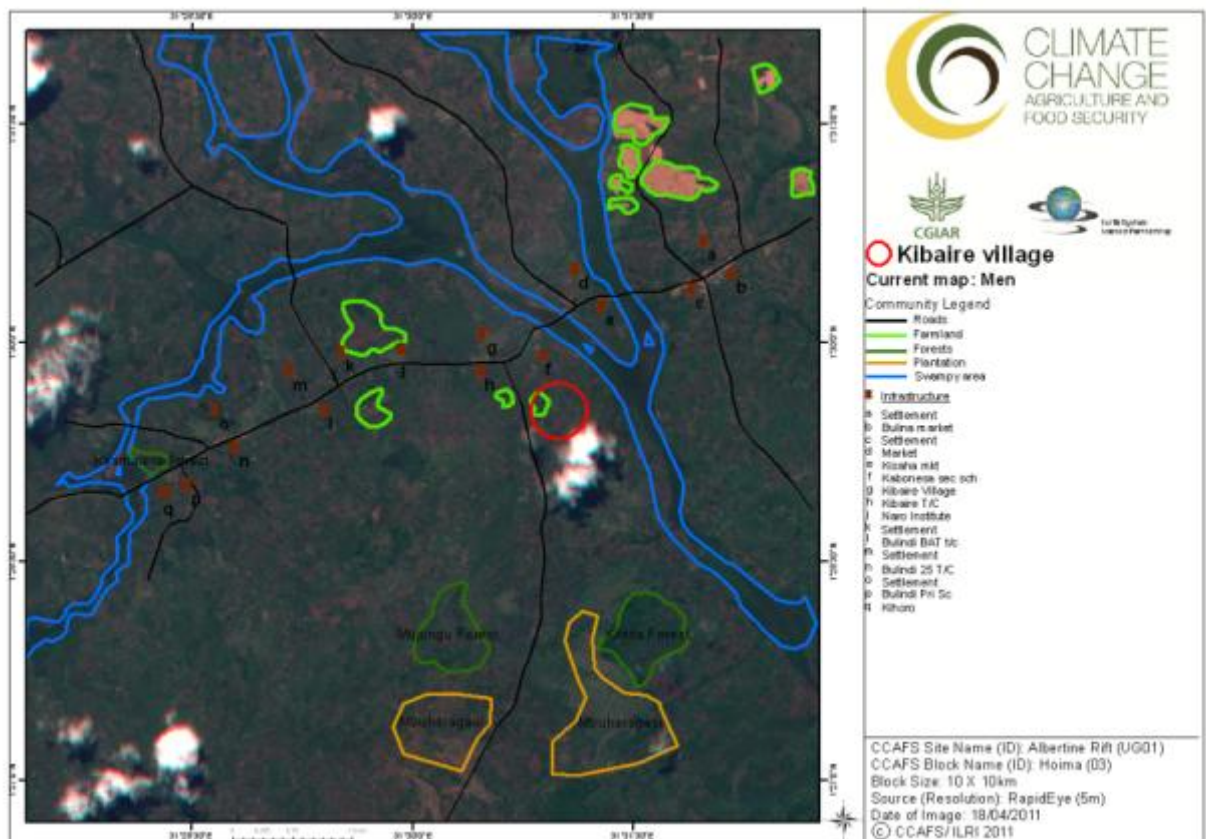
Separate groups of men and women met to map resources that are important to the community. The initial diagrams were drawn on the floor using chalk and discussed by the group to arrive at a consensus before being transferred to paper. The CCAFS team then showed the satellite image to the groups. During the satellite image interpretation, men identified the ploughed land, roads, swamps and buildings, while women started by searching in the image for areas they frequently visit, i.e. where they fetch firewood, the church, market, trading centre, health centres and schools. Once they found their bearings, the groups marked the landmarks on a piece of paper placed on top of the satellite image. The process of working with the groups to identify the resources that are important to them depended entirely on how well they were able to understand and interpret the satellite image. The appreciation of scale was important for them to get their bearing on the image. Also, it was

critical for the both the CCAFS regional team and the local team to understand the block well in advance. The exercise could not be rushed and took a lot of time (Photo 1 and Maps 2 and 3). Both male and female participants identified three types of natural resources that are listed in Table 1, below.

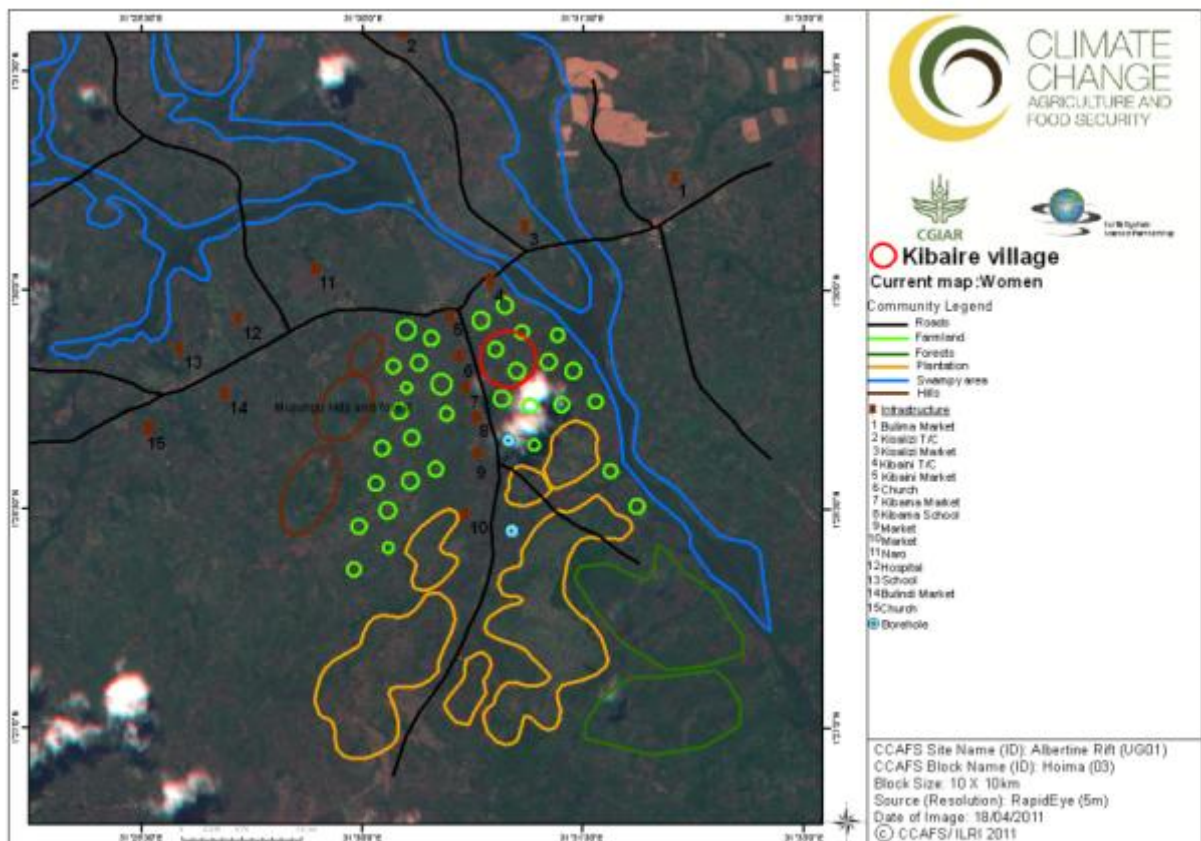
Photo 1. Current conditions mentioned by women regarding natural resources and infrastructure



Map 2. Men's map of current community resources



Map 3. Women's map of current community resources



Extensive forest network covers the area including Kiisita, Mujunga, Mbuharagasi, Kyamalera, and Nyasano. The forests are a source of firewood, timber, poles for construction, traditional herbs and charcoal. There is extensive and uncontrolled exploitation of the forest resources and as a result the area under forest is reducing. Women collect firewood without restrictions. The individual use of the resources, however, cannot be compared with the commercial exploitation taking place. Trucks ferry charcoal and logs from the village to as far as Hoima town or Kampala town. The community are left to watch as the resource is depleted.

Kyamalera and Mujunga forests are government owned. Kiisita is a government reserve leased to individuals for management. People believe that the forests are linked to rainfall. Other environmental services include a habitat for chimpanzees, a windbreak and a supply of fresh air. Private management of the forest denies access to the public.

There are forested hills such as Mujungu hills on government land and from which the community collects firewood. There are also wooded grasslands, including Nyasanga and Nyatanga, where the community obtains pasture for the animals, charcoal, firewood and mushrooms. There is adequate grass in these areas. These areas, however, are privately owned or leased from the government by individuals. Private ownership or management restricts access to community members.

Table 1. Summary of current situation, as perceived by men (M) and women (F)

| Land cover class | Community determined land use | Location Names | Current state (quality) | Time to resource | Management and ownership issues | Environmental Benefits | Opportunities | Limitations |
|------------------|---|--|---|--|--|--|--|---|
| Forest (M) | Firewood collection. Lumbering. Collection of medicinal herbs. Charcoal burning. | Kiisita Mujunga Mbuharagasi Kyamalera | Encroached into and therefore decreasing in size. | 2 hours to Kyamalera 40 min to Mujunga and 2 hours to Kiisita on foot. | Kyamalera, Mujunga are gov-owned. Kiisita is gov. reserve leased to individuals. Gov. regulates access/ use. | Source of rainfall. Habitat for chimps. Windbreak, fresh air. | Firewood, timber, poles for building, traditional herbs, charcoal. Income through sale of products. | Farm owner restrictions. |
| Forest (F) | Fuel wood and timber for building | Mujungu, Myasano | Has many trees | | Government reserve leased to private investors | Attract rainfall | Firewood, charcoal, rainfall | Individually owned; access denied by owner |
| Swamp (M) | Papyrus harvesting. Yams and vegetable growing (horticulture). | Kyamalera Kiha Kachukura Walugogo | Good condition. Same size as before. Water quality getting bad over time. Water levels reduce during droughts. Papyrus regenerate after cutting but are smaller, weaker than in before. | 30-35 min by foot (Kiha, Kachukura) 2 hours by foot (Walugogo, Kyamalera). | Government owned though no control over its use. Only Kyamalera is open access | Restrictions of access by land owners surrounding wetlands. Chimpanzee habitat (Kyamalera) | Water for animals. Habitat (Colobus monkeys, mudfish). Moisturises neighbouring soils. Brings rainfall. Kyamalera has dangerous wild animals | Water for drinking, carwash, brick making. Local breweries/ distillers. Papyrus harvesting for sale, handicrafts, employment for tour guides, tourism income. |
| Swamp (F) | Brick making, papyrus mats, local brew. Irrigation. Source of water for livestock and domestic use. | | Pollution from local brew, Scaring landscape from brickmaking. Reliable water supply, although not clean. Cultivation along swamps. | 30 mins | Open access for all. No form of management. | Attracting rainfall. Source of water during dry spell but water not good for consumption | Cultivation of neighbouring land in dry spell. | No control on use of wetland -Political interference when you try to stop brewing of local beer |

| Land cover class | Community determined land use | Location Names | Current state (quality) | Time to resource | Management and ownership issues | Environmental Benefits | Opportunities | Limitations |
|------------------|--|--|---|-------------------------|---|------------------------|---|--|
| Grassland (F) | Wooded grasslands as pasture for animals, for charcoal, firewood, mushrooms. | Nyasanga, Nyatanga | There is adequate grass in these areas | 30 min | Privately owned. Leased by gov to individuals | | Livestock grazing | Private ownership limits access. |
| Woodlots (F) | | | In good condition though affected by fire | 2 hours on foot at most | Gov. owned but leased to individuals to manage | | Rainfall, windbreaks. | Guarded by individuals |
| Roads (M) | | | Generally bad condition: muddy when it rains and potholes | 20 minutes | Owned by gov. Main road managed by Public Works, feeder roads managed by sub-county | | Facilitates movement to markets. | The bad conditions |
| Road network (F) | | Hoima to Masindi, to Kyabanata, to village. | Murram, earthroads. | | | | | |
| Wells (F) | Borehole | Kibaire kiranga | Long queue as water is clean. Sometimes boreholes dry for up to two months. | 3 hours | Owned and dug by gov., managed and used by community for free. | | Water for domestic use and for animals. | Sometimes the boreholes dry up |
| Wells (F) | Shallow well | Kila, Kachukula, near swamp. | Never dry up and also no queue. | 1 hr | | | | |
| Schools (M) | | Kabonesa Sec. School Bulindi BCS Prim. School | Generally bad state. | 2 hours maximum on foot | Owned and managed by government | | Education for their children | No limitation since there is Universal Education |
| Schools (F) | | Kibaire primary school, Kisalizi | Their children go to these schools | | | | Education for their children | |

| Land cover class | Community determined land use | Location Names | Current state (quality) | Time to resource | Management and ownership issues | Environmental Benefits | Opportunities | Limitations |
|--------------------------------|---|--|--|--|---|-----------------------------------|---|---|
| Market and Trading Centres (M) | | Bulima, Bulindi, Kibairo, Kisalizi, Bulindi BAT, Bulindi 25. | Bulima and Bulindi are in good condition while rest are not. | 20 min to Kibairo, 1 hr to Bulima, 40 min to Kisalizi, 1 hr to Bulindi BAT, 1.5 hrs to Bulindi | Managed by local council (LC1) headed by chairman. Belongs to government and is tendered to individuals | | Market for agric. produce and for buying household goods. Economical alternative to travelling to bigger towns. | |
| Churches and Mosques (M) | | Church of Uganda | No seats, dusty floors, limited space. | On foot, from 5 minutes to 2 hours. | Owned by community but managed via committees. | | | Behaviour restrictions for Muslims. |
| Government research centre (M) | | NARO-BUZARDI | | 30 minutes by foot | Owned and managed by gov. Currently at national level | | Source of new crop varieties, farmer advice. Source of food during scarcity. | Guards manning gates. Some “unfriendly” officers. |
| Farmland (M) | Sugarcane, coffee, maize and cassava plantations. Woodlots. (M) | NARO Farms. Mbuharagasi woodlots. Lubona sugarcane. Outgrower plantations. | Reduced soil fertility hence low yields | 2 minutes to nearest and 40 minutes to farthest on foot | Government farm e.g. NARO while rest are Private farms | Trees on farmlands bring rainfall | Food and trees. Fields for research. Sale of agricultural output for cash to pay school fees. | Low soil fertility. Land fragmentation. |
| Farmland (F) | Cultivated fields (F) | Along Masindi road and near Kasito sec. school | Soil fertility is declining | | Private land, some hire land for cultivation | | They grow crops for food and commercial | Low soil fertility |

There are extensive wetlands in the area. The swamps are located at Kyamalera, Walugogo, Kiha and Kachukura. They are used for harvesting wetland products, cultivation of yams and vegetables, brick making, brewing of local beer, car wash, watering livestock and as a source of water for domestic use. Many of these activities generate self-employment. There is also tourism linked to the wetlands creating employment for tour guides. Papyrus regenerates after cutting but the quality has degenerated over time. Hence, the papyrus is smaller and weaker than in earlier years. The quality of water is getting bad over time. The water levels go down during droughts. The local brew pollutes the wetlands, and brick-making scars the landscape. The wetlands are a reliable source of water especially during the dry spell although sometimes the water is not clean. The wetlands are public lands with open access. There do not appear to be any forms of control or management of the wetlands and its resources. The wetlands are habitat for mudfish and also provide drinking points for the wildlife in the nearby forests such as Kyamalera. The land near the wetlands is moist even during the dry spell and can be used for cultivation. The local community associate the wetlands with the formation of rain.

In Kibaire village the cultivated crops include sugarcane, coffee, maize, cassava and vegetables. There is a NARO institute at the site from which the farmers get agricultural extension services. Most of the cane farmers are outgrowers for the Lubona sugar plant that is located along the Masindi road. The soils are in relatively good condition but yields are decreasing. The cultivated fields are found within the homesteads and beyond. Some farms are government-owned though leased to individuals for management, while others are hired from individuals, but most cultivated land is privately owned. Some of the farm produce is for subsistence while some is for sale to generate household income.

The main road that passes through the village is the Hoima /Masindi road. This is a murrum road whose condition deteriorates during the rainy season. There are smaller roads such as the one from to Kyabanata and another to Kibaire. The roads are owned and managed by the government. The main road is managed by Public Works whereas the sub-county manages the feeder roads. The roads facilitate movement to markets.

The main schools in the village include Kabonesa Secondary School, Bulindi BCS Primary School, Kibaire primary school and Kisalizi. The infrastructure in the schools is very basic and in a poor state of repair. The current conditions can therefore be described as bad. The schools are not far, and the children can easily walk to school. The schools are owned and managed by the government. The schools provide the children with an opportunity to obtain education. There is equal access to the schools because Uganda has a policy of Universal Education.

There is a borehole in Kibaire and another at Kiranga. The water from the boreholes is clean and as such the demand is high leading to long queues. Sometimes the boreholes dry for up to two months. The boreholes were drilled by the government but are managed by the community. All members of the community have access to boreholes and do not have to pay for the water. Water from the borehole is used for both domestic and livestock purposes.

Trading centre/markets include Bulima, Bulindi, Kibaire, Kisalizi, Bulindi BAT, Bulindi 25, Kachukula market. Only Bulima and Bulindi are in good condition. Time taken to the markets is as follows: 20 minutes to Kibaire; 1 hour to Bulima; 40 minutes to Kisalizi; 1 hour to Bulindi BAT; and 1.5 hours to Bulindi 25. The local council (LC1), headed by the chairman, manages the markets. The markets are used to sell agricultural produce and buy household goods closer by.

There is a Church of Uganda at Kisalizi and Kibaire. These are small churches with little furniture and limited space. The community owns them and manages them through committees.

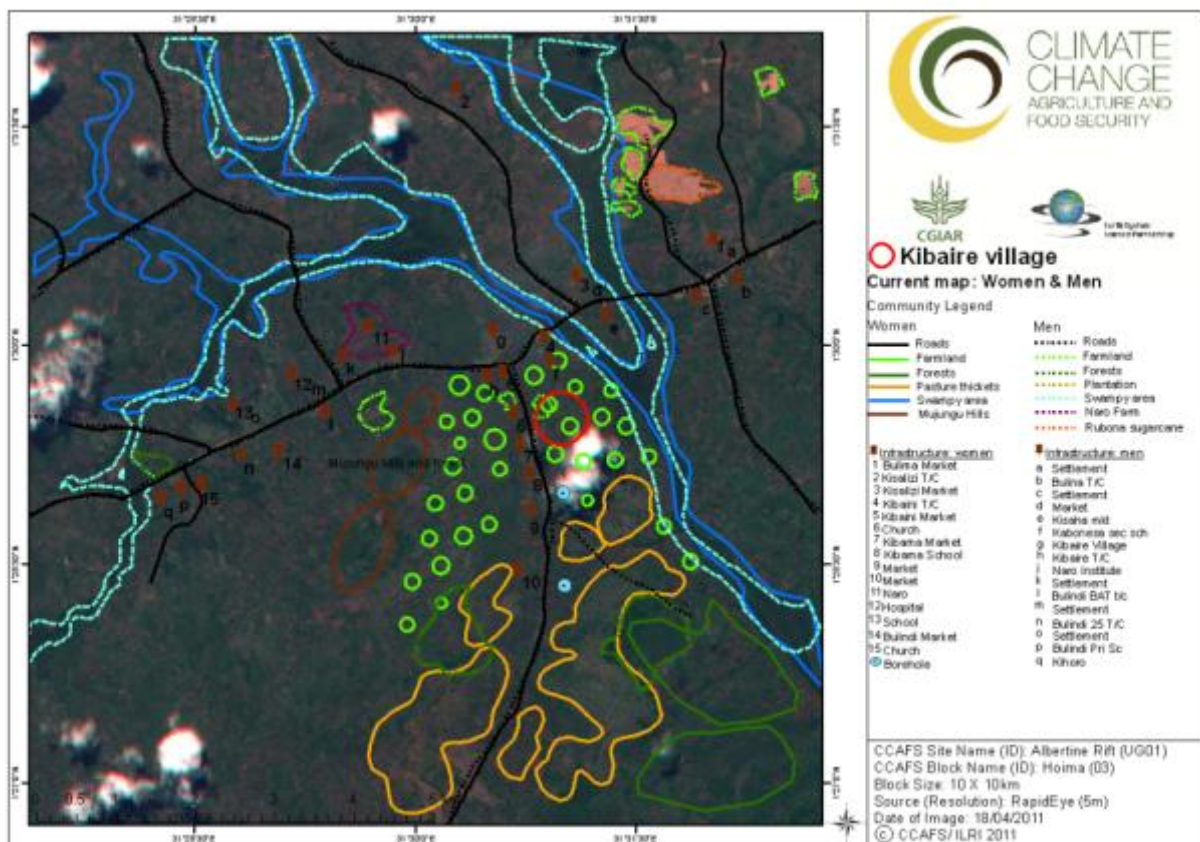
There is a hospital at Kisalizi. There is a government research centre--NARO-BUZARDI--some 30 minutes' walk away from the village. The centre has approximately 70 acres. It provides new crop varieties and new technologies to farmers. It also gives advice to farmers and is a source of food during scarcity. However the grounds are guarded and the community only has regulated access.

B. Gender-differentiated comparison of current conditions

Map 4 below compares the current resources identified by male and female participants. The listing of resources was more or less exhaustive for the male and female groups. Both groups largely coincided

on the resources and infrastructure they cited in the appreciation of the quality of and access to those resources.

Map 4. Overlay of current conditions of resources, comparing men’s and women’s maps

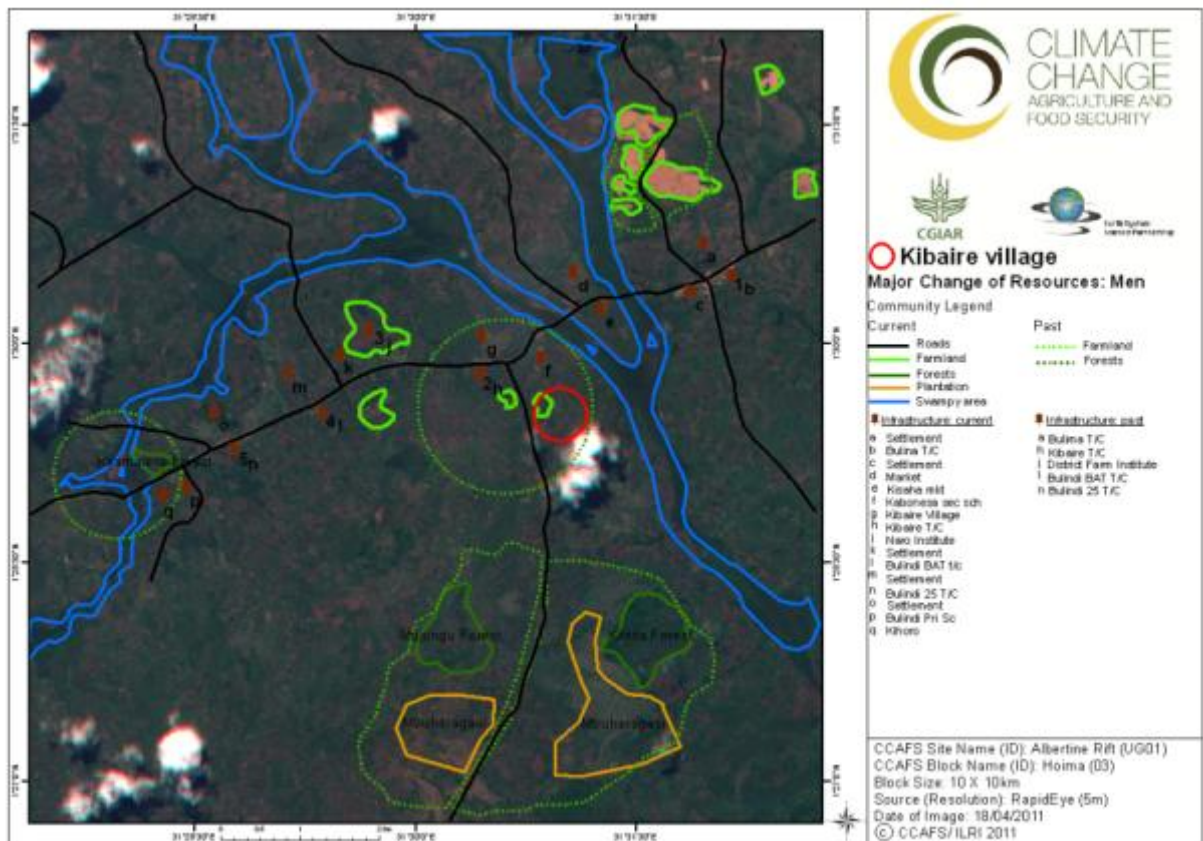


The women were concerned about access to the forested area from which they obtained wood fuel. They also seemed more concerned about the exploitation of the wetlands and felt that the pollution from the brew should be stopped. They cited political interference as the main obstacle to putting a stop to brewing in the wetlands. It is also the women who raised the concerns over congestion at the borehole. The men were very informed about land matters and infrastructural issues. Their impression is that forests are still large but have been decreasing since the 1970s. A major trigger for deforestation has been population growth. Most recently, the government’s policy of leasing forest to individuals has contributed to deforestation, because those who lease land have bought land surrounding the forests from the government. Men indicated that forests have lost wildlife like buffaloes.

C. Major changes of resource conditions

Participants were asked to consider the resources they had in their community, discuss the history of land use and identify major changes that had occurred in the landscape in the past 10 years. In addition, participants were to examine how the resources got to the current condition and the major drivers of those changes; as well as the opportunities and constraints into the future. In the following pages the results of those discussions are summarized both on maps traced on top of the satellite images for the village (Maps 5 and 6), and a table (Table 2) that includes the major changes and drivers of change, as perceived by male and female participants.

Map 5. Major changes in resources (comparing past and present) for men



Map 6. Major changes in resources (comparing past and present) for women

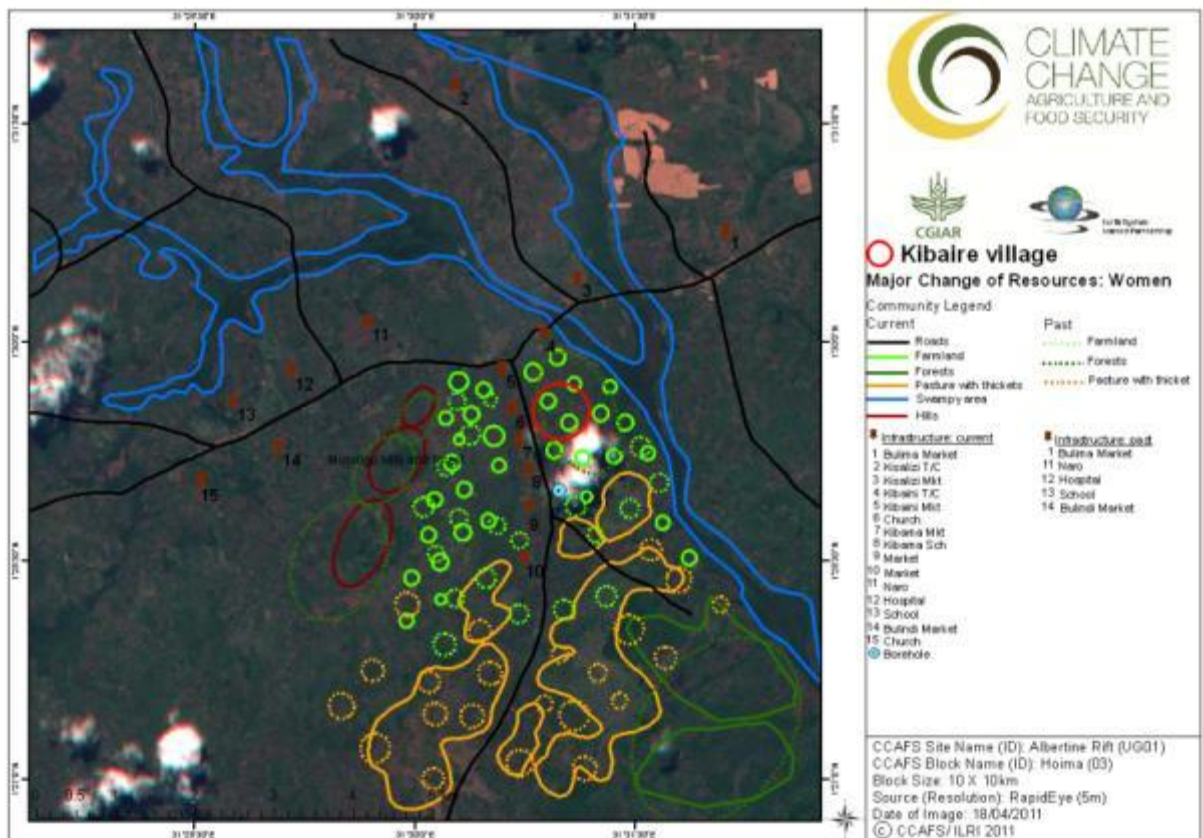


Table 2. Major changes and drivers of change in the last 10 years, as perceived by men (M) and women (F)

| Land cover class | Community defined land use | Location names | Past state (quality) | Time to resource | Drivers of change | Management and ownership issues | Environmental Benefits |
|------------------|---|--|---|----------------------------------|--|--|------------------------|
| Forest (M) | Hunting, firewood collection. | Kiisita, Mujunga, Mbuharagasi, Kyamalera | There were forests everywhere. The ones that exist currently were bigger. They had buffaloes. | | Started changing in 70's due to population increase and need for farmland. Last 7 yrs forest encroachment for sugarcane farming. Public land is leased to individuals buying surrounding forestland from gov. Massive charcoal burning, lumbering. | Owned by gov yet no management Forest reserves leased to individuals by gov | Rain formation |
| Forest (F) | Collection of firewood for domestic use in the past. Now commercialised | Kansesero, Nyasano and Mjungu forest | There were more trees that community controlled and managed. | | Deforestation as they collect firewood, make charcoal and encroach for agric land. Commercialisation of forest products. Poor gov control after privatisation of forests. | Gov forest reserve/ Privatisation through leasing. Community management before independence by Bunyoro Kitara Kingdom. | Rainfall |
| Swamp (M) | | | They were the same 40 years ago. | 5 min motor-bike, 2 hrs on foot. | | Owned by government and managed by Local Council | Habitat for chimps |
| Swamp (F) | | | Wetland products harvested less. Swamp was not marshy, had more water. | | Human activities on site especially brewing and cutting of reeds. | Community management in the kingdom of Bunyoro Kitara | Dry season cultivation |
| Grass-land (F) | Pasture for the animals. | People grazed the animals in same place. | More pasture. | | Cultivation has taken over some of the grazing fields. | Community man., was part of Bunyoro Kitara Kingdom. | |
| Roads (M) | | | Main and feeder roads existed but were smaller. | | Grading by the government in a bid to expand them | Government | |

| Land cover class | Community defined land use | Location names | Past state (quality) | Time to resource | Drivers of change | Management and ownership issues | Environmental Benefits |
|--------------------|----------------------------|---|--|------------------|---|---|------------------------|
| Schools (F) | | Bulundi Church of Uganda school (BCS), Bulundi Catholic school (COU), Kibaire primary school. | These were the only schools. | | More schools have been founded. | | |
| Trading Centre (M) | | Bulindi 25 Bulindi BAT Kibaire Bulima | All existed though under-developed | | Population increase leading to encroachment | Owned by individuals who managed them before selling them | |
| NARO (M) | | | Initially District Farm Institute (DFI), was under-developed | | Government funding | Owned by district but managed by government | |
| NARO (F) | | | Has been there even in past but was not in good condition | | Change of status from local to regional organization. | Government | |

The area was part of the Bunyoro Kitara Kingdom, one of the most powerful kingdoms in Eastern Africa from the 16th to 19th century. At its height, Bunyoro-Kitara controlled almost the entire region between Lake Victoria, Lake Edward and Lake Albert. After independence the Kingdoms were abolished, and land ownership was transferred to the government. In the recent past the kingdoms have been re-established, and some form of the old land ownership has been adopted.

In the recent past most of the area was under natural forest vegetation. There was more pasture and the wetlands were marshier. The forests were dense and inhabited by wild game such as buffaloes. The community controlled all the land.

All the current roads were in existence but they were smaller and in less favourable condition. There are more schools today than there were in the past. All the trading centres existed but were underdeveloped. Today NARO (National Agricultural Research Organisation) is more developed than when it was created as District Farm Institute (DFI).

Wood fuel is the main source of domestic energy in the area and an increase in demand leads to increased exploitation of forest resources. In addition to the pressure that more households present, and perhaps more importantly, there has been an increasing trend to convert forestland to commercial agriculture and to commercialise forest products. The income realised from such activities is attractive, thus increasing the number of players and the level of exploitation. The privatisation policy being implemented by the government has led to the transfer of a lot of public land to private management through leases. Hence, forests have been cleared to create space for sugarcane plantations. Also, the area has become a net exporter of forests products. The increased demand for those products has led to an unrestricted exploitation that is evident in the many trucks that ferry charcoal and lumber out of the area daily as far as Kampala. There is poor government control after privatisation, which leaves space for abuses. The community access to wood fuel in forestlands has been severely curtailed.

Population increase has led to more land being used for human settlement and cultivation. Cultivation has taken over some of the grazing fields. Population increase has also increased the demand for goods and services prompting the growth of trading centres and markets. Such demand, in turn, has unwittingly fuelled natural resource degradation. For instance, commercial activities in the swamp, especially beer brewing and cutting of reeds, are the main drivers of degradation in the wetlands.

The government planned to grade the roads and expand them to enhance communication. An increase in the demand for education has led to an increase in the number of schools. Government funding has contributed to the development of NARO. The change of status of NARO from a local to a regional organization has also acted as a driver of change in the area.

D. Vision of the future

With a mixed group of men and women, the goal was to develop an image of village resources and human wellbeing into 2030 to understand the opportunities and constraints, as well as aspirations for the future. This exercise built upon all the work completed in the previous sessions. In addition, the exercise took into account the photographs of the landscape, including things they are proud of and things that need to be improved upon in the future, that a group of young people and adults, male and female, had produced following instructions given on day 1 (Map 7).

The discussion focused on topics that would characterize an ideal future in Kibaire. Although the instructions were to imagine what the village would look like in 2030 the participants proposed conditions that could be accomplished much sooner and with relatively low financial and organizational investment. These conditions, nonetheless, seemed extraordinary to the participants given the actual conditions in the community.

The first major concern for the participants was transportation and access to services and resources, and principally markets. Hence, they proposed that they would like to have additional roads and upgrading the existing ones to first class murrum roads. They mentioned that they would like to have a road from Kigungu LC to Kabonesa Secondary School so children could continue their education.

Likewise, they wanted footpaths to be improved and maintained, culverts and drainage channels to be fixed, and bridges to be constructed where the road crosses the swamp.

A second major theme in the vision of the future concerned the management of natural resources. Participants mentioned that forests and wetlands should be protected and encouraged to grow. Forests should be reforested, and the pollution in the wetlands should be curtailed. Particular concern was the negative effect of refuse from brewing and distilling that ends up contaminating the wetlands, for which they proposed drainage channels to divert the effluence.

A third major theme was related to the creation or consolidation of public services in Kibaire to match the demands of its growing population. Participants envisioned a larger village with more buildings, electricity supply and a town council for better management. Piped water networks should be fitted in the village, and for that purpose water sources and streams need to be protected. People hoped that the weekly Kisalizi market would be upgraded in the future and become a daily market. Kibaire should have one more secondary school and a technical school. To save on space, there should be storied buildings in schools. Schools should have quarters for teachers. Participants felt that the health centre should be supplied with electricity and upgraded.

Map 7. Future map of the community



Table 3. Summary of major conditions in the future

| Items | Preferred condition for 2030 | Organisations to be involved |
|------------------------|---|-------------------------------|
| Roads | Additional roads from Kigungu LC to Kabonesa Sec. School. New road from Kibaire through Kiha and Kachuru to Marongo. Upgrade existing roads like Hoima – Masindi. Kibaire road upgraded to 1 st class murrum. Footpaths improved and maintained, culverts and drainage channels fixed, bridges constructed where road crosses swamp. | National government |
| Swamps | Drainage channels constructed for refuse resulting from brewing and distilling and directed away from wetlands | The government |
| Forests | Mujungu forest increases in size. Kisita forest should be reforested. | Farmers and forest department |
| Trading centres | Kibaire has more buildings, electricity and a town council for better management. Kisalizi market upgraded and operates daily. | |
| Schools | One more sec school at Kibaire. Technical school. To save on space, there should be storied buildings in schools. Schools should have quarters for teachers. | |
| NARO | NARO should be renovated | |
| Health Centre | Supplied with electricity and upgraded with a theatre facility. | |
| Water supply | Piped water network fitted in village. Water sources and streams protected. | |

Topic 2: Organisational landscapes

This topic aims to show evidence of organisational capacities that help address food security and manage resources. This will inform CCAFS about how prepared the village is to respond to the challenges envisaged as a consequence of climate change or other future challenges and to engage with CCAFS partners at a collective level.

Specifically, this section presents the different formal and informal organisations involved in the community in general terms, as well as with respect to food security in different situations (i.e. average and crisis conditions), and natural resources management (NRM). It also elaborates on what types of activities the organisations are engaged in, who their members are, whether the organisations are useful, etc.

A. Basic spheres of operation

Participants were asked to draw three large concentric circles on the ground. The inner circle would represent the community, the middle circle the locality and the outer circle beyond the locality. Participants were then asked to name organizations working in the area, whose names were written on cards, and place the cards in the appropriate circle. Thus, the group placed in the inner circle the cards of organizations that worked in the community, in the middle circle the cards of organisations operating in the locality, and in the outer circle those that operated beyond the locality (see Photo 2 for an example). The results are below.

The survey identified 29 organisations working in the community. The men identified 14 organisations while the women identified 20. Both discussion groups were asked to provide information in detail for only 5 organisations out of those listed. The organizations were placed in three categories: those working only within the community (within the village), those working within the locality (within the district) and those working beyond the locality (beyond the district) (Figures 1 and 2).

Photo 2. Organisational landscape as created by the women's group



The spread of the organizations between these three spheres was skewed. There were eighteen organisations operating beyond the locality, three organisations operating within the locality and eight organisations operating within the community. All the organisations operating beyond the locality had formal registration but the ones operating within the community did not.

In Table 4, more detailed information is provided on the five most important organisations as they were ranked by the men's and women's groups.

Figure 1. Organisational landscape of the men's group

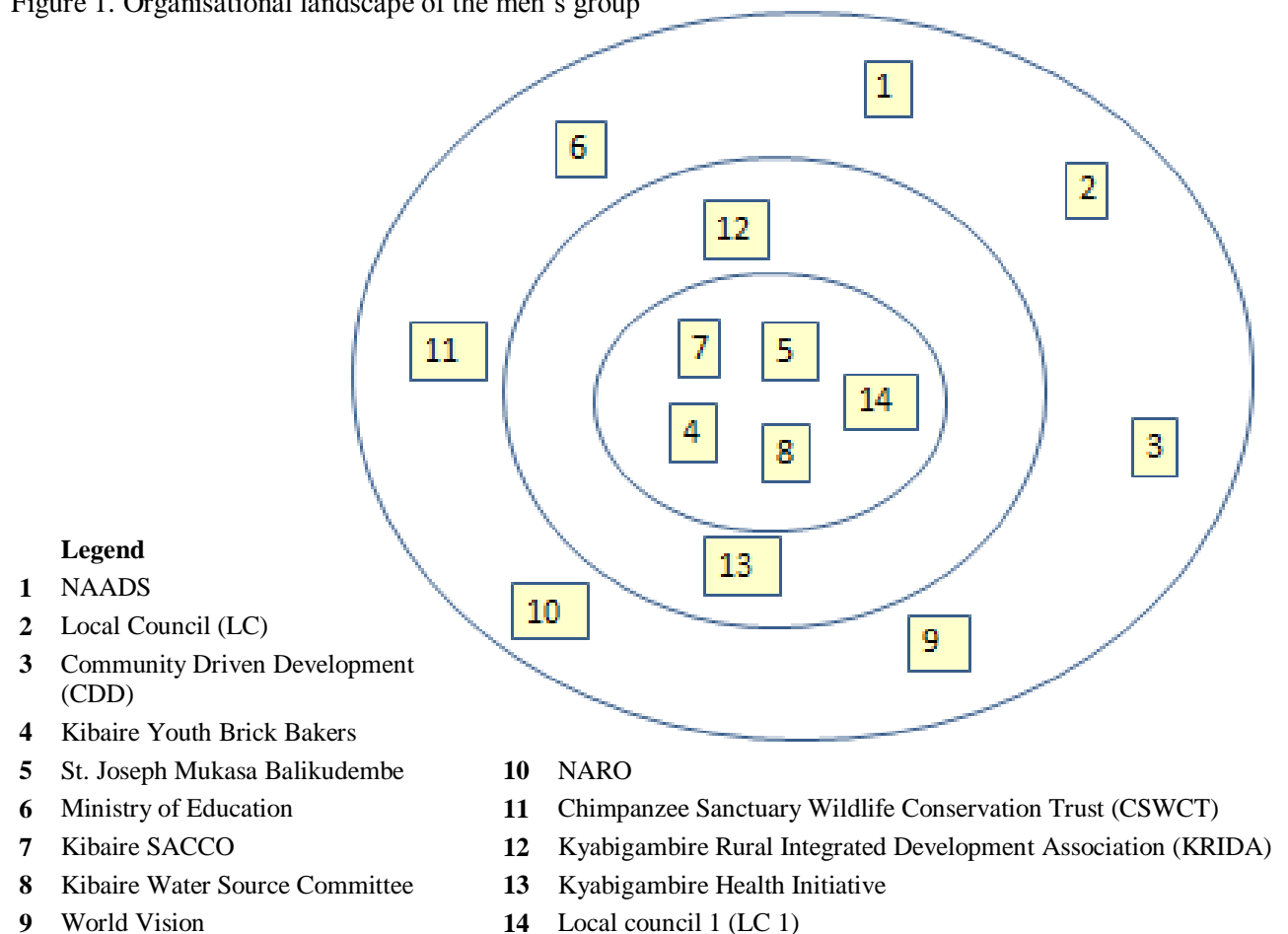
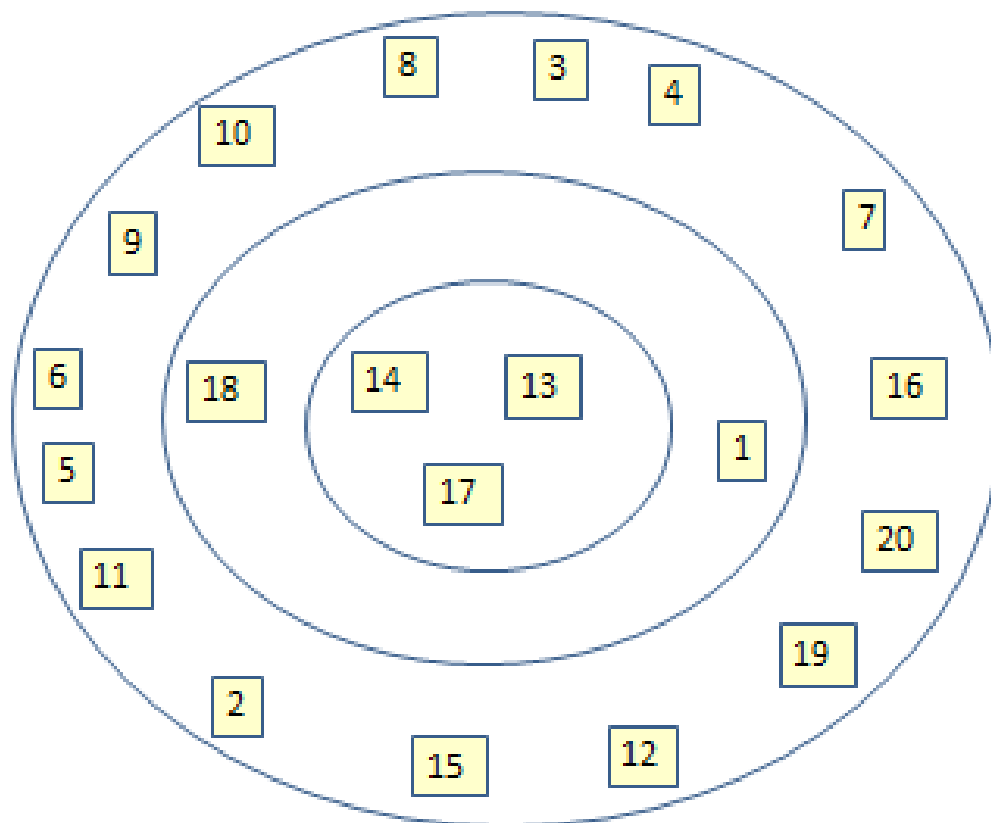


Figure 2. Organisational landscape of the women's group



Legend

- 1 Kibaire SACCO
- 2 NAADS
- 3 Mother's Union
- 4 Father's Union
- 5 BAT(British American Tobacco)
- 6 Continental
- 7 Leaf tobacco
- 8 World Vision
- 9 NARO
- 10 Forestry (NFA)
- 11 Little Hospice
- 12 Traditional Birth Attendant's Group
- 13 Kugonza Women's Group
- 14 Tweimukye Women's Group
- 15 Chimpanzee Sanctuary and Wildlife Conservation
- 16 Nigina groups
- 17 Youth ball groups
- 18 Elderly group
- 19 Orphan's group
- 20 Disabled group

Table 4. Information on the first five organisations ranked by the men (M) and women (F)

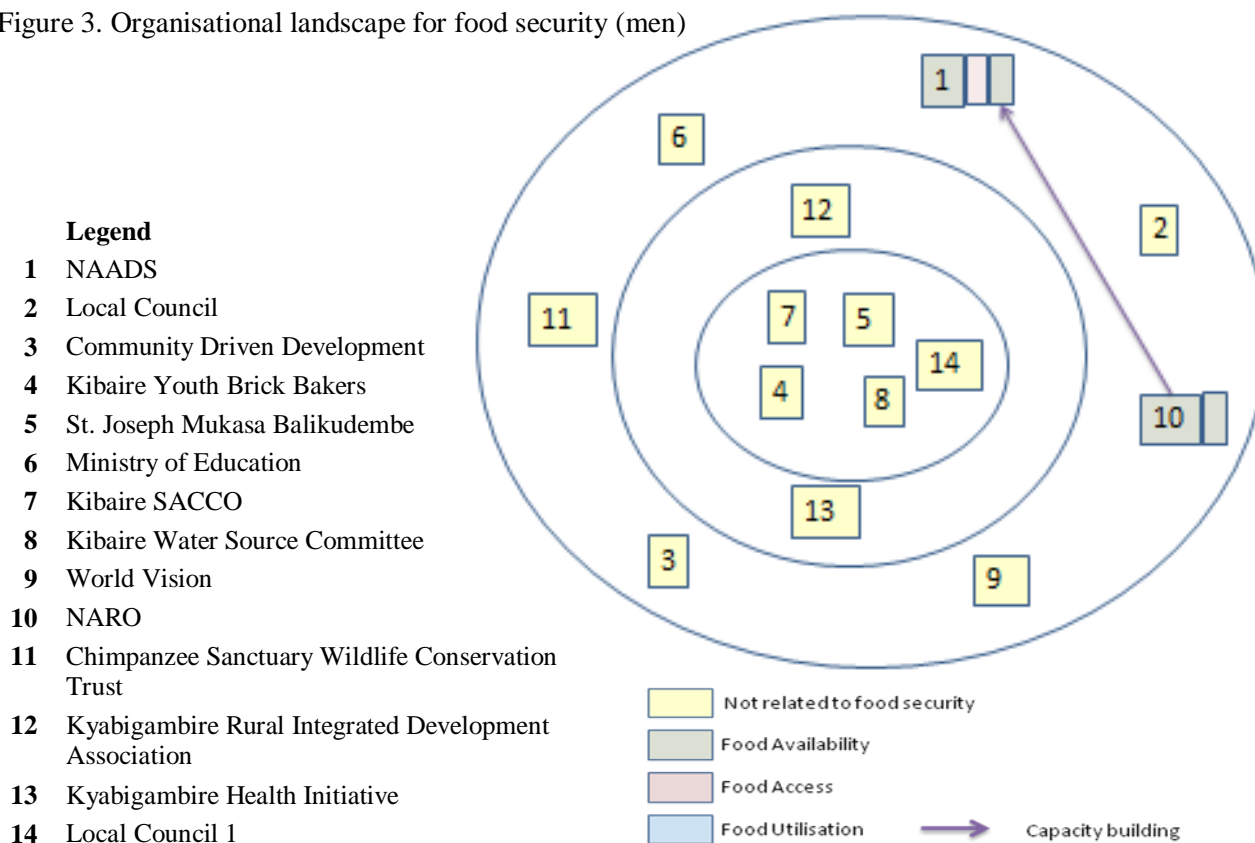
| Organisation name | Main activities | Number of members (estimate) | Access | Origin | Sphere of operation | Sources of funding | Existed how long | Formal or informal |
|--------------------------------------|--|--------------------------------------|--|--------------------------------------|---------------------------|-------------------------------------|------------------|--------------------|
| 1 Kibaire Youth Brick Bakers (M) | Bake bricks for sale | 50 | Open | Project | Local | Members | 1-5 | Informal |
| 2 Community Driven Development (M) | Community empowerment initiatives, e.g. bought milling machine for community, promoted fish rearing in ponds. | 15 | Restricted | Government project | Beyond local | District | 1-5 | Formal |
| 3 Kyabigambire Health Initiative (M) | Sanitation initiatives within community. | 5 | Restricted. | Indigenous. | Local | External, members, well-wishers | 1-5 | Informal |
| 4 St. Joseph Mukasa Balikudembe (M) | School for children | 9 | Restricted. | Church project. | Local | School | 1-5 yrs | Formal |
| 5 NAADS (M) | Ploughs for farmers. Source of input e.g. crop seeds and livestock. | 20 groups | Restricted. | State. | Beyond local. | External. | Longer. | Formal. |
| 1 Kibaire SACCO (F) | Credit to members for school fees, to pay for labour in farms. Members required to open saving account with bank and show security for loan. | 800, most from other villages. | Open to men and women | Indigenous, started in this village. | Operates within locality | Group gets money from Stanbic bank. | 8 years | Registered group |
| 2 Orphans Group (F) | World Vision gave some orphans a goat to rear, sewing machine, bicycle. | Many registered orphans | Orphans, reg fee of USH 3,000. | Started as an umbrella of CHAI. | Operates beyond locality. | External | 1-5 years. | Informal |
| 3 NARO (F) | Research, experiments, demonstration on impr. technologies. Farmers get impr. seeds, learn new techn. like honey processing. Children visit NARO for agriculture practical lessons. | 20% of people get access to services | Open to men and women | State | Operates beyond locality. | Both | Since 1950s | Formal |
| 4 Disabled Group. (F) | Community helps this group by giving them necessities. | | Open to disabled | | Beyond the locality. | | | Informal |
| 5 Continental (F) | Tobacco company, give loans, seeds, fertilizer, other chemicals, provide tractor hire services to produce tobacco. Buys tobacco after harvest. Farmers grow fire cured seed varieties. | | Open, but one cannot produce for competition | | Beyond locality | External | | Formal |

B. Organisational landscape of food security

The goal of this exercise was to get an improved understanding of how the organisational landscape contributes to the food security of the group. Food security is mostly measured at the household level. Nonetheless, community-level organisations and interactions influence the food security of different groups within the community differently. Male and female participants were asked to discuss the concepts of food availability, access and utilization, and then review each organisation they had previously identified by asking which of them had activities that fell under these categories.

The outputs of this exercise were diagrams showing the organisational landscape. Information on each organisation was also captured cards. The links between the organisations were shown using lines and arrows on the diagrams.

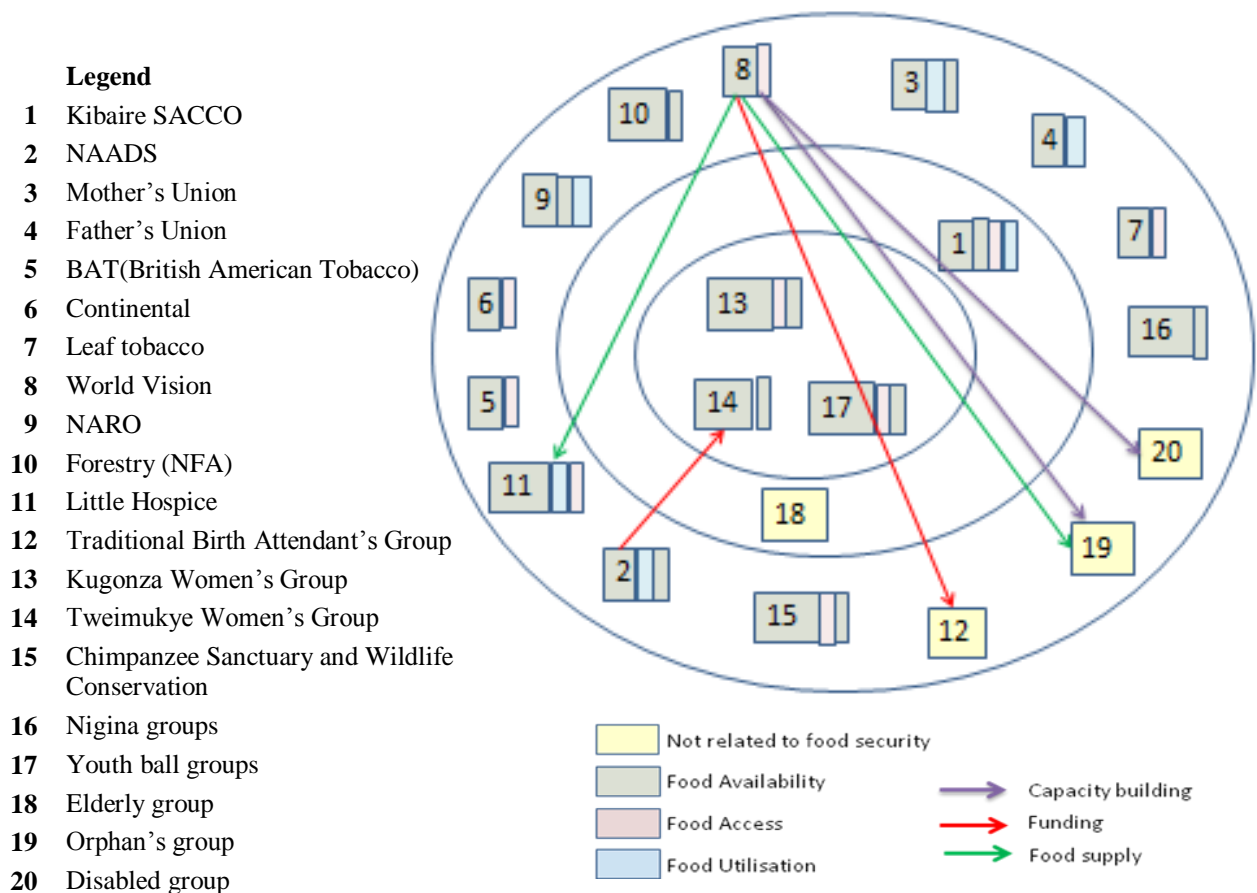
Figure 3. Organisational landscape for food security (men)



The men identified a total of 14 groups/organisations working in the community out of which they established that only 2 addressed food security issues. Meanwhile women defined that 15 organisations groups/organisations working in the community addressed food security in one way or another out of the 20 organisations they had identified. In total, 52% of the organisations working in the community are engaged in addressing food security (15 groups/organisation out of the 29 identified by both men and women). Food availability was addressed by 41% of the organisations, food access by 28% and food utilisation by 14%. Hence, food insecurity in the village is still a concern. Most food security issues can be addressed at household level and do not need to be addressed collectively, which is an indicator of a relatively favourable food security situation. Women engage more closely with matters of food security at the community level, while World Vision has prominence in providing food security assistance from outside.

There are various types of linkages among the organisations engaged in food security issues. The men pointed out capacity building links where NARO carries out agricultural research and then gives findings to NAADS for implementation and provision of extension services to the community. Women were able to identify resource transfer links (notably distribution of funding, food and medicines) and capacity building/training links.

Figure 4. Organisational landscape for food security (women)



C. Organisational landscape of food crisis situations

The purpose of this exercise was to understand how organisations help people to cope in times of food crisis. Participants identified a food crisis situation that they all remembered (e.g. a bad year or lean season), and discussed how the organisational landscape of food security operated in that situation. Women said they have never had food crisis but men remembered 1979 when there were extreme hot conditions and there was no food in 1980. During this period, they moved long distances looking for wild bananas. There was war during this period and many people died. No organization came in to help. There were reported attempts of community members making porridge using sawdust. There was a reported incidence where a person died after overeating fish and wild bananas due to the biting hunger. There has been no famine or food crisis in the community since. They explained that by saying that each household is generally able to produce enough food. Two additional reasons should be considered. First, the area is of high agricultural potential, and the region has been relatively peaceful and certainly has not been adversely affected by armed conflict.

D. Organisational landscape of natural resource management (NRM)

In this session, participants were asked to discuss the organisational landscape in relation to natural resource management (NRM). Specifically, what organisations were actively working to protect the environment, manage natural resources, etc.? The process entailed asking the group to identify the organisations that were involved in the management of natural resources in the community, and the role those organisations played regarding the management of such resources.

In total one-third of the groups/organisations identified by the participants addressed natural resources management (NRM). The men identified 6 organisations engaged in NRM while the women identified 5. It is significant that 75% of the NRM-related organisations were from outside the community. Four out of 6 organisations identified by men operated beyond the locality. Among women, all the organisations identified were from outside. This situation compromises the adoption

and sustainability of interventions. The percentage of groups/organisations engaged in NRM at village levels should ideally be higher than those operating beyond the locality. Hence, there is a need to increase local participation by formation and empowerment of groups at village level.

Figure 5. Organisational landscape for natural resources management (men)

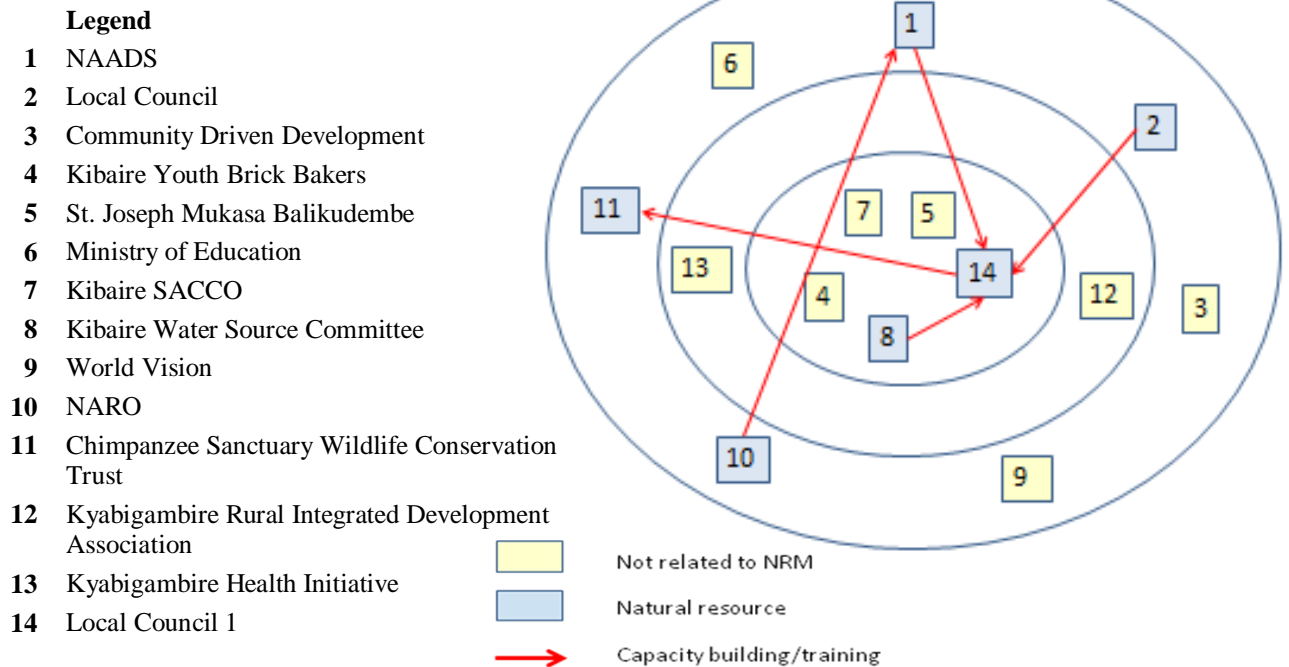


Figure 6. Organisational landscape for natural resources management (women)

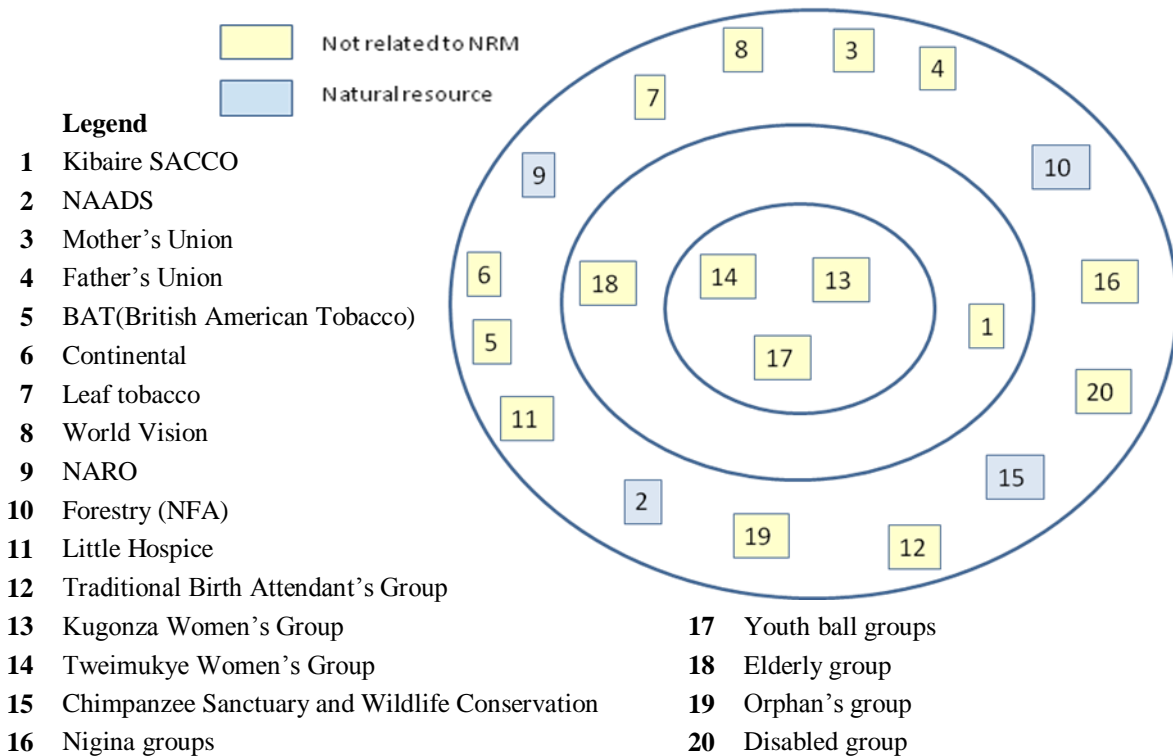


Table 5 summarizes information on all the organizations identified separately by male and female participants. The organizations are classified according to their role in supporting food availability, access and utilization, as well as the provision of relief in times of food crisis, and NRM.

Table 5. Information on highlighted organisations of men and women (unless otherwise noted, 1=yes/0=no)

| Organisation name | Identified by men | Sphere of operation | | | | Identified by women | Sphere of operation | | | |
|---|-------------------|--|---------------|-------------|-----|---------------------|--|---------------|-------------|-----|
| | | 1=village 2=locality 3=beyond locality | Food security | Food crises | NRM | | 1=village 2=locality 3=beyond locality | Food security | Food crises | NRM |
| 1. NAADS | 1 | 3 | 1 | 0 | 1 | 1 | 3 | 1 | 0 | 1 |
| 2. Local Council | 1 | 3 | 0 | 0 | 1 | | | | | |
| 3. Community Driven Development | 1 | 3 | 0 | 0 | 0 | | | | | |
| 4. Kibaire Youth Brick Bakers | 1 | 1 | 0 | 0 | 0 | | | | | |
| 5. St. Joseph Mukasa Balikudembe | 1 | 1 | 0 | 0 | 0 | | | | | |
| 6. Ministry of Education | 1 | 3 | 0 | 0 | 0 | | | | | |
| 7. Kibaire SACCO | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| 8. Kibaire Water Source Committee | 1 | 1 | 0 | 0 | 1 | | | | | |
| 9. World Vision | 1 | 3 | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 0 |
| 10. NARO | 1 | 3 | 1 | 0 | 1 | 1 | 3 | 1 | 0 | 1 |
| 11. Chimpanzee Sanctuary Wildlife Conservation Trust | 1 | 3 | 0 | 0 | 1 | 1 | 3 | 1 | 0 | 1 |
| 12. Kyabigambire Rural Integrated Development Association | 1 | 2 | 0 | 0 | 0 | | | | | |
| 13. Kyabigambire Health Initiative | 1 | 2 | 0 | 0 | 0 | | | | | |
| 14. Water source committee | 1 | 1 | 0 | 0 | 1 | | | | | |
| 15. Mother's Union | | | | | | 1 | 3 | 1 | 0 | 0 |
| 16. Father's Union | | | | | | 1 | 3 | 1 | 0 | 0 |
| 17. BAT (British American Tobacco) | | | | | | 1 | 3 | 1 | 0 | 1 |
| 18. Continental | | | | | | 1 | 3 | 1 | 0 | 0 |
| 19. Leaf tobacco | | | | | | 1 | 3 | 1 | 0 | 0 |
| 20. National Forestry Authority | | | | | | 1 | 3 | 1 | 0 | 1 |
| 21. Little hospice | | | | | | 1 | 3 | 1 | 0 | 0 |
| 22. Traditional birth attendant's group | | | | | | 1 | 3 | 0 | 0 | 0 |
| 23. Kugonza women's group | | | | | | 1 | 1 | 1 | 0 | 0 |
| 24. Tweimukye women's group | | | | | | 1 | 1 | 1 | 0 | 0 |
| 25. Nigina groups | | | | | | 1 | 3 | 1 | 0 | 0 |
| 26. Youth football group | | | | | | 1 | 1 | 1 | 0 | 0 |
| 27. Elderly group | | | | | | 1 | 2 | 0 | 0 | 0 |
| 28. Orphans group | | | | | | 1 | 3 | 0 | 0 | 0 |
| 29. Disabled group | | | | | | 1 | 3 | 0 | 0 | 0 |
| Totals | 14 | 1=5 2=2 3=7 | 2 | 0 | 6 | 20 | 1=3 2=2 3=15 | 15 | 0 | 5 |

Topic 3: Networks of information

The aim of this exercise was to understand the diversity of options people use for accessing information on agriculture and weather; how people take advantage of sources of information available, and if some sources are not used and why. We want to describe networks of how people access and share information within the community.

Farmers in Kibaire seek information that can help them make decisions on agriculture. Men expressed that they want information on the start of rains, type of seed, prices and market demand for products, the start of drought, the start of seasons, pest and animal control, livestock husbandry and land husbandry. Women seek information on land preparation, planting, planting seasons, seed selection, fertilizer application, weeding, chemical application, time of harvesting, storage, marketing, disease control, reproduction in case of animal keeping, feeding of livestock, zero grazing, general management of livestock, and improved livestock breeds.

Organisations are the most significant source of information on agriculture in Kibaire village. The organisations include NARO, NAADS, BAT and LC (local council). Media is the second most important source. Farmers get information through the many radio stations in the area that air many programs in local languages. These include Liberty Broadcasting Station, Bunyoro Broadcasting Station, Radio Kitara, and Radio Hoima. All households in the area have radios. Literacy and welfare levels in the community allow the use of both print media and TV. The print media is used here through Bukede local newspaper. Some families have TV and use it as a source of information, but generally TVs were not important sources of information due to poor signals and poor electricity coverage. Individuals also form a significant source of information. In general it can be said that Kibaire village has a reasonably inclusive information network that includes organisations as the leading sources of information followed by the media, individuals and gatherings, both private and public. Table 6 summarizes information from the exercise.

Table 6. Information networks of men and women (1=yes/0=no)

| Source | Topic (men) | | | | | Topic (women) | | | | Total |
|----------------------|--|-------------------------------|-----------------|-----------------------|--------------------|---------------|--------------------|----------|---------------------|-------|
| | Start of season/ rainfall/ drought | Livestock & land husbandry | Type of seed | Market information | Pest & diseases | Marketing | Disease control | Planting | Land preparation | |
| <i>Individuals</i> | | | | | | | | | | |
| -Family | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| -Friends | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 5 |
| -Neighbours | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 4 |
| -Extension workers | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| -Organisations | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 |
| <i>Media</i> | | | | | | | | | | |
| -Radio | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 7 |
| -TV | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| -Newspaper | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 3 |
| <i>Other</i> | | | | | | | | | | |
| -Observation | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| -Functions/ meetings | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 |

Conclusion and recommendations

Deforestation in Kibaire village does not appear to be a serious threat at the moment because the tree population is still relatively high, but it is a problem in the making. Population increase has led to an expansion of land for subsistence and commercial farming, as well as human settlement, at the expense of forests. Also, land fragmentation has reduced the area under cultivation, thus creating the need to encroach upon forests. The government has leased most of the forests to private individuals as part of the privatisation policy being implemented in Uganda, but it has exerted poor control after privatisation. One notable exception is composed of the individuals who have been licensed to replant deforested government forest reserves. In any case, there is no community participation in forests management. Privatisation has resulted in clearing of forestland to establish sugarcane plantations. Likewise, there has been promotion of tobacco and rice farming in areas that were previously occupied by forest. Wood fuel is the main source of domestic energy and this adds to the pressure on forest resources. Lastly, increasing interest in the commercialisation of forest products because of the income it commands has led to rising numbers of players and levels of exploitation. Truckloads of charcoal and lumber are ferried daily out of the area as far as Kampala.

If forests are cleared to create farmlands due to increased demand for agricultural products, commercial interests have led to overexploitation and pollution of the many wetlands in the area. Wetlands are of economic value and provide numerous environmental services. They contribute to food security by providing a habitat for mudfish. They are wet even during the dry spell and thus make available fields that can be cultivated in times of drought. The wetlands provide a habitat and also drinking water thereby encouraging the continued existence of wildlife. They create self-employment, for example papyrus reeds used for making handicrafts and eco-tourism. Yet brewing and other activities have been established in the wetlands, which have caused the erosion of the papyrus reeds and the contamination of water sources. Brewing has been identified as having negative impacts on the environment but there is political interference with any attempt to stop it.

Men and women identified 29 organisations working in the community, two-thirds of them operating from outside the locality. This pattern is lopsided as there should be more actors in the community and fewer within and beyond the locality, forming a bottom heavy structure. Participants expressed that they have plenty of food in the village. Women said that they had never had a food crisis. Nonetheless, half of the organisations men and women identified were involved in some form of food security related activity, and notably food availability. Natural resource management does not appear to be a pressing community need. Less than one-third of the organisations addressed natural resources management, and most of them were from outside the community. This pattern, again, does not bode well for the wide adoption of sustainable interventions.

Implications for CCAFS

Given the above scenario, there are some implications for CCAFS activities.

There is need to create awareness amongst the community groups on the danger of not engaging in sustainable forest management, as well as other forms of natural resource management. The capacity of the community groups can be built to better equip them for participation in the CCAFS agenda. CCAFS should establish partnerships with NARO and NAADS so that the latter can teach on sustainable natural resource management. The National Forest Authority must have a key role to play since forest protection and management are central community concerns. Likewise, the LC should be encouraged to use its power as regulator to prevent, control and reverse deforestation.

There should be research on the effects of the policy of privatising the management of public forest and lands. The privatisation of forest may compromise efforts to retain trees on the landscape because private entrepreneurs are driven by the need to make profit and not the need to conserve the environment. Research should also be done on the trade-offs of reducing forest cover to expand farmland. Policy makers and development agents in the area can use this information. The

management of wetlands could be improved through participatory action research involving the community and their management of resources.

The National Agricultural Research Organisation (NARO), which has a station at Bulindi in the community, is a main actor particularly in relation to farming. It works in close association with NAADS, which uses its results to provide extension services to farmers. The organisations are funded by the government but can also receive funding from other sources.

Table 7. Potential areas of research and development interventions

| Gaps in knowledge/ current constraints that could provide opportunities/niches for CCAFS and partners | Opportunities for research (CCAFS) | Opportunities for Action Research (CCAFS partners) | Development Interventions (Development Partners) |
|--|---|---|---|
| Community knowledge on climate change issues | X | X | X |
| Sustainable forest management | | X | X |
| Sustainable wetland management | | X | X |
| Trade-offs between retaining land under forest cover and removing trees to create room for cultivation. | X | X | |
| Diversification of livelihoods | | X | X |
| Strengthen community organisation | | X | X |
| Mainstreaming climate change in public programmes | | X | X |

Table 8. Information on potential CCAFS partner organisations

| Organisation | Sphere of Operation | Activities | Strength |
|----------------------------|------------------------------|--|-------------------------------------|
| NARO | Beyond locality- National | Food security | Resource and Community mobilisation |
| NAADS | Beyond locality- National | Natural Resource Management, food security | Resource and community Mobilisation |
| National Forests Authority | Beyond locality- National | Natural Resource Management | Policy guidelines and regulation |
| LC (Local Council) | Locality | Natural Resource Management | Community mobilisation |
| Kibaire Youth Brick Bakers | Community | Natural Resource Management | Community mobilisation |