

BWINDI MGAHINGA CONSERVATION TRUST (BMCT)
Batwa Population Census Report 2016



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Acronyms and Abbreviations

- BINP - Bwindi Impenetrable National Park,
- BMCA - Bwindi Mgahinga Conservation Area
- BMCT - Bwindi Mgahinga Conservation Trust
- EPDC – Education Policy and Data Center
- GEF - Global Environmental Facility
- HDDS - Household Dietary Diversity Score
- MGNP - Mgahinga Gorilla National Park
- SPSS – Statistical Package for Social Scientists
- TAU - Trust Administrative Unit
- TMB - Trust Management Board
- UACE - Uganda Advanced Certificate of Education
- VSLA – Village Saving and Loans Associations

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Executive Summary

Bwindi-Mgahinga Conservation Trust (BMCT) has worked closely with and promoted the welfare of neighboring communities to the park especially the Batwa. BMCT's Mission is to promote conservation of biodiversity in BINP and MGNP through investment in community development projects, research and ecological monitoring, park management and protection, and programmes that create greater conservation awareness." Objectives of the study

Bwindi Mgahinga Conservation Trust (BMCT) conducted Batwa population census in April 2016. This census was intended to find out the following;

- To collect and analyse the relevant information of existing Batwa situation in the BMCA (including number of Batwa, sex disaggregation, education status, age, number of households, average household size etc)
- To establish the relationship between Batwa owning land and the education status of their children, volume of harvest (food security), nutritional status, and housing conditions.
- To identify challenges Batwa are facing and find appropriate solutions which in end will help BMCT in planning

Methodology.

BMCT conducted the study to find out the number of Batwa in the BMCA, establish the relationship between Batwa owning land and the education status of their children, volume of harvest (food security), nutritional status, and housing conditions and identify challenges Batwa are facing and find appropriate solutions which in end will help BMCT in planning. The study utilised both quantitative and qualitative research methodologies. It involved careful constitution and proper training of the survey team as well as preparation of all the survey instruments. The initial stage was conducting the desk review of relevant project documents concerning Batwa in the BMCA. This was complemented by primary data collection that covered conducting household survey targeting all Batwa in BMCT operation area, conducting key informant interviews with project staff and the community Leaders; Analysis involved organisation of the raw data from qualitative and quantitative findings, summarising and presentation in form of simple descriptive statistics utilising appropriate graphs and tables, with appropriate comparison being made

Key findings from the census include;

Background Characteristics of the Batwa



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- There are 3,463 (1,685 males & 1,778 females) Batwa in the Bwindi Mgahinga Conservation Area (BMCA)
- 4.5 is the average household size among the Batwa.
- 68.8% of the Batwa in the BMCA are below 25 years

Land ownership and usage among the Batwa

- 43.6% of the Batwa households in the BMCA have access to farm land.
- 47.0% of Batwa in the BMCA live in grass thatched houses.
- An average of 0.5 acres of land per household was cultivated by Batwa during the last season
- Most Batwa farmers planted Beans (25.7%, N=197), followed by sweet potatoes (14.2%, N=109), irish potatoes (13.1%, N=100), maize (12.7%, N=97), millet (7.6%, N=58).
- The average acreage planted per crop among households reflects the same order, Beans (0.3 acres), followed by sweet potatoes (0.32 acres), irish potatoes (0.34 acres), maize (0.31 acres), millet (0.3 acres) etc

Nutritional status of the Batwa

- On average Batwa take 2 meals a day
- Their household dietary diversity score is 5, meaning and this is an indication that the food consumption pattern offers some diversity of a balanced diet.

The program recommends the following;

- There is need to bring such land into productive use by sensitizing Batwa on landuse, providing support with essential inputs such as seeds and tools so as to build their capacity for self sufficiency.
- The program should aim at increasing production and adoption of crops such as beans, groundnuts and maize as opportunities exists for more farmers to be involved and supported to increase acreage under which to plant such crops.
- Adoption of Sound Environmental Practices is also an essential component when considering how food production must be enhanced and how food security of farming families improved. Good environmental practices are also critical for sustainable land productivity
- At the household level, efficient use of locally available food and improved care practices is the way to go. This could be further strengthened through the promotion and use of nutritious crops in home gardens



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- Batwa partners in collaboration with Local governments should come up with byelaws and ordinances which obligate the caretakers and parents to ensure that all children of school going age stay at school.
- BMCT and partners should sensitize Batwa parents and children about the importance of sending their children to school and participating in school activities.
- The office of Community Development should strengthen the enforcement of labour laws to reduce on child labour and abuse of children's rights at the same time following up acts of alcoholism and domestic violence
- Revitalise Batwa stakeholder's coordination meetings to strengthen monitoring of children enrolment, dropout in schools and other school related issues.

1.1: Introduction

Bwindi-Mgahinga Conservation Trust (BMCT) was established as an independent body under Ugandan law (the Trustee Act cap 142). BMCT has a strong experience and expertise to provide long-term reliable support for projects promoting sustainable use of natural resources in the Mgahinga Gorilla National Park (MGNP) and Bwindi Impenetrable National Park (BINP), research and conservation of biological diversity in order to minimize negative impact on the parks that are habitats of the most endangered species on planet earth. It has worked closely with and promoted the welfare of neighboring communities especially the Batwa. The major activities BMCT has undertaken among the Batwa include resettling Batwa through buying 406 acres of land, provision of inputs, supporting Batwa learners through provision of scholastic materials like uniforms, exercise books, pens, pencils, etc.

1.2: Goal and Objectives of the study

During the course of the year, BMCT managed to conduct Batwa census with the following objectives;

- To collect and analyse the relevant information of existing Batwa situation in the BMCA (including number of Batwa, sex disaggregation, education status, age, number of households, average household size etc)
- To establish the relationship between Batwa owning land and the education status of their children, volume of harvest (food security), nutritional status, and housing conditions.
- To identify challenges Batwa are facing and find appropriate solutions which in end will help BMCT in planning

Methodology

2.1: Introduction

The study was conducted as a cross-sectional assessment that utilised both quantitative and qualitative data collection methods and the study process involved the following activities:

- Extensive review of literature including project design documents, BMCT reports, analysis of secondary data obtained from BMCT databases and other partners.



- Household survey targeting all Batwa in the BMCA. This looked at number of Batwa in the BMCA, sex disaggregation, age, education, land ownership, nutritional status, volume of harvest etc.

Batwa Census data consisted of Batwa families who live in the villages in the Bwindi Mgahinga Conservation Area (BMCA). This area consists of the 3 districts ie Kabale, Kisoro and Kanungu and due to their availability at home and ease of divulging child related information parents/ children who are above 18 were targeted as the main respondents.

2.2: Census Period

The entire census process, from initial planning to final entry of data, ran from January 2016 to June 2016. The training of data collectors, pretesting of questionnaires and field data collection all took place in the same period. Data entry was conducted after data collection where data was entered the day after completed questionnaires were submitted. The interpretation of results and writing of this report took two months, and the final presentation of results to the implementing team took place in July 2016.

2.3: Data Collection Tools questions

A Questionnaire was the main tool used for data collection (*Appendix 1*). Observation was applied for variables such as estimating number of acres of land per household. The questionnaire consisted of questions that would capture monitoring indicators for number of Batwa, access to land, those involved in farming, volume of harvest, Batwa household dietary diversity score etc The nutrition questions were modified to include a few listings of some locally-available foods, and to reflect local customs and culture where necessary. No translation of the questionnaire was done since all the data collectors were Batwa and were able to read and easily translate the English version of the questionnaire without difficulty.

2.4: Training, Pre-testing and Team Supervision,

The data collection was conducted by four Batwa individuals who have at least attained Uganda Advanced Certificate of Education (UACE). During the census period, Trust Administrative Unit (TAU) team closely supervised the work of the enumerators during the entire period of the census. The initial training of interviewers and supervisors together was completed over a period of four days in Kabale office. During the training, the interviewers and supervisors reviewed the questionnaire, learned how to select households and other basic survey methodology, practiced using the questionnaire, and had the opportunity to pre-test during the last day of training.

The questionnaire was pretested during the field practice phase of the survey training to assure that respondents in local communities understood the questions, and to give the interviewers additional practice in the field and a last chance to discuss questions not clearly understood, answer categories, skip patterns, etc. After pre-testing, changes were made to the original script to reflect the practical reality from the feedback and final copies of the questionnaires were prepared in readiness for the field survey.

2.5: Data Collection

The study was conducted over a ten day period. Supervisors of each team led in selection of first households and overall survey team management. They (the supervisors) also checked at random at least three completed interviews by each interviewer each day. Questionnaires were randomly checked for completeness before the survey team left the survey area, so that in the case of missing or contradictory information the respondent could be visited again that same day. Despite the supervisors' efforts, a few interview forms reached the central office for data entry with missing entries. This mainly occurred where the respondent(s) did not have the required information. In a few cases, the responsible supervisors returned to the communities to obtain the missing data. No interviewers were refused interviews by the respondents.

2.6: Data Entry and Cleaning

Data cleaning was done in four stages. First, cleaning was done at field level as questionnaires were coming in from the field. This process entailed checking for data entry errors and verification for each variable. Where there were errors questionnaires were returned for correction and verification before entry into MS EXCEL data entry template. The second stage involved cleaning of data entered into the EXCEL by running filters checking for outliers at both ends of the distribution separately. The third stage involved detecting outlying unit values of particular data for that specific observation were set to be missing. The fourth stage involved exporting EXCEL data to SPSS for analysis.

2.7: Data Analysis

Data was entered into an EXCEL spread sheet and exported to SPSS for analysis. Data cleaning and validation allowed for checking of data entry errors and inconsistencies. Several methods were used in data analysis including the following:

- *Cross tabulations* - A number of methods were used in data analysis. Comparative statistics using cross tabulations were used to analyze data across locations and gender dimensions.
- *Descriptive statistics* - such as frequencies, means, median etc. were also used in the analysis.

2.8: Research Partners and Stakeholders

The stakeholders were actively engaged throughout the evaluation processes right from planning phase, recruiting data collectors, data collection, data entry and processing, analysis, report writing as well as in provision of the feedback. The evaluation results are expected to guide the programme staff and partners in mapping the way forward in relation to the increasing number of Batwa, find appropriate strategies that will create impact among the Batwa.

Findings from the Batwa Census and study 2016

3.1: Introduction

The information presented was collected on all the Batwa in the BMCA, and it looks at number of Batwa, education status, gender, age, land ownership among the Batwa and housing conditions. It is complemented with information extracted from the BMCT reports.

3.2: Characteristics of Households and Respondents

3.2.1: Number of Batwa by sex in the BMCA

The numerical balance between the sexes has a major effect on the demographic, social and economic inter-relationships when cross classified with reference to social and economic variables.

Table 1: Distribution of Batwa by sex in the BMCA

District	# of households	Males	Females	Total
Kisoro	413	908	972	1,880
Kanungu	165	385	391	776
Kabale	188	392	415	807
Total	766	1,685	1,778	3,463

There are 3,463 Batwa in the BMCA with 1,685 males and 1,778 females. There are also 766 Batwa households in the area and majority of Batwa are in Kisoro district. Sex composition is also valuable to help the project understand gender aspects in improving the development and improvement of Batwa communities. According to census results, there are 94.7 males per 100 females among the Batwa in the BMCA. This is in comparison to the national sex ratio which shows that there are 94.5 males per 100 females (UBOS, 2014)

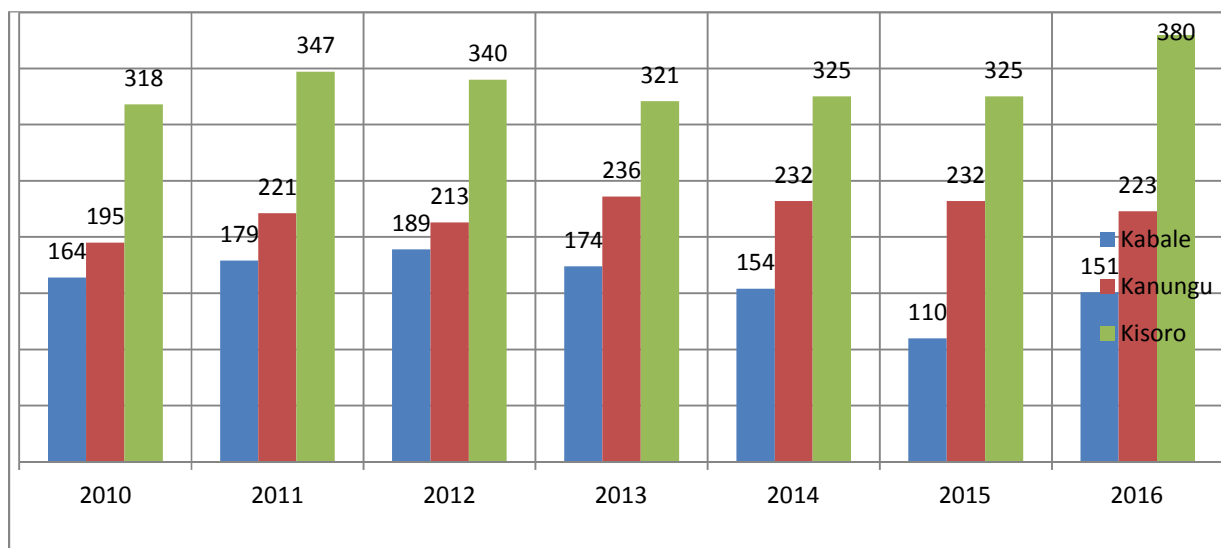
3.2: Contribution of BMCT towards Batwa livelihood improvement

3.2.1: Provision of land

Bwindi Mgahinga Conservation Trust (BMCT) bought 406 acres of land estimated at Shs 4.06Bn for the Batwa who had not accessed land. These included the land less communities in the districts of Kabale, Kanungu and Kisoro which has made 43.6% of the Batwa own land. The aim of this intervention was to resettle the Batwa, so that they can be productive and improve food productivity and engage in economic activities for their improved livelihoods. Furthermore as Batwa originally depended on the forests to gather fruits, honey and mushrooms for their food to supplement their other sources especially through provision of labour to their neighboring agricultural communities. They also needed a home of their own in order to improve their status and level of confidence.

3.2.2: Education of the Batwa

From 2008, BMCT supported pupils in primary education with uniforms and other scholastic materials (exercise books, pens, pencils). In order to motivate them reward to the best performing pupils was also done. One of the supported Mutwa girl with tuition and other relevant school materials over many years completed Uganda Advanced Certificate of Education (UACE) and we are supporting her through the university. We also are working on key aspects of increasing Batwa school retention and completion rates in all districts. The above has resulted into an increase in the enrollment rates as shown in the trends below;



Source: BMCT Report, 2016

3.2.3: Village Savings and Loans Associations

20 VSLA Batwa groups were formed and Batwa members have been trained in VSLA methodology. A total of 431 (270 females & 161 males) Batwa were involved. The training involved principles of VSLA, group formation, general assembly, internal rules and regulations, selection of the management committee, book keeping and how to save. The training was conducted to improve group cohesiveness, the community members saving culture, engage members in income generating activities and integrate Batwa with non Batwa such that they can learn from them for improved livelihood. The following has been observed;

- The VSLA methodology has benefited both Batwa and non Batwa in groups to pool their own funds as savings, access loans for investing in micro projects for generating sustainable incomes at household level.
- Batwa are empowered to make decisions during VSLA meetings. The inclusion of Batwa on VSLA executive committees has empowered them to have self-esteem thus able to contribute in decisions making of group matters.
- BMCT through VSLA activities has facilitated the integration of the Batwa in main stream society activities and position them to benefit from government programs like operation wealth creation.

3.2.4: House construction

BMCT has been able to construct houses for the Batwa to improve the housing conditions of the Batwa in the BMCA. The purpose is to slowly help them to adapt to living in settlements rather than keep moving from place to place. As a result of constructing houses for Batwa the following has been observed;

- Improved Sanitation and hygiene among the Batwa. Due to provision of pit latrines and continuous sensitisations, sanitation and hygiene has greatly improved. Diseases like diarrhoea, dysentery are no longer common compared to the past. Some of the Batwa now have a positive look as some Batwa have bought land to increase their acreage.
- Batwa's self-esteem within the community has improved. Batwa interaction with the non Batwa freely with minimal inferiority is observed. They fell so proud because they have homes like Bakiga and Bafumbira.
- Malaria outbreak is no longer common among the resettled Batwa families. According to Prossy Kimanizanye of Nyabaremura village, Rubuguri parish, Kirundo Sub County, Kisoro district malaria out break among the resettled Batwa in no longer common. The government provided mosquito nets to all household members so Batwa who had houses benefited and these were treated mosquito nets.



- Due to having better houses, Batwa are smart because they keep their clothes in well roofed main house that is free of smoke. Unlike in the past where clothes were kept in huts where they cooked thus smoke would turn colours of their clothes
- Food security: Settled Batwa have resorted to tilling the land BMCT gave them without migrating from place to place in search of food.
- School dropout among the resettled Batwa families has reduced: School going children among the resettled families is higher and stable than the non-resettled families because Children have a sense of belonging to a family with a good residence like that of a non Mutwa whose children they are studying with. The young were the most frequent visitors to the forest so helping them to acquire education greatly reduced the frequency of going into the forest

3.3: Results from Batwa Census

3.3.1: Average household size among the Batwa

Table showing population per settlement and average household size

District	Batwa settlement	Sex		Total	# of households	Average HH size
		Males	Females			
Kabale	Byamihanda	14	13	27	7	3.9
Kabale	Ishunga	25	18	43	10	4.3
Kabale	kashasha	13	7	20	5	4.0
Kabale	Mafuga	26	20	46	13	3.5
Kabale	Makanga	17	25	42	10	4.2
Kabale	Murambo	25	31	56	12	4.7
Kabale	Murubindi	130	129	259	54	3.9
Kabale	Mushanje	59	63	122	29	4.2
Kabale	Nyakabungo	17	21	38	11	3.5
Kabale	Rwaburindi	13	8	21	5	4.2
Kabale	Rwamahano	60	73	109	32	3.4
Sub Total		399	408	807	188	4.3
Kanungu	Bikuto	44	45	89	15	5.9
Kanungu	Buhoma	4	6	10	3	3.3
Kanungu	Byumba	68	69	137	21	6.5
Kanungu	Kanyanshande	7	5	12	3	4.0
Kanungu	Karehe	20	23	43	10	4.3
Kanungu	Kebiremu	50	32	82	24	3.4
Kanungu	Kihembe	46	45	91	24	3.8



District	Batwa settlement	Sex		Total	# of households	Average HH size
		Males	Females			
Kanungu	Kitahurira	27	43	70	10	7.0
Kanungu	Kitariro	68	71	139	21	6.6
Kanungu	Mukongoro	57	59	116	21	5.5
Kanungu	Rurangara	24	28	52	13	4.0
Sub Total		385	391	776	165	4.9
Kisoro	Bigina	8	9	17	2	8.5
Kisoro	Biizi	53	54	107	22	4.9
Kisoro	Birara	73	68	141	30	4.7
Kisoro	Buhinga	3	9	12	2	6.0
Kisoro	Busaro	12	10	22	5	4.4
Kisoro	Butobo	11	11	22	5	4.4
Kisoro	Gitebe	70	79	149	39	3.8
Kisoro	Kabahenda	16	18	34	8	4.3
Kisoro	Kabale	20	22	42	10	4.2
Kisoro	kabuga	7	8	15	2	7.5
Kisoro	Kagano	23	17	40	10	4.0
Kisoro	Kamugoyi	37	46	83	17	4.9
Kisoro	Kanyabukungu	6	16	22	3	7.3
Kisoro	Kanyamahene	6	7	13	3	4.3
Kisoro	Kashija	18	21	39	8	4.9
Kisoro	Kiburara	2	3	5	1	5.0
Kisoro	Mabungo	5	1	6	3	2.0
Kisoro	Mabuyemeru	62	56	118	24	4.9
Kisoro	Mikingo	67	69	136	38	3.6
Kisoro	Mperwa	32	19	51	11	4.6
Kisoro	Mukungu	90	90	180	35	5.1
Kisoro	Musasa	32	44	76	19	4.0
Kisoro	Nyabaremura	13	17	30	7	4.3
Kisoro	Nyamwirima	0	2	2	1	2.0
Kisoro	Nyarutembe	23	27	50	12	4.2
Kisoro	Rubare	15	17	32	5	6.4
Kisoro	Rugyeshi	24	25	49	10	4.9
Kisoro	Rukyeri	45	53	98	24	4.1
Kisoro	Rushaga	38	42	80	16	5.0



District	Batwa settlement	Sex		Total	# of households	Average HH size
		Males	Females			
Kisoro	Rutare	10	15	25	7	3.6
Kisoro	Ryabitukuru	22	28	50	12	4.2
Kisoro	Sanuriro	61	67	128	21	6.1
Sub Total		908	972	1880	413	4.6
Grand Total		1,692	1,771	3,463	766	4.5

Results from Table 2 show that the average household size for Batwa households in the BMCA is 4.5. Kanungu district has the highest average household size of 4.9. Majority of Batwa are in Kisoro district with a population of 1,880. According to the population and housing census, 2014, the average household size of people in the BMCA is 4.5.

3.3.2: Age distribution among the Batwa

Age distribution is one of the important aspects in a given population. It is indicated that most of the Batwa are below 25 years (68.8%) compared to other age groups. It also shows that there are a considerable number of young children below 5 years contributing 22.2% of the Batwa population

Table 3: % distribution of Batwa according to their age groups by district

Age group	District			Total
	Kabale	Kanungu	Kisoro	
Below 5 years	23.9	21.0	22.1	827
6 - 14	22.4	27.7	28.1	908
15 - 25	19.4	20.0	19.9	671
26 - 35	13.6	12.6	10.8	401
36 - 45	8.2	8.6	8.9	294
46 - 55	5.3	3.9	3.6	137
56 - 65	4.0	2.6	3.4	113
Above 66 years	3.3	3.6	3.2	112
Total	807	776	1880	3,463

Source: Batwa Population Census 2016

The age distribution of Batwa household members from disaggregated by district, has been summarised in Table 3. It revealed a fairly similar proportion for each age group across the three districts. For instance the children aged 0 to 5 years accounted for 23.9% in Kabale,

21.0% in Kanungu and 22.1% in Kisoro while the adults above 66 years of age were 3.3%, 3.6% and 3.2%, in the respective districts.

3.3.3: Level of education among the Batwa

The demographic results from the Batwa population census show that the more than half of the Batwa populations (52.9%) have never attained any formal education. It also shows that only 0.5% of the population have attained tertiary level of education. 53% of those who have never attained any formal education are females.

Table 4 showing percentage of Batwa level of education per district

Education level	District			Total
	Kabale	Kanungu	Kisoro	
No education	54.7	39.8	57.7	1,868
Primary	44.5	54.6	41.0	1,520
Secondary	0.4	4.8	1.0	59
Tertiary	0.4	0.8	0.4	16
Total	807	776	1880	3,463

Source: Batwa Population Census 2016

The Batwa level of education was also assessed disaggregated by district as summarized in Table 4. For instance those who have never attained any formal education accounted for 54.7% in Kabale, 39.8% in Kanungu and 57.7% in Kisoro while those who attained tertiary level of education were 0.4%, 0.8% and 0.4%, in the respective districts. The above graph also shows that of those who had never attained any formal education, 52.9%, (N=950) are females compared to males

3.3.4: Proportion of school going age Batwa learners per district

Table 5 showing proportion of school going age Batwa learners per district

District	Child in school		Total
	Yes (%)	No (%)	
Kabale	55.0	45.0	318
Kanungu	72.4	27.6	421
Kisoro	50.8	49.2	929
Total	57.1	42.9	1668

Results indicate that 57.1% of school going Batwa learners attend school and Kisoro is the most affected with 49.2% of school going children not attending school.

Reasons why 42.9% of Batwa are not attending school include the following;

- Poverty; Batwa children in schools still need some extra attention as they do not have access to basic school requirements like uniforms, shoes and other scholastics.
- Limited number of peer examples from educated Batwa who would serve as role models to encourage the young children on the importance of education.
- Batwa parents lack awareness of the importance of education and prefer using their children for domestic chores like selling labor for food, cooking, collecting water and firewood, taking care of the young ones, working in gardens and scaring away problem animals other than sending their children to school.
- Alcoholism and domestic violence in Batwa families hinders favorable conditions for their children.

3.3.5: Batwa Access to Farm Land

As farming is the key to the livelihoods for the Batwa population in the BMCA is also dependent on land, access to farmland is essential. BMCT aims at increasing the number of Batwa accessing land and believes that together with donors and government this is not an impossible task. Batwa need to access and increase acreage on which crops are planted for their households. About 44% of Batwa households in the BMCA (43.6%, N= 334) have access to farmland. The remaining 56.4% (N=432) said they do not have access to farmland of their own.

Table 6 showing Batwa access to farm land per district

District	Batwa Land ownership per district		# of Households
	Yes (%)	No (%)	
Kabale	47.3	52.7	188
Kanungu	78.2	21.8	165
Kisoro	28.1	71.9	413
Total	43.6	56.4	766

3.3.6: Acreage of Farm land Cultivated by Batwa Last Season.

The size of land under crop cultivation is a good indicator of efforts being made by Batwa to open up land for farming. On average, Batwa have between 1 acre to 10 acres depending on their stage of adaptation. Some already own cows and goats are very common. Those who have no land have borrowed or rented land.

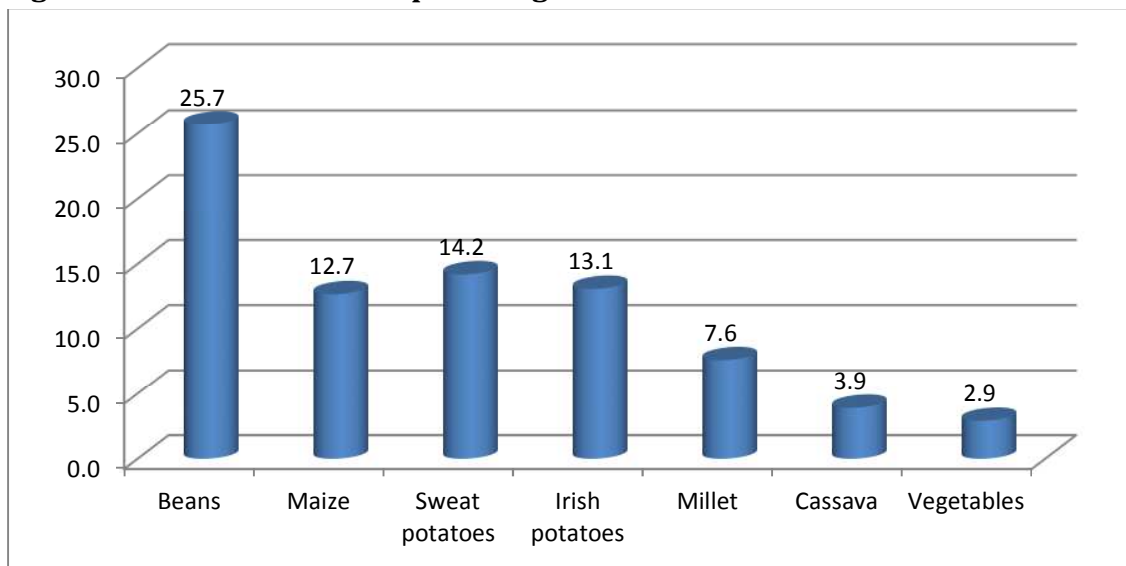
3.3.7: Most Cultivated Crops by Batwa

A wide range of crops are grown by the Batwa and most crops are similar to those grown by their Bakiga neighbor's within the region. These include beans, maize, cassava, irish potatoes, sweat potatoes, ground nuts, millet, sorghum, yams, peas, vegetables, rice and

wheat. However, most of them use intercropping of crops to overcome the problem of little land.

Most Batwa farmers planted Beans (25.7%, N=197), followed by sweat potatoes (14.2%, N=109), irish potatoes (13.1%, N=100), maize (12.7%, N=97), millet (7.6%, N=58) in that order. The average acreage planted per crop among households reflects the same order, Beans (0.3 acres), followed by sweat potatoes (0.32 acres), irish potatoes (0.34 acres), maize (0.31 acres), millet (0.3 acres)

Figure 1: Most cultivated crops among the Batwa in the BMCA



3.3.8: Crop yield

Average yield per acre varied with the type of crop planted by the farmers. Millet yield is highest, with a production of 469.7 kg per acre. This is followed by cassava, where one acre produced 282.9 kg, groundnuts at 233.8 kg per acre and beans yield was the least with 98.1 kg per acre, respectively. Table below demonstrates the amount of yield per acre per crop.

Table 7 showing crop yield per acre

Crops planted	Unit of measurement	Yield (kgs)	Acreage	Yield per acre
Beans	Kgs	5691	58	98.1
Maize	Kgs	4700	30.5	154.1
Cassava	Sacks	3055	10.8	282.9
Irish potatoes	Sacks	7516	34	221.1
Sweet potatoes	Sacks	7601	35	217.2

Crops planted	Unit of measurement	Yield (kgs)	Acreage	Yield per acre
Ground nuts	Kgs	304	1.3	233.8
Millet	Kgs	8454	18	469.7
Sorghum	Kgs	461	2.6	177.3

Scale: 1 sack: 100 kgs

3.3.9: Household Dietary Diversity

Batwa have revealed that food access and diversity as measured by Household Dietary Diversity Score (HDDS) was an average of five (5) out of the twelve food groups. An average of five food groups is an indication that the food consumption pattern offers some diversity of a balanced diet. HDDS is not only a measure of food diversity but also a proxy for household income. Increased income increases a households' ability to access food. Therefore, lower income reduces food access and results in a lower HDDS.

3.3.10: Batwa land access per settlement

Land was one of the important components during the Batwa population census conducted in April 2016. Results indicate that 56.4% of Batwa in the BMCA do not own land and this has affected their productivity. Also the most affected district in relation to land ownership is Kisoro with 71.9% of Batwa population staying as squatters on other peoples land compared to other districts like Kanungu where only 21.8% of Batwa population is landless.

Table 8: Batwa land ownership per settlement

District	Settlement	Land ownership (%)	# of households
Kabale	Byamihanda	0.0	7
Kabale	Ishunga	0.0	10
Kabale	Kashasha	40.0	5
Kabale	Mafuga	53.8	13
Kabale	Makanga	10.0	10
Kabale	Murambo	81.8	12
Kabale	Murubindi	44.4	54
Kabale	Mushanje	62.1	29
Kabale	Nyakabungo	54.5	11
Kabale	Rwaburindi	60.0	5
Kabale	Rwamahano	56.3	32



District	Settlement	Land ownership (%)	# of households
Sub Total		47.3	188
Kanungu	Bikuto	73.3	15
Kanungu	Buhoma	33.3	3
Kanungu	Byumba	66.7	21
Kanungu	Kanyasande	66.7	3
Kanungu	Karehe	100.0	10
Kanungu	Kebiremu	79.2	24
Kanungu	Kihembe	62.5	24
Kanungu	Kitahurira	90.0	10
Kanungu	Kitariro	90.5	21
Kanungu	Mukongoro	95.2	21
Kanungu	Rurangara	69.2	13
Sub Total		78.2	165
Kisoro	Bigina	50.0	2
Kisoro	Biizi	31.8	22
Kisoro	Birara	20.0	30
Kisoro	Buhinga	100.0	2
Kisoro	Busaro	40.0	5
Kisoro	Butobo	20.0	5
Kisoro	Gitebe	64.1	39
Kisoro	Kabahenda	12.5	8
Kisoro	Kabale	20.0	10
Kisoro	Kabuga	100.0	2
Kisoro	Kagano	0.0	10
Kisoro	Kamugoyi	0.0	17
Kisoro	Kanyabukungu	66.7	3
Kisoro	Kanyamahene	66.7	3
Kisoro	Kashija	50.0	8
Kisoro	Kiburara	0.0	1
Kisoro	Mabungo	33.3	3
Kisoro	Mabuyemeru	33.3	24
Kisoro	Mikingo	7.9	38
Kisoro	Mperwa	0.0	11
Kisoro	Mukungu	0.0	35
Kisoro	Musasa	0.0	19
Kisoro	Nyabaremura	14.3	7



District	Settlement	Land ownership (%)	# of households
Kisoro	Nyamwirima	0.0	1
Kisoro	Nyarutembe	0.0	12
Kisoro	Rubare	100.0	5
Kisoro	Rugyeshi	10.0	10
Kisoro	Rukyeri	16.7	24
Kisoro	Rushaga	62.0	16
Kisoro	Rutare	28.6	7
Kisoro	Ryabitukuru	58.3	12
Kisoro	Sanuriro	76.2	21
Sub Total		28.1	413
Grand Total		43.6	766

3.3.11: Batwa housing conditions

Batwa population being one of the people living in object poverty, their living conditions are also very poor. This is because according to the study, 47.0% of Batwa live in grass thatched houses and the worst affected district in the BMCA is Kisoro with 59.8% of Batwa households staying in huts.

Table 9 showing Batwa housing conditions per district

District	Type of housing per district		# of households
	Iron sheets (%)	Grass thatched (%)	
Kabale	59.6	40.4	188
Kanungu	77.6	22.4	165
Kisoro	40.2	59.8	413
Total	53.0	47.0	766

Source: Batwa Population Census 2016

Table 10 showing Batwa housing conditions per settlement

District	Batwa settlement	Type of housing		# of households
		Iron sheets	Grass thatched	
Kabale	Byamihanda	100.0	0.0	7
Kabale	Ishunga	20.0	80.0	10
Kabale	Kashasha	80.0	20.0	5
Kabale	Mafuga	38.5	61.5	13



District	Batwa settlement	Type of housing		# of households
		Iron sheets	Grass thatched	
Kabale	Makanga	100.0	0.0	10
Kabale	Murambo	100.0	0.0	12
Kabale	Murubindi	40.7	59.3	54
Kabale	Mushanje	82.8	17.2	29
Kabale	Nyakabungo	45.5	54.5	11
Kabale	Rwaburindi	60.0	40.0	5
Kabale	Rwamahano	56.3	43.8	32
Sub Total		59.6	40.4	188
Kanungu	Bikuto	93.3	6.7	15
Kanungu	Buhoma	66.7	33.3	3
Kanungu	Byumba	85.7	14.3	21
Kanungu	Kanyashande	33.3	66.7	3
Kanungu	Karehe	90.0	10.0	10
Kanungu	Kebiremu	66.7	33.3	24
Kanungu	Kihembe	50.0	50.0	24
Kanungu	Kitahurira	90.0	10.0	10
Kanungu	Kitariro	95.2	4.8	21
Kanungu	Mukongoro	90.5	9.5	21
Kanungu	Rurangara	61.5	38.5	13
Sub Total		77.6	22.4	165
Kisoro	Bigina	100.0	0.0	2
Kisoro	Biizi	31.8	68.2	22
Kisoro	Birara	96.7	3.3	30
Kisoro	Buhinga	100.0	0.0	2
Kisoro	Busaro	60.0	40.0	5
Kisoro	Butobo	100.0	0.0	5
Kisoro	Gitebe	28.2	71.8	39
Kisoro	Kabahenda	100.0	0.0	8
Kisoro	Kabale	10.0	90.0	10
Kisoro	Kabuga	100.0	0.0	2
Kisoro	Kagano	0.0	100.0	10
Kisoro	Kamugoyi	5.9	94.1	17
Kisoro	Kanyabukungu	66.7	33.3	3
Kisoro	Kanyamahene	33.3	66.7	3

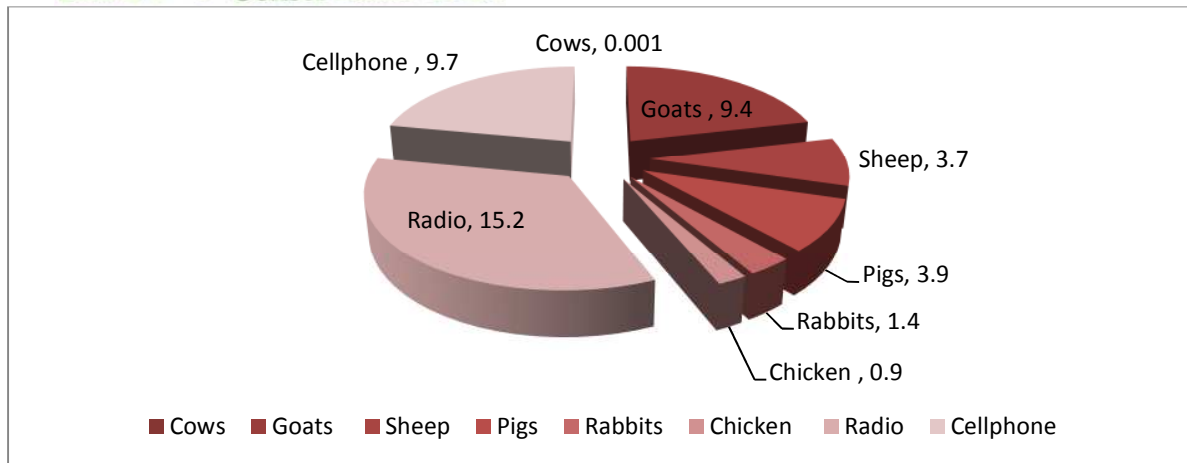


District	Batwa settlement	Type of housing		# of households
		Iron sheets	Grass thatched	
Kisoro	Kashija	87.5	12.5	8
Kisoro	Kiburara	100.0	0.0	1
Kisoro	Mabungo	100.0	0.0	3
Kisoro	Mabuyemeru	62.5	37.5	24
Kisoro	Mikingo	5.3	94.7	38
Kisoro	Mperwa	9.1	90.9	11
Kisoro	Mukungu	34.3	65.7	35
Kisoro	Musasa	0.0	100.0	19
Kisoro	Nyabaremura	57.1	42.9	7
Kisoro	Nyamwirima	0.0	100.0	1
Kisoro	Nyarutembe	16.7	83.3	12
Kisoro	Rubare	80.0	20.0	5
Kisoro	Rugyeshi	30.0	70.0	10
Kisoro	Rukyeri	0.0	100.0	24
Kisoro	Rushaga	87.0	13.0	16
Kisoro	Rutare	28.6	71.4	7
Kisoro	Ryabitukuru	25.0	75.0	12
Kisoro	Sanuriro	85.7	14.3	21
Sub Total		40.2	59.8	413
Grand Total		53.0	47.0	766

3.3.12: Assets ownership among Batwa households

Ownership and control of assets among the Batwa influences their individual participation in development processes at all levels and lack of assets makes them vulnerable to various forms of violence and lessens their decision-making power in the whole community. So Batwa assets/property ownership was assessed to ascertain their economic status.

Figure 2: Assets ownership among Batwa households



About 15% of the Batwa households have a radio from which information can be sought for their development projects. About 10% of the Batwa households at least have a mobile phone to help them ease communication. Over the years, Batwa in the BMCA with the help of BMCT have acquired goats For example about 9.4% of the Batwa households have goats, 3.9% pigs, 3.7% sheep and many other assets.

3.3.13: Relationship between Batwa owning land and the education status, volume of harvest (food security), nutritional status, and housing conditions.

Table 11 showing relationship between land ownership among the Batwa and social economic characteristics

Item Description	Batwa land ownership		Total Households
	Yes	No	
Meals taken per day			
1	8.1	20.6	116
2	56.9	69.7	491
3	35.0	9.7	159
Total	334	432	766
Housing conditions among the Batwa			
Iron sheets	79.6	32.4	406
Grass thatched	20.4	67.6	360
Total	334	432	766
Volume of harvest among Batwa (Kgs)			
Beans	5,096	595	169
Maize	4,080	620	71
Cassava	2,555	500	26

Irish potatoes	5,962	1554	76
Sweet potatoes	7,201	400	68
Millet	7,579	875	58

Scale: 1 sack: 100 kgs

Relationship between land ownership and meals taken per day among the Batwa

Results show that 8% of the Batwa households with land take at least one meal per day compared to those with no land (20.6%). About 70% of Batwa with no land (69.7%) take 2 meals per day and 9.7% of Batwa population take 3 meals per day. This shows that Batwa who have land take more meals per day compared to those with no land.

Relationship between land ownership and type of housing among the Batwa

Table 11 above shows that there is a relationship between Batwa owning land and those who live in iron roofed houses. This is because 79.6% of Batwa with land sleep in iron roofed houses compared to those who with no land and they sleep in grass thatched houses.

Relationship between Batwa land ownership and volume of harvest

Amount of harvest is an indicator of food security and the majority of Batwa with land were engaged in the growing of beans and they harvested 5,096 kgs compared to those with no land (596 kgs). Other crops that were grown and harvested include maize (4,080 kgs), Cassava (2,555 kgs), irish potatoes (5,962 kgs), sweat potatoes (7,201kgs), millet (7,579 kgs) etc. Results also show that there is a significant relationship between Batwa owning land and the harvest.

Chapter Three: Conclusions and Recommendations

4.1: Land acquisition, Agriculture Production and Consumption

The study reveals that farming is the most important economic activity for the Batwa in the BMCA and that crop production is typically conducted on small farms with traditional methods and rudimentary hand tools. The major findings and challenges identified are inadequate resources to facilitate opening of their land, the application of inefficient tools and lack of adequate seeds to plant.

Although a majority of the Batwa access farmland of their own, most accessed land is either owned or hired land for farming. As a result, an average mutwa household cultivates 1.3 acres of land. From personal observation Batwa land sometimes hired out land to non Batwa in exchange for either food or money and this can be a hindrance to food security among the Batwa in the BMCA.

There is need to bring such land into productive use by sensitizing Batwa on landuse, providing support with essential inputs such as seeds and tools so as to build their capacity for self-sufficiency. The program's approach of providing seeds, training Batwa in backyard gardening, soil and water conservation is a move in the right direction, but this must be handled with care.

The most widely cultivated crops were identified as beans, maize, cassava, irish potatoes, sweat potatoes, ground nuts, millet, sorghum, yams, peas, vegetables, rice and wheat respectively. These are also the main staples consumed by most families in the region. On the other hand, since the program should aim at increasing production and adoption of crops such as beans, groundnuts and maize as opportunities exist for more farmers to be involved and supported to increase acreage under which to plant such crops. To this end crops such as maize, beans, groundnuts and irish potatoes being promoted by the government of Uganda are also important to emphasize.

Household food access is defined as the ability to acquire sufficient quality and quantity of food to meet all the household members' nutritional requirements to achieve productive lives. The Household Dietary Diversity Score (HDDS) is used to determine whether this status has been attained or not. For a household to be considered as having achieved the standard of HDDS, it must score at least four out of 12 food groups. Therefore, a household consuming an average of four food groups indicates their diet offers some diversity. The study found that most households conformed to the average requirement of 5 out of the 12 recommended food groups.

4.2: Recommendation for Promotion of Batwa education

- Batwa partners in collaboration with Local governments should come up with byelaws and ordinances which obligate the caretakers and parents to ensure that all children of school going age stay at school.
- BMCT and partners should sensitize Batwa parents and children about the importance of sending their children to school and participating in school activities.
- There is need to strengthen the scholarship program for the Batwa children. The community fund could be used specifically to address the challenge
- The office of Community Development should strengthen the enforcement of labour laws to reduce on child labour and abuse of children's rights at the same time following up acts of alcoholism and domestic violence

Revitalise Batwa stakeholder's coordination meetings to strengthen monitoring of children enrolment, dropout in schools and other school related issues

Appendix 1: Batwa Census Questionnaire

CHAPTER A: BACKGROUND CHARACTERISTICS

District.....

Sub county.....

Parish.....

Village.....

Batwa settlement.....

CHAPTER B: HOUSEHOLD CHARACTERISTICS

How many members are in this household (Confirm): _____

S/ N	Name of household member	Sex	Age	Relation to Head	Education level	Child in school	Type of housing	Property ownership (Number of goats, pigs, cows, sheep etc)
1								
2								
3								
4								
5								
6								

Sex: 1=Male, 2=Female

Relation to Head: 1 = Head, 2 = Wife or Husband, 3 = Son or Daughter, 4 = Son or Daughter In-Law, 5 = Grandchild, 6 = Parent, 7 = Parent-In-Law, 8 = Brother or Sister, 9 = Brother or Sister-In-Law, 10 = Uncle/Aunt, 11 = Niece/Nephew, 12 = Other Relative



CHAPTER C: LAND OWNERSHIP AND HARVEST

Do you have land? -----,If yes how many acres?

Crops cultivated last season		Area of land cultivated last season	What was your harvest?	Estimated amount of money from the sale of harvested crops
Crops	Yes/No			
Beans				
Maize				
Cassava				
Irish potatoes				
Sweet potatoes				
G.nuts				
others				

CHAPTER D: HOUSEHOLD NUTRITION AND DIETARY DIVERSITY SCORE

On average how many meals do you and your families have a day? 1 2 3+ A DAY

Food variety	Have you taken/eaten these foods in your any of your meals for the last one week? [1] Yes, [2] No
1. Cereals (such as millet, sorghum, maize, wheat, rice or their products)	
2. Roots and tubers (such as cassava, sweet potatoes, Irish potatoes, and yams or their products)	
3. Nuts, legumes and pulses (such as ground nuts, beans, Simsim, soya beans and peas)	
4. Vegetables (Local vegetable or modern)	
5. Fruits (mangoes, oranges, Pawpaw, banana etc)	
6. Milk or milk products such as yoghurt	
7. Meat/Poultry including wild animals and birds	
8. Fish/Sea food	
9. Eggs	
10. Sugar (Crystal sugar, sugar cane, honey and sweetened beverages etc..)	
11. Oil and fats (Cooking Oil/Butter/Ghee	