

# Integrating cultural values with on-farm biodiversity conservation for the effective conservation of Sangobay forests in Southern Uganda

**Planting culturally viable species for sustenance of cultural values**

**Domesticating woody Forest species for improved farm integrity**

**Conserving Sangobay Central Forest Reserve**

**Community appreciating nature hence conserving: Avian Monitoring Programme**

**Co-existence of biodiversity and human needs:**

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## Project Summary

Sangobay central forest reserve over time has faced a number of threats despite its importance as a haven for a number of endangered species. Through using the cultural values approach, the project sought to promote on-farm biodiversity conservation to provide alternative incomes, improve habitats for biodiversity and ecosystem services derived from the reserve. This was achieved through raising community awareness, training communities in monitoring of biodiversity, creating community-investor partnerships, planting of culturally and economically significant agro biodiversity trees and promoting institutions for conservation within the target communities

The project goal is to conserve the Sangobay forests by providing alternatives for the adjacent communities as well as improving the habitat integrity of the adjacent farms for forest fauna. The target communities were in Kyebe sub county, Gwanda and Kanabulemu parishes.

To achieve contribute to the project goal; the following activities were conducted under this project phase guided by the following objectives.

### **Promote awareness of Cultural values approach to on-farm biodiversity conservation**

Awareness was conducted in both formal and informal ways. Over 7 formal community awareness workshops were conducted in both communities and for district leadership. A number of issues were discussed with emphasis on the meanings derived by the communities from nature and these were supplemented by the different approaches given by conventional approaches. Some of the key aspects discussed included; cultural values and meanings in relation to nature conservation, importance of biodiversity conservation, the role of community on conservation especially advocacy, how to use biodiversity for livelihood improvement in a sustainable manner among others.

### **Build the capacity of the community in different conservation techniques**

The project primary approach to conservation was the use of cultural values. Different linkages were sought where culture had both direct and indirect linkages to conservations. The most important natural resource value in relation to the community was the barkcloth tree (*Ficus* spp) and the enormous benefits it has to conservation. The bark of the tree is processed into a natural fabric, "The barkcloth" which is literally used in all the cultural functions of the Baganda. Although simulations of machines have been made, the development of this fabric largely depends on the indigenous knowledge which the current generation has inherited from the previous generations of the Baganda people. Also other linkages like the sacred sites within the community areas were considered for conservation.

Awareness was created to enhance the linkages between culture and conservation and how the later can be used to achieve the former.

Also the communities were trained in biodiversity monitoring as an approach to conservation. This aimed at helping the communities understand how habitat changes can have effect on biodiversity. Under this project, aves were considered as the main family for monitoring. Communities were trained on equipment use, simple analysis of data for logical conclusion among others.

Also other approaches to conservation like advocacy, institutional partnerships, capacity building were used by the project.

### **Improve integrity of farms as safe havens for biodiversity**

To improve the integrity of forest adjacent community farms, the project strategized on planting trees. Two major species were targeted, that is, *Ficus nantalensis* (Barkcloth tree) and *Meopsis eminii*. The former was considered because of the direct cultural importance it has to the community and the Baganda people at large who dominate the project target area. This tree also offers enormous benefits which include; increased fertility and crumb structure of the soil, wind breaking, shade especially for coffee, water conservation in the soil among others. The former was targeted because it is also dominant in Sangobay forests and is a good agro forestry specie which community can later use as source of timber and firewood. Although the project had targeted other culturally significant species, the propagation methods were not well known to the forest experts as well as the communities.

The project targeted to plant 4000 ficus trees but an estimation of over 20,000 trees were planted. Also over 7000 *Meopsis emini* trees were planted on community gardens.

Although the project team tried to map each tree through the use of geo-referencing techniques, it realized that the time and other resources were not adequate. Therefore a representative sample was taken within the community which gave an indicator of the overall effort of tree planting.

### **Improve livelihoods of project intervention communities**

There were some immediate impacts made on people's livelihoods and increased incomes in some homesteads especially those which had the preferred type of Mature Ficus. The project purchased the planting material from them. The project however anticipates increased incomes of intervention communities 3 years after the project when the ficus spp have matured. Efforts are underway to search for market of the barkcloth with potentials identified from Uganda and Kenya.

Partnerships are being forged between the barkcloth entrepreneurs for bulk purchases and also involve the department of Art and Design Makerere University to engage the communities especially women in making the end products from the barkcloth like hats, dresses, key holders etc in a professional and artistic manner.

### **Share project related information with stakeholders for wider impact and replication**

Project related information has been shared by different stakeholders and networks. 2 project posters have been presented at 2 Rufford grantees conferences in Mombasa, Kenya and Kigali Rwanda. Also the reports and project proceedings have shared with different organisations whose work is related to the project concept. These include Fauna and Flora international (Uganda), NatureUganda, National Forestry Authority, Rakai district local government, Kyebere sub county and the communities within the project area. This has garnered more support for the project and potential areas of collaboration, research and documentation are being discussed with potential collaborators.

One project article was published in the naturalist magazine (NatureUganda) which is circulated to over 2000 of its members and also floated on the internet.

### **Establish institutions which promote awareness about on farm biodiversity conservation**

One Community Based Organisation, Kagera Tourism and (Conservation Organisation-KATOCO) has been established to or enable the project have formalised interactions with the intervention community as well ease of partnerships establishments with other development and conservation partners. However more trainings are needed to build capacities of the CBOs in management and institutional running to ensure sustainability of the project activities.

A number of challenges were encountered by the project team. These included; weather, mainly arising from rains during scheduled field days, community ceremonies on scheduled project activity days, technical gaps in the team which caused delayed implementation of the project among others.

Despite the challenges, the project to a large extent achieved the set objectives although with some the results can be realized later.

To fully achieve the project goal, more support is needed to further replicate the project interventions in other areas nearby to the project sites sighting lessons learnt. Also training of youths in the barkcloth making skills needs to be prioritized given the production gap anticipated vis-à-vis the number of trees planted. Restoration of the ecological integrity of sacred sites needs to be done, more training on avian monitoring techniques needed to be enhanced as well as translation of the species into local names for enhanced understanding, more partnerships for bark cloth products making need to be enhanced or established.

## ACRONYMS

BEU	Bark cloth enterprise Uganda
FACs	Forest Adjacent Communities
FFI	Fauna and Flora International
RDLG	Rakai District Local Government
IBA	Important Bird Area
BEU	Barkcloth Enterprise Uganda
SFR	Sangobay Forest Reserve

## Acknowledgement/Appreciation

The project team wishes to thank all the organizations and personnel who made this project achieve its results. We thank NatureUganda for sharing the expertise as far as bird monitoring and conservation is concerned. With thank Fauna and Flora International especially the former Director Arthur Mugisha for the interest and guidance offered to the project. We thank National Forestry Authority, Sangobay sector for all the support and information shared. We thank the communities (Kyebe sub county-Gwanda and Kanabulemu Sub County) in which the project operated for the support and active participation as well as embracing the project approach. We thank Rakai district local government for all the support offered especially mobilizing the communities and sub county leadership.

In a special way we thank Idea Wild for providing additional equipment for the project which made data management as well as biodiversity monitoring easier for the team.

Lastly we thank Rufford foundation for providing the financial support to implement the project activities.



# Background to the project

## Introduction

Sangobay Forest reserve is a transboundary resource covering 55,110 hectares (in Uganda) and shared between the Uganda and Tanzania. The forests have a unique mosaic of forest interspaced with grasslands. The forest reserve comprises of four forest patches as represented below;

Protected area	Designation	Area (ha)
Kaiso	Forest Reserve	1,891
Malabigambo	Forest Reserve	11,081
Namalala	Forest Reserve	2,398
Tero (East)	Forest Reserve	1,069
Tero (West)	Forest Reserve	2,684

Adopted from <http://www.birdlife.org/datazone/sitefactsheet.php?id=7053>

The forests are part of the Sangobay Musambwa and Kagera wetland system which are Important Bird Areas (IBA) in Uganda. It's the biggest tract of swamp forest in Uganda. It is an important stopover of migratory birds like White-winged Black Tern *Chlidonias leucopterus*, breeding ground for fish and also harbours important and endangered species. These species include blue swallows (*Hirundo atrocaerulea*), elephants (*loxodonta cyclotis*) Shoebill *Balaeniceps rex* among others.

Over the time the forest reserves is facing a number of threats which include overgrazing by migrant pastoralists from Tanzania, illegal harvesting of timber, expansion and encroachment by farmers, increasing population within in the regions which has also increased pressure on the forest resources and rampant encroachment.



Photo showing encroached forest patch with intact forest in the background

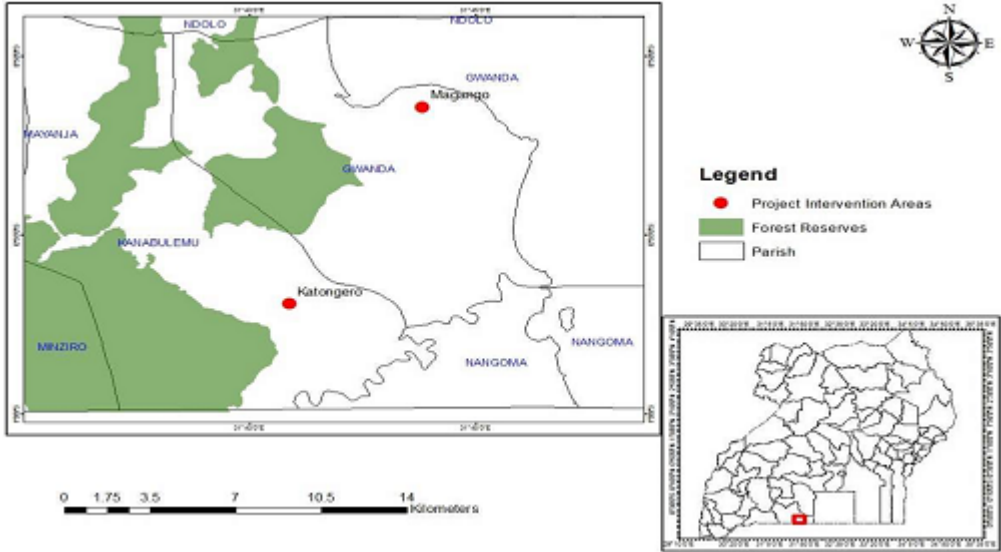


These threats to forests are not only limited to Sangobay forest reserve (SFR) but it is a general trend in Uganda. According to MWLE, 2003 in 1890, forests covered approximately 10,800,000 hectares or 52% of Uganda's surface area. By 1996, forest cover had turned down to about 20%. Though these threats were not pronounced on SFR, the trends changed in the first decade of the 21<sup>st</sup> century. This can be attributed to the general trend of destruction as well as the inadequate capacities of National Forestry Authority (NFA). Therefore communities need to be at the forefront of the different conservation interventions and ownership of the resources on which they directly survive.

With current encroachment in the forests, many species have begun occupying the niches within community lands. This calls for habitat conservation and improvement within community farmlands as well as creating awareness on the importance of biodiversity conservation. This will create long term species survival mechanisms through understanding, appreciation and conservation. But to effectively achieve this, it needs to carry the same meanings with people and one of the proposed approach to effectively achieve this by use of the cultural values and conservation approach.

**Project Area**

The project operated around Sangobay forest Reserve. The reserve is located in the Southern part of Uganda, near Lake Victoria. Administratively, the project operated in two parishes covering 10 villages. The parishes included; Kanabulemu and Gwanda all located in Kyebe Sub County, Rakai district. The area is predominated by the Baganda people who have different attachments to the natural resources found within forest reserves and on farmlands. They are predominantly peasant farmers and fishermen given the proximity of Lake Victoria.



Map Showing location of the project intervention areas in relation to Uganda

**Project Approach**

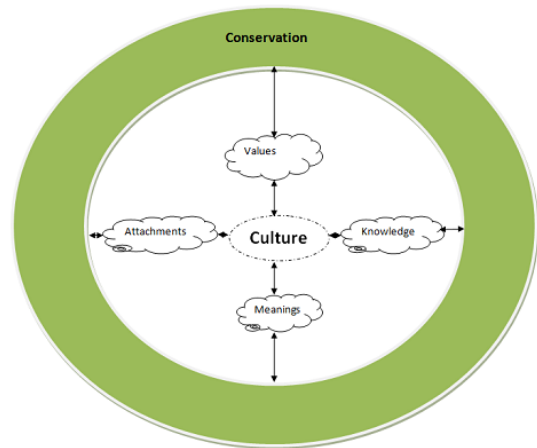
The project used culture as a tool to conservation. Culture can be broadly understood as people's way of living, attachments as well as meanings they derive from different things.

The use of natural resources has an intricate link on how Natural Resources are interpreted by people. Conservation interventions have in most cases imported solutions which do not necessarily reflect people's understanding towards Natural Resources management. This has promoted the economic lens of natural resources as opposed to the aesthetic values derived from the Natural resources. The later approach is more sustainable and is a precursor to the former.

It is therefore important to front the indigenous values (norms, taboos, beliefs) and knowledge people derive from such resources while factoring in the economic needs of the communities given the fact that majority of these communities solely depend on Natural Resources for their survival. The project sought to achieve this through adding value to the different natural resources derived from the natural resources in a sustainable manner without compromising their ecological functionality.

To enhance the cultural values approach to conservation, the project sought for the cultural linkages, attachments, values, meanings and knowledge the community had on how natural resources are utilized. This informed the project design to formulate activities which would enhance such linkages and make similar meanings which is a precursor to sustainability of the project interventions.

The project acknowledges that culture as an approach cannot singly promote conservation although it is a core on which other approaches can be built. Therefore to understand the impacts as well as enhancing the sustainability, the project co-opted other approaches to inform the project activities and design. The project is using biodiversity monitoring with aves as a flagship class and later class insecta (butterflies). Also community institutional mechanisms and advocacy have been adopted.



Conceptual framework of culture as an approach to conservation

## The Project

### Project Objectives

The project activities were guided by the following objectives;

1. Promote awareness of Cultural values approach to on-farm biodiversity conservation
2. Build the capacity of the community in different conservation techniques
3. Improve integrity of farms as safe havens for biodiversity
4. Improve livelihoods of project intervention communities
5. Share project related information with stakeholders for wider impact and replication

#### **Promote awareness of Cultural values approach to on-farm biodiversity conservation**

By the end of the project 7 formal awareness creation meetings and workshops were conducted 5 in the communities of both Gwanda and Kanabulemu, one at the sub county for the councilors, and one at Rakai district local government). Also informal meetings were conducted within the community and other stakeholders. During the meetings, a number of concepts were discussed including but not limited to Conservation, culture in relation to conservation, benefits of conservations (social, economic, aesthetic etc) and community as key custodians to conservation. In total over 200 people attended the meetings though women were far less compared to men.



Awareness creation workshops in the community

Refresher trainings were done during the different trainings in the community on culture, conservation and how they relate to on-farm biodiversity conservation.



Informal awareness creation interactions in the community

Due to the awareness created, the number of people embracing the project concepts and the support received from the district administration has increased. The project started with 10 people willing to participate in planting the Ficus trees but by the end of the project over 100 farmers have planted Ficus on their gardens. The project supported 50 farmers in purchasing the ficus but overtime many have gone their way to purchase the planting materials by themselves though more support is required. With such an attitude, the project interventions and other corroborating efforts will be sustainable and the intervention area will act as a laboratory for reference as far as on-farm biodiversity conservation is concerned.

To ensure understanding from the community perspectives, the community members first discussed what they understood by the terminologies used in conservation and these were supplemented by a lecture cautious of not altering the meanings they attributed to the different concepts. Though not limited to, the awareness sessions were mainly arranged three themes; Conservation, Culture, values and meanings. The intricate link between culture, values and conservation was explored and the relevance of the project to the community.

Also during the awareness sessions the community members were sensitised on the importance of planting trees, importance of Sangobay as part of the Ramsar site and forest reserves. Emphasis was put on the endangered species in the area such as the elephants. The team informed the community members about conserving buffer zones (including sacred sites) within their community areas or gardens as alternative habitats for fauna especially birds. Among these included dispersal of fruit seeds within their gardens, increased fertility arising from the manure from trees with nutrients which are brought on the surface by only trees after they have leached in deeper layers of the soil.

### **Build the capacity of the community in different conservation techniques**

The community underwent a number of trainings as far as community conservation techniques are concerned. These ranged from tree planting and management using indigenous and conventional knowledge. The training involved both community experts in Ficus spp and researchers from Bark cloth enterprise Uganda (BEU) who double as entrepreneurs in products from it. Monitoring of the planted Ficus spp has been done by a selected team from the community and BEU.

Also the communities were trained in bird identification. During the training, they were also trained on the importance of monitoring and why their role is pivotal in the exercise. Opportunist visits were also used to build capacity of the communities. A case in point was during the common birds monitoring by NatureUganda when a visit to the project site was done by renowned birder Roger Skeen who gave the community some bird identification tips during a transect walk along the gardens planted with Ficus spp.

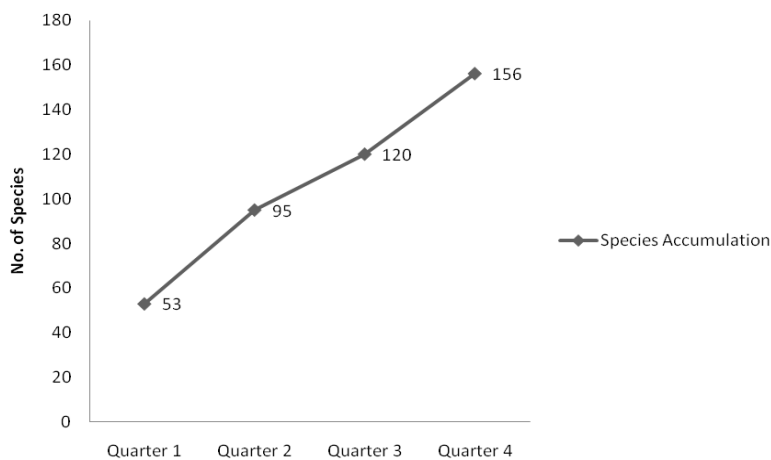


Community members having showed different birding techniques by re-known Birder, Roger Skeen



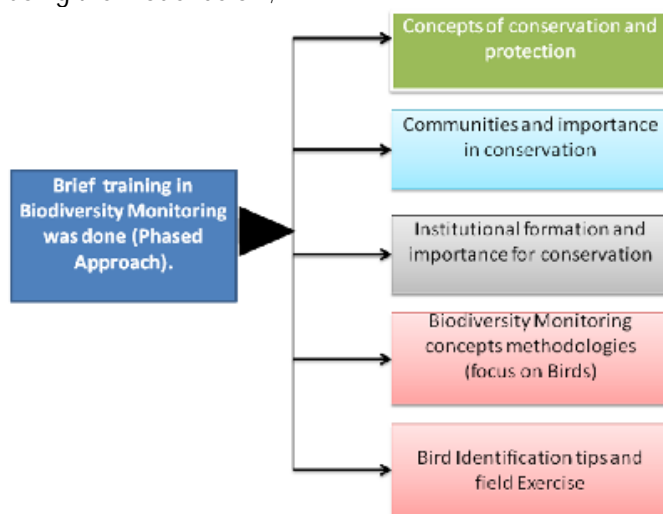
Team member having an interaction with community members on birding

Also systematic monitoring was done every quarter to establish the number of species in both project sites. Over 150 bird species have been recorded by the end of the project-annexed as 1. The accretion of species over time is represented by the species accumulation curve as below;



### ***Bird identification and monitoring training***

Also biodiversity monitoring techniques were introduced among the community members though more trainings are anticipated with future funding. Capacity building in the biodiversity monitoring was done using the model below;



Training in bird identification techniques was also carried out. Though it anticipated over 20 participants from both communities of intervention (Gwanda and Kanabulemu) only 11 attended (7 females and 4 males). The training targeted females given the gender disparities which were identified by the stakeholders. Refresher training is planned for a wider impact but the trainees were encouraged to share the knowledge acquired with other community members. The birding training was done by the project team member, Dianah Nalwanga who doubles as the research coordinator for NatureUganda, The birdlife partner in Uganda. The training covered different topics which included;

- ***Bird watching tips:*** they were encouraged to be alert and use all their senses when doing the birding. They were encouraged to always look out for the possible clues for easy identification of the birds.
- ***Bird identification:*** the participants were taken through identification of the different body parts of the bird because they are the basis of their naming. Other tips which were provided included;

size of the bird, bill (Shape size and colour), and posture, colours of the feathers, activity and habitat. All these are critical in identifying different birds.

- **Simple analysis and trends:** The participants were introduced to simple analysis of data accumulated from the monitoring of biodiversity. They were encouraged to be keen and detect any changes and if possible allocate the probable causes.



Participants introduced to bird identification tips

- **Record keeping;** they were encouraged always to move with a note book and pencil to record every species they can identify as well as sketching those that they don't for later recognition. Also the relevance of their role in collecting data and analysis for conservation interpretation was emphasised.
- **Use of field equipments (Binoculars and field guide);** the participants were introduced to the use of binoculars and telescopes. Three binoculars were handed over to the community and 2 bird guides. They were inducted into how to use the book especially the index and interpretation of the information there in for easy identification of the birds.
- Care of such equipment was demonstrated and emphasized with the Do's and don'ts clearly outlined.



Participants learning how to use binoculars

Although the field exercise was planned after the theoretical training, it was not possible due to the heavy down pour. However, the team used the different site visits to induct the field team on practical aspects of birding.



Community members practice use of the equipment and identification of the different species on their farms

The team handed over birding equipment to the community. These included 2 binoculars (received from IDEA WILD), 2 bird guide books. It was agreed that one binocular be given to the mentor group at Musambwa Islands in close proximity to the project area.

They plan to incorporate the acquired skills into tour guiding especially as far as birding and culture is concerned.



Project team members handing over birding equipment and materials from partners

By the end of this project phase, the communities have started identifying a number of birds especially the large sized species like the hornbills, Ibis and Turacos. They however showed difficulty in grasping some of the bird names and calls though they are familiar with them. Translation of the names to the local language is ongoing but it will be more robust during the subsequent phases.

### Improve integrity of farms as safe havens for biodiversity

As earlier highlighted, the increased threats and encroachment on Sangobay forest has resulted in the species seeking farmlands as safe havens. Therefore the farm integrity needs to be improved to provide an alternative habitat to them. To achieve this, the project engaged the communities in planting trees on their farms. Although there are a number of agro biodiversity tree varieties, the project focus on two species; The *Ficus spp* and the *Meopsis emini*.

The flagship species for the project was the *Ficus spp* due to the enormous benefits accrued from them. The tree provides a bark from which bark cloth is made and this can be collected for over 20 years depending on the management techniques involved. The bark cloth is central in all the Baganda cultural functions. Through application of indigenous knowledge, the bark cloth is made through rhythmic hammering using wooden gadgets made locally. The bark of the tree is covered with banana fibres and treated with local materials like cow dung to facilitate regeneration of the bark for future harvesting of the bark cloth. However, if mismanaged, this can lead to drying of the whole tree.



Barkcloth making process-Hammering



Well covered one year Ficus tree after debarking through use of indigenous knowledge



Young Ficus tree-Dried from poor bark harvesting techniques

Other benefits are accrued from these trees which include but not limited to; wind breaking when they have grown, improved fertility due to nutrient recycling from lower soil layers, shade for crops especially coffee, fruits for birds which facilitate dispersal of other tree species, firewood and fodder for animals (immediately experienced).



A goat eating Ficus leaves from the recently planted trees.....The woody parts are dried for firewood.



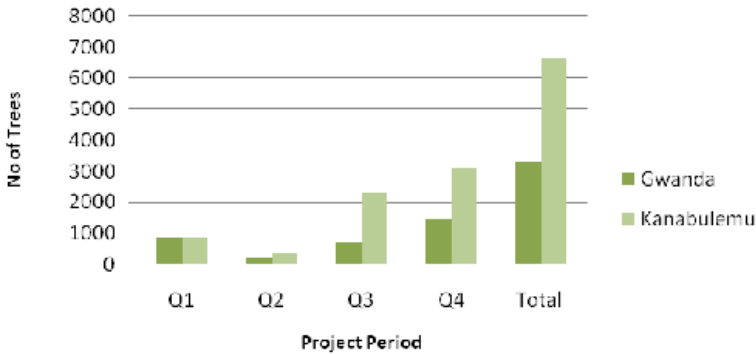
Before engaging the communities in planting the trees, they were trained in planting and managing the trees. A total of 65 members were trained in both communities. Although 65 were trained, 50 farmers showed interest in planting the trees. A total of 6000 *Ficus sp* Seedlings were provided by the project.

Also a total of 7000 *Meopsis eminii* seedlings were provided for planting on farm lands. By the end of the project over 20,000 *Ficus* trees were planted within the landscape. This was attributed to the awareness created by the community focal persons and also adoption due to the enormous benefits identified. Despite this success the project encountered challenges as far as tree planting is concerned. These included but not limited to;

**Drying up of trees:** Some farmers planted the trees during/towards the dry season and they dried up. A total of 718 trees were recorded to have dried.

**Poor propagation techniques:** Some community members planted trees without training leading to poor planting techniques. According to BEU and community monitors, such trees produce poor barkcloth.

**Rate of Tree Planting**



No of tree planted with project support

Talks are underway with the Buganda government to provide land for further growing of the *Ficus* tree as a community project managed under the established Community Based Organisations (CBOs).



Community members during training in tree planting

A number of tree management techniques are involved in growing *Ficus spp* trees to ensure that they provide quality barkcloth. These cannot just be taught in a workshop set up but can be adopted over time as there trees grow. To ensure this, Barkcloth Enterprise Uganda (BEU) and experienced

community members especially elders have conducted 5 monitoring trips rounds among the farmers to ensure the trees are growing healthily and also provide farmers with real time correctional tips. Also a peer to peer monitoring mechanism is being instituted to ensure that continuity and dissemination of knowledge acquired from experienced monitors.

Although the project target was superseded, a number of challenges were encountered during the growth of the trees. These included but not limited to; increased prices due to increased demand, drying of tree due to drought, unsustainable seed supply especially for *Meopsis eminii*, demonizing of the activity by some religious sects, participation of the youths is appreciated but still low.

The project targeted improving the ecological integrity of the sacred sites through restoration and rehabilitation. The sacred sites act as natural habitats for fauna given the sacredness communities attach to them. Some site owners claimed that they were waiting for messages from spirits to commence the work. By the end of the project, only two families had agreed to restore the site and conduct the related spiritual rites. These will be mapped and restored/rehabilitated in the subsequent project phases.

### ***Georeferencing of the trees***

The project aimed at georeferencing all the planted trees. However due to resources and techniques involved, this was not possible. Instead it adopted sampling where a few trees were georeferenced from each garden. According to the GIS expert, Mr. Phillip Kihumuro, who trained the project team in GPS use and georeferencing systems, he noted that the GPS model used could only accommodate 2000 points yet the trees were exceeding this number.

Georeferencing was one of the key skills to be acquired by the team from this project. The can comfortably use the GPS and also use do simple analysis with the Arc Map software as well as Google Earth. The georeferenced trees (Samples) were to help the team establish the transects on which subsequent monitoring will be done as a means of understanding the project impacts on biodiversity. The data accumulated will also be used to lobby investors and enterprises engaged in Bark cloths products making to establish strategic partnerships due to assured supply capacity.

Ficus and Meopsis Tree growing - The Story



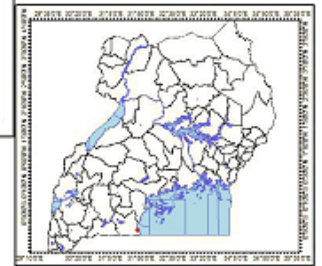
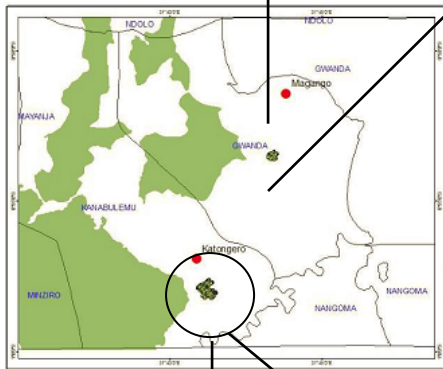
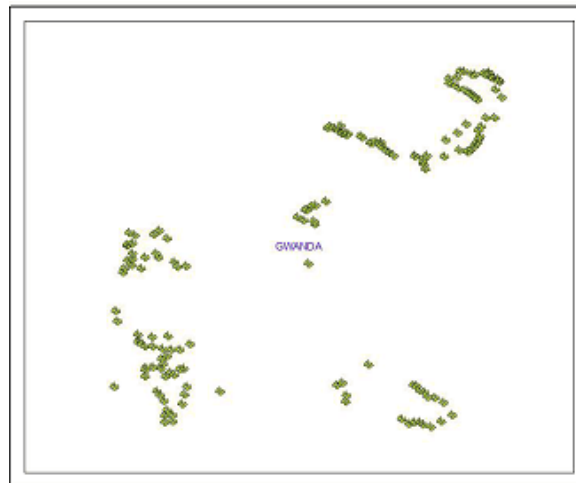




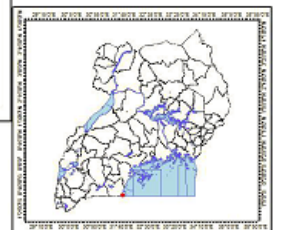
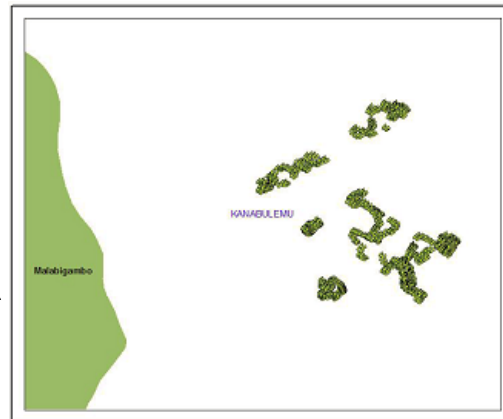
1. Extent of growth of the *Ficus spp* by one month. 2. Extent of growth of the *Ficus spp* by five months. 3. *Ficus* used as fences to protect gardens from animals and also act as land demarcation. 4. More synergies expected out of the *Ficus spp* and *Meopsis tree* planting on the farm. The communities are looking at promoting their coffee under the brand of shaded coffee. 5. Poor yields, agroforestry could be a remedy of improved soil fertility. 6. Community focal person, kimera showing the planted *Meopsis eminii*. 7. Poorly maintained barkcloth processing places due to low interest from the community. This can affect the tree planting through negative attitude retrospectively.

# Georeferenced Maps with Planted trees

Extent of coverage of planted trees

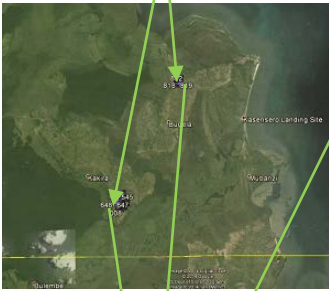


Extent of coverage of planted trees

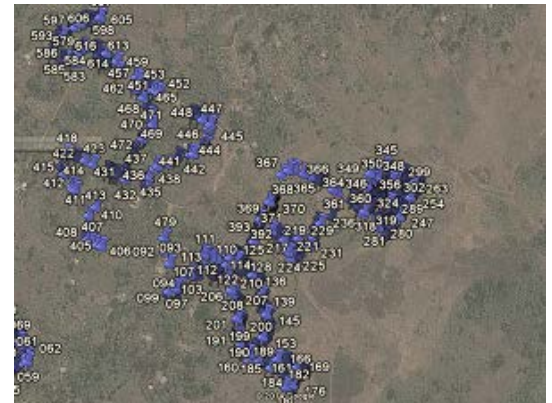
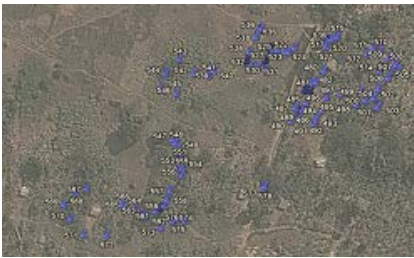
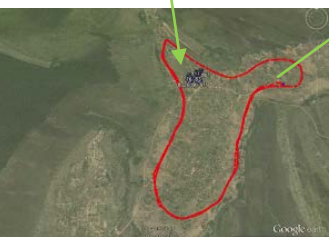


### Aerial View of trees in community

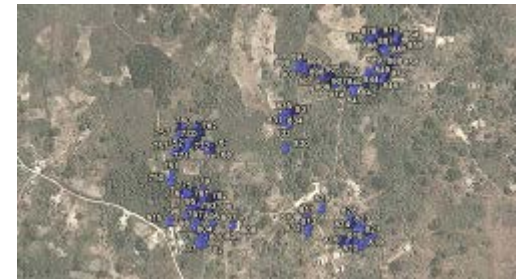
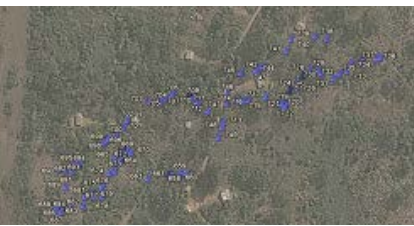
### Detailed Aerial View - Kanabulemu



### Extent of coverage



### Detailed Aerial View - Gwanda



Aerial views of the sampled trees planted in the community farms. Due to resource constraints the project team sampled some planted areas but the photos show the extent of coverage of the areas in which the trees were planted.

## Improve livelihoods of project intervention communities

Although one of the ultimate goals of the project is to improve the livelihoods of the communities through using cultural values and conservation approach, at this stage of the project, the team would not quantify the net positive impact of the project. The team established however that the project had impacts on livelihoods of the community in some ways. These included;

**Attitude Change:** through the different awareness sessions, the community members were showed linkages in which natural resources can be exploited in a sustainable manner and how they can use them to improve their livelihoods

**Purchase of Ficus seedlings:** All the *Ficus sp* tree seedlings were purchased from community members who had the identified species to plant. These contributed to improvement of incomes for those households.

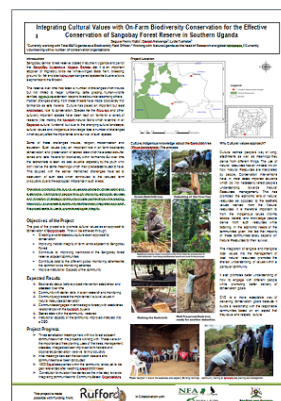
The project however anticipates increased incomes in intervention communities 3 years after the project when the *Ficus spp* trees have matured. In the subsequent phases of the project, the communities will be training in tree planting and nursery setup for provision of planting materials for other species like *Meopsis eminii* and other identified. These will be bought at a subsidized rate to ensure sustainable provisions of such planting materials. Institutional collaborations will be setup with the National Forestry Authority for seed collection by the community from the forest reserve.

Efforts are underway to search for market of the bark cloth with potentials identified from Uganda, Kenya and beyond.

Although the project had targeted establishing a formal relationship between the community and the investors, this was not possible because the later were skeptical of their will and ability to plant and manage commercially viable numbers which can sustain the bark cloth market.

To avert this, the project has showcased the community efforts through the georeferenced data and compiled data. This has boosted the partnership confidence in the venture and partnerships are being established between the bark cloth entrepreneurs for bulk purchases and also involve the department of Art and Design Makerere University to engage the communities especially women in making the end products from the bark cloth like hats, dresses, key holders etc in a professional manner. This will go a long way on creating sustainable income for the communities as well as fetching more incomes from value addition.

## Share project related information with stakeholders for wider impact and replication



Team leader presenting the project poster to participants



Project related information has been shared by different stakeholders and networks. 2 posters have been presented at 2 Rufford grantees conferences in Mombasa, Kenya and Kigali Rwanda.

Also the reports and project proceedings have been shared with different organisations whose work is related to that promoted by the project. These include Fauna and Flora international (Uganda), NatureUganda, National Forestry authority, Rakai district local government, Kyebe sub county and the communities within the project area. This has garnered more support for the project and potential areas of collaboration, research and documentation are being discussed with potential collaborators.

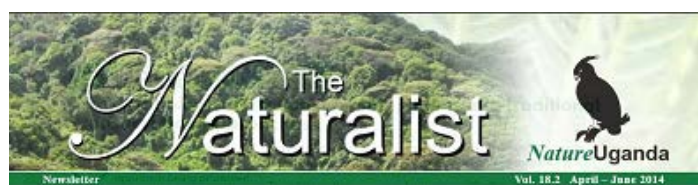
Also through such forums, the team was able to establish linkages with potential customers and fashion houses. One of such customers is African Forest in Kenya who are looking at promoting the barkcloth under the brand of **“wearing the forest”** as an extra ecological benefit from the forests or trees on the top of others like wind breakers, contribution to rain.

Other linkages have been established with local artisanal factories that are looking at making bicycles from ecological materials of which bark cloth was identified as one of them.



Gwanda Community members displaying the barkcloth samples before sending them to Nairobi

One article relating to the project was published in the naturalist magazine (Nature Uganda) which is circulated to over 2000 of its members and published, floated on the internet. It can be accessed from; <http://www.natureuganda.org/downloads/Naturalists/Naturalist%20April-June%202014.pdf>



## **Establish institutions which promote awareness about on farm biodiversity conservation**

One Community Based Organisation, Kagera Tourism and (Conservation Organisation-KATOCO) has been formed. This will enable the project as well the different development and conservation partners have formalised interactions with the community. However more training is needed to build capacities of the CBOs in management and institutional running to ensure sustainability of the project activities.

Also the project seeks to strengthen the working relationships with the already established institutions to promote awareness about culture as an approach to conservation as well as on-farm biodiversity conservation

## **Challenges Encountered**

There were a number of unforeseen difficulties which had an impact on some of the project activities. Some of these included but not limited to;

***Weather:*** The prolonged wet seasons had a hitch on project implementations. The team would travel from Kampala and on several occasions be delayed by the rains. At times the turn-up would be low hindered achievement of the project targets but the attendees were always encouraged to pass on the message to others. A case in point was the training of the community members in bird identification. Although the training was scheduled for over 20 people, only 10 attended. More training sessions are scheduled for the when the project has been funded again and also those who were trained were encouraged to train others.

Planning will be emphasised to implement activities mainly during the hot season and plant the trees at the beginning of the rain seasons.

Also, the sunny season led to some of the tree seedlings drying up with over 500 trees recorded.

***Technical gaps:*** The team never had in-house capacities for GIS data manipulations and collection. This caused the team to extend the project implementation period given the fact that the trainer has a tight schedule. The training, data collection and processing happened in late July though the project was intended to end in May officially.

***Managing interests:*** some partners of the project especially the district local government have noted that the project is dominated by men especially as far as bark cloth processing is concerned. They have encouraged the project team to factor in the gender concerns in the future designs of the project. The project team has encouraged more women especially the youth to participate more in the bird monitoring training and efforts are underway to source for support to make marketable crafts from the backcloth.

***Gender Concerns:*** some partners of the project especially the district local government have noted that the project is dominated by men especially as far as bark cloth processing is concerned. They have encouraged the project team to factor in the gender concerns in the future designs of the project.

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***Under looking the Concept:*** Given the fact that youths of the area are predominantly engaged in fishing and some constrained by lack of land, majority have not embraced the concept and they still consider it as backwards and a slow process of bringing in money. More awareness creating efforts are underway to engage them in the project activities using fellow community members as the change agents.

### **Looking Ahead after Project Phase 1**

Some of the important steps after the first phase of the project include;

More capacity building and exposure need to be done for the communities to improve their skill in avian monitoring. There is need for standardising the monitoring regimes for production of credible data to contribute to the common birds monitoring scheme. This will arise from transects created from the mapped data arising from the GIS mapping exercise.

The tree planting campaign needs to be promoted further given the interest exhibited by the community members and given the fact that habitat integrity cannot be achieved in one day. This will go a long way in improving the ecological integrity of the farms. This coupled with the changed attitude will help in creating safe havens for biodiversity on people's farmlands. The second phase will target expanding the project scope area and adopting other villages where planting has not commenced and if the resources allow, also one sub county will be co-opted. The planted trees will also be geo-referenced and updated maps as well as statistics produced.

Training the youths in bark cloth making; as highlighted in the subsequent interactions with the communities, there was a skills gap in making bark cloth. The youths have not inherited the skills from the older generation but after awareness, many have showed interest in revamping the activity which entirely applies indigenous knowledge and tools. This will go a long way on conserving nature related cultural practices and changing the perceptions the people have towards nature. It brings the balance between economics, aesthetics, culture of which the later creates more attachment to conservation of the resources.

More market linkages will be mobilised to ensure that the bark cloth made by the farmers can be sold off. This will arise from evidence based records, GIS data and standardisation of the bark cloth to ensure a close to same quality product. With available market, the community will go a long way in attaching value to the already planted trees and giving confidence (supply in quantity and quality) to the investors dealing in bark cloth and those interested.

Improve institutional management capacities of the established CBOs to ensure sustainability of the project interventions and replication.

### **Conclusion**

The project to a larger extent achieved its objectives. Awareness about culture as a tool to conservation and on farm biodiversity conservation was done. This was reflected in the increased will and number of

people to plant barkcloth trees and *Meopsis eminii* trees on their farms. To sustain the achievements of the project, institutions need to be in place and the project formulated one CBO with plans to train them in institutional management and sustainability. The will of the community to promote conservation will be enhanced by further insights of understanding the ecology of the flora and fauna. This will be achieved through the understanding of the biodiversity on their farms and beyond. The project has embarked on this process through training the community on avian identification, ecology and simple analysis. Planting of the trees will go a long way in improving the ecological integrity of the farms once the trees reach maturity as well as other benefits which are accrued from them.

## Recommendations

1. More efforts need to be instituted to promote culture as a tool to conservation as well as on farm biodiversity conservation since they make more meaning to the people as they can be easily owned, replicated over generations.
2. More support needs to be provided for the initiated project activities to give a complete story of the interventions and to promote the project area as a laboratory where culture as a tool conservation, livelihood improvement can be show cased to the conservation fraternity.
3. More training needs to be provided to the community especially as far as advocacy; research and data collection is concerned.
4. Tree planting needs to be enhanced and awareness created to ensure on farm biodiversity conservation is a widely accepted approach to conservation. This will go a long way in giving alternatives to forest resources like firewood at the same time providing alternative habitats to forest avian species.

## Annex 1: Species Counted in the 2 project sites

Black And White Casqued Hornbill	Spectacled Weaver
African Thrush	Emerald Cuckoo
Common Bulbul	Yellow-Mantled Weaver
Great Blue Turaco	Forest Wood Hoopoe
Eastern Grey Plantain Eater	Great Sparrowhawk
Crowned Hornbill	Greater Honeyguide
Crested Guineafowl	Pied Hornbill
Crowned Eagle	Scaly-Breasted Illadopsis
Long Crested Eagle	Green Hylia
Violets Weaver	Grey Parrot
Red Checked Cordon Blue	White-Throated Greenbul
Helmeted Guinea Fowl	Didric Cuckoo
Fan Tailed Widow Bird	Palm Swift
Stone Chat	Scarlet-Chested Sunbird
Black Lowered Babblers	Yellow-Fronted Tinkerbird
Woodland King Fisher	Brown-Eared Woodpecker
Sooty Chat	Dusky Crested Flycatcher
Rupell's Long Tailed Sterling	Green-Backed Twinspot
Green Pigeon	White-Headed Roughwing
Jameson's Wattle-Eye	Double-Toothed Barbet
Levaillant's Cuckoo	Green-Throated Sunbird
Magpie Mannikin	Yellow-Rumped Tinkerbird
Grey-Backed Camaroptera	Brown-Throated Wattle-Eye
Grey-Throated Flycatcher	Green Sunbird
Olive-Bellied Sunbird	White-Breasted Negrofinch
Cassin's Honeybird	Buff-Spotted Woodpecker
Grosbeak Weaver	Klaas' Cuckoo
Purple-Headed Glossy Starling	Cassin's Spinetail
Narina's Trogon	Honeyguide Greenbul
Red-Bellied Paradise Flycatcher	White-Browed Coucal
Scaly Francolin	Olive Sunbird
Snowy-Headed Robin-Chat	Red-Chested Cuckoo
Tit Hylia	Red-Eyed Dove
Velvet-Mantled Drongo	Lesser Honeyguide
Bronzy Mannikin	Speckled Tinkerbird
Little Green Sunbird	Violet-Backed Starling
Western Black-Headed Oriole	Northern Black Flycatcher
Yellowbill	Superb Sunbird
Harrier Hawk	Tambourine Dove
Black-Bellied Seed-Cracker	Black-Throated Apalis
Grey Headed Sparrow	Lesser Striped Swallow
Hadada Ibis	Green Sunbird
Hammerkop	Afep Pigeon
Pied Wagtail	Cameroon Sombre Greenbul
Lizard Buzzard	White-Chinned Prinia
Ross's Turaco	Cardinal Woodpecker
Crowned Eagle	Dusky Long-Tailed Cuckoo
Red-Headed Lovebird	Black-Faced Rufous Warbler
African Dwarf Kingfisher	Grey-Cheeked Hornbill
Grey Cheeked Hornbill	Slender-Billed Greenbul
Ring Necked Dove	Dusky Tit
Blue Spotted Wood Dove	Green-Tailed Bristlebill
Hairy Brested Barbet	Weyns' Weaver
Sooty Boubou	Jameson's wattle eye
African Shrike Flycatcher	
Splendid Glossy Starling	