

Report of the Baseline Study of AfPEC

<i>The report is written by:</i>	Daniel Esau, YLEC
Holger Jacobsen, SwB	Holger Jacobsen, SwB
Poul Kroijer, SwB	Hanne Lund Jorgensen, SwB
<i>Interviews were done by:</i>	Poul Kroijer, SwB
Josephine Fogt Andersen, Master student	Hazra Okem , SwB Uganda
Emilie Ellesoe, Master student	Mathilde Willemoes, Master Student

The study was conducted in late October and early November 2024 by four representatives from SwB, Seniors Without Borders, three thesis students from Aarhus University and a representative from YLEC, Youth Leading Environmental Change.

The study was mainly conducted as interviews with 111 members of the 4 Farmer Field Learning Groups, FFLGs, and Village Savings Learning Groups, VSLAs, in Bududa, Bufumbo, Buginyania and Sipi on Mt Elgon , which are part of the AfPEC project. The groups have in total 120 members. A few members of 3 new groups which were formed in 2023 were interviewed as well.

The interviews were based on a form that is attached as Appendix 1. The purpose of the interviews was to uncover important aspects of the living conditions and major challenges for the farmers in the four local communities as a basis for further study in the areas.

This report is based on the facts and the challenges expressed by the interviewed.

The reports contains a number of recommandations. These are solely recommendations of the baseline team based on the interviews and observations by the team.(Highlighted in Italic)

Persons interviewed

Area	Males	Females	Total
Sipi	9	16	25
Buginyania	18	10	28
Bufumbo	10	18	28
Bududa	13	17	30

Family size. Number per family

Area	Children	Adults	Others	Average
Sipi	3,2	1,9	1,7	6,8
Buginyania	4,2	1,7	0,8	6,7
Bufumbo	7,1	1,9	1,9	10,9
Bududa	4,0	1,8	1,0	6,8

Note: Others are parents, sisters, brothers, children of relatives

The size of the families is nearly the same in the communities except for Bufumbo. The size of the fertility rate cannot be interpreted as the families were only asked about children living at home. However, it should be noted that the number of children living at home varies between 2 and 20.

The study shows that farmers are struggling with a wide range of challenges, which can be divided into three main areas:

1. Economy

2. Farming, production

3. Climate, weather, environment

However, it must be pointed out that these areas are interconnected and thus affect each other

1. Economy

a. Income

There are several sources of income. Income from the gardens: cash crops, products from the trees (fruit, timber, firewood) work for others in the community and work in other areas of Uganda.

As can be seen from the average number of adults residing in the area the number of persons working in other areas of Uganda is very limited. That the average is not 2,0 is also due to a few divorces and that a limited number has passed away.

The number of persons working for others in the community is close to zero. This means, that the possibility of increasing the income of the families is: 1. selling products from their gardens, mainly coffee, bananas, 2. products from the trees planted and 3. from the introduction of new cash crops.

It is recommend that the farmers in the future should sell collectively and at a higher level of the value chain.

A severe challenge is that the farmers to a very high degree depends on the international market. This is the case for coffee and to some degree for bananas, export to Kenya.

A more selfcentered production and marketing should be given priority.

b. Expenses

The livelihood can be improved by reducing the expenses of the families. In the short run it does not seem to be that easy. The best options are reducing the family size through a lower fertility rate and joint purchase of farm inputs.

The largest expense is generally school fees. Other significant areas are health expenses, expenses for hired labour, especially in connection with the coffee harvest, purchase of manure, NPK fertilizer, pesticides. Many mention general household expenses, especially

food and clothing. Expenses for telecommunications are a much neglected expense, which for a couple easily can be between 700,000 and 1 million UgX on an annual basis.

All families, except for one, in the AfPEC project are members of a VSLA group (Village Savings and Loans associations) and a FFLG (Farmer Field Learning Group). In total 7 groups. 3 of them are new, formed in 2023, and were formed in connection to the Frelsen Coffee projet in the area.

Those in Bufumbo and Buginyania who were asked if their FLLGs were still functioning could inform, that they meet regularly, visit each other, give each other advices and help each other, e.g. the coffee harvest. Nobody mentioned that they used their collaboration in relation to advocacy to the local authorities. This could be, for example, on lack of access to water, power and the very bad infrastructure.

Savings per family in 2023

Amount	Sipi	Buginyania	Bufumbo	Bududa
0-499.000	4	14	18	21
500.000-999.999	3	6	4	6
1mio- 1.999.999	5	2		
2.mio-2.999.999	5			
3 mio-3.999.999	3			
4 mio and above	1			1

Loans per family in 2023

Amount	Sipi	Buginyania	Bufumbo	Bududa
0-499.000	4	8	9	14
500.000-999.999	7	3	2	5
1mio- 1.999.999	3	2		1
2.mio-2.999.999	1			
3 mio-3.999.999	2			
4 mio and above	1			

The information, especially regarding savings, is not entirely reliable. Too many have not been asked. This also applies for loans. The numbers about loans are lower, as several have not borrowed money from the VSLA in 2023

Generally the farmers in the VSLAs do not use the savings in the the groups for joint investments.

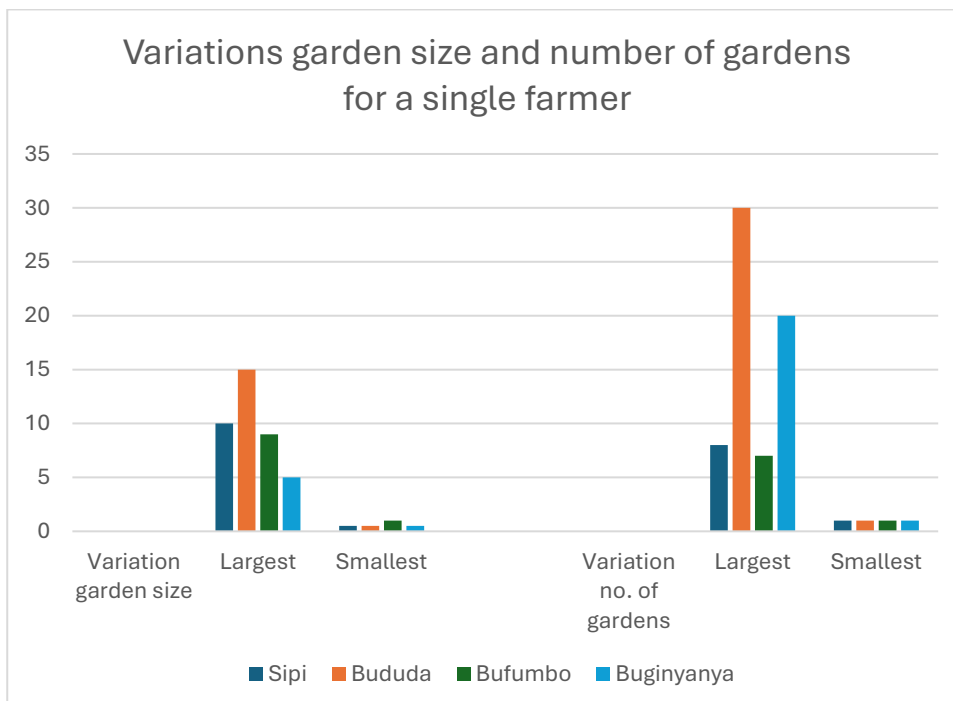
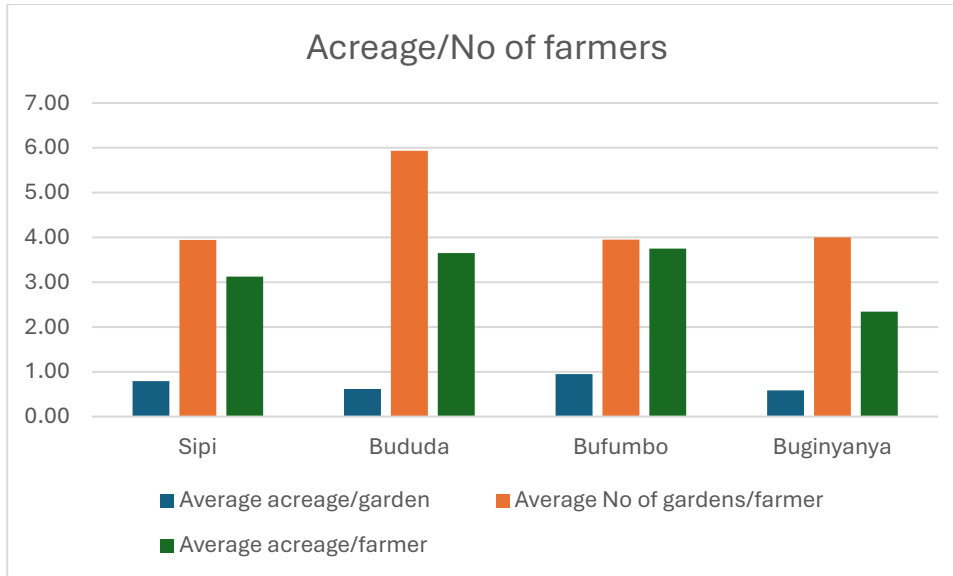
We recommend this a focus area in the future

There is nearly a 100 % coincidence between families who are members of a VSLA and those who are members of FFLGs.

2.Farming, Production

- a. Fragmentation, land ownership The gardens of the farmers are very small and highly fragmented. Below are illustrations of the sizes of the farmers' gardens distributed across the four geographical areas and illustrations of the number of gardens per farmer.

All farmers interviewed, except one, own their own gardens



It should be mentioned that we were not able to visit all the gardens in 2 weeks. Therefore, we chose to visit the garden closest to where the interviewed lives. This can of course cause a bias in the study. We have GPS coordinates for all the places visited.

Due to the significant fragmentation of the individual farmer's gardens, we would recommend that a detailed study of the fragmentation should be made. However, only for a few selected farmers in each area.

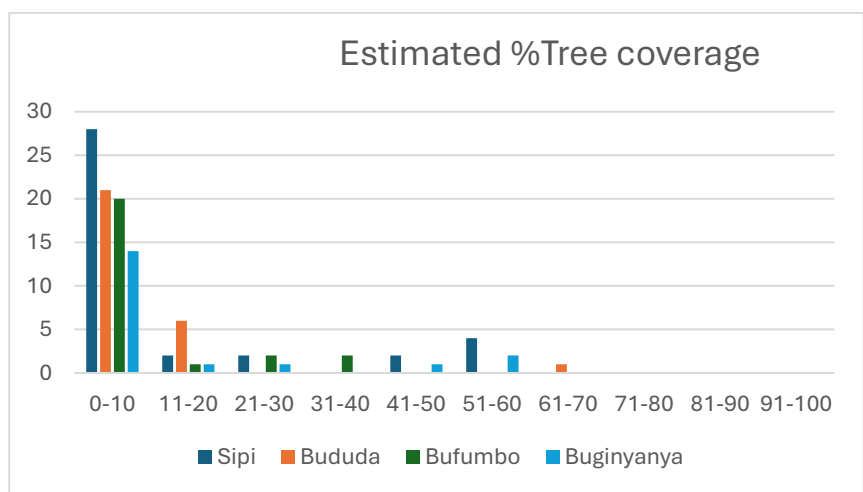
The small plots of land and the long distances to the individual gardens cannot avoid affecting productivity and the income negatively. Future inheritance divisions will only make the challenges greater

A land reform can be recommended but is unrealistic as the area is characterized by perennial crops and trees

b. Agroforestry and crops

Trees

Based on estimates of the percentage of tree cover, we must state that it would be an understatement to describe the area as characterized by what is understood as agroforestry. In most of the gardens the tree cover is below 10 %. However, there are trees in all gardens.



The trees can be distributed in fruit trees, trees which are used for timber, building materials and firewood and in trees which together with the bananas give shade to the coffee bushes. Some of the trees can fix nitrogen from the air. Some of the trees are important for income to the farmers, especially those which can be used for timber and building materials.

We recommend that farmers are encouraged to grow nitrogen fixing crops such as beans, peas, and others as ground cover.

If you want to get a detailed knowledge of the species we advise you to study the respective questionnaires which can be found on Google Drev.

The most common trees and their main use:

Shade: Albizia, Cordia africana, Ficus and Grevillea robusta

Fruit: Avocado, Jackfruit, Mango

Timber and Firewood: Eucalyptus, Calliandra calothyrsus, Grevillea cobusta

Cash crops

Far the most important cash crop is Arabica Coffee. The second most important is Bananas and Matoke. Other crops play a minimal role for the farmers' income.

Income from Coffee. Percentage distribution

Mio of Ugx	Sipi	Bufumbo	Bududa	Buginyania
Below one mio	25	46	63	7
One to three mio	32	36	37	46
Three to five mio	11	11	0	21
Five to ten mio	7	0	0	18
Ten to fifteen mio	0	7	0	4
Unknown	25	0	0	4

Most farmers sell their coffee harvest as berries, especially in Bufumbo, Bududa and Buginyania. In Sipi there are several pulping machines and a larger plant financed by the World Bank. However, this lacks a connection to the electricity grid. In Sipi there are several farmers who sell their harvest as dried beans.

Most of the farmers sell to middlemen, a few sell to a cooperative. It is hoped, mentioned only in Buginyania, that Frellsen Kaffe in the future will buy coffee directly and bypass the middlemen. This will give the families a higher income.

If the farmers can be brought to sell their harvest as dried beans, their income will increase significantly. The price per kg of cherries is about 2,500 UgX per Kg, the price for dried beans is 11,000-13,000 UgX per Kg. SwB will seek to raise funds to purchase up to 21 pulping machines.

The farmers are very dependent of the two most important cash crops. A strategy should be developed to reduce this dependence. Not only by bringing coffee, for example, further up the value chain, but also by introducing alternative cash crops. Cocoa and Vanilla have been mentioned.

Arabica coffee thrives best at temperatures between 18 and 24°C. In the future, production in the lower-lying areas, Bufumbo and Bududa, may be threatened by rising temperatures. A switch to Robusta could be necessary.

Crops for consumption by the families

The registration of food crops has not been consistent and uniform in the interviewing groups and in the four communities. The main fault was the the interviewers didn't always registrate the crops in the same way. Some with a cross, others with a rating 1-5 of importances, others with a H for Have.

A total of 35 different food crops are grown in the four communities visited. Bananas are the main food crop in all communities and is valued as the most important food crop – and as a cash crop as well as a crop for animal fodder.

In Sipi bananas are rated as the most important crop for consumption followed by mais, beans, Irish potato, and yams.

In Bududa bananas and cassava are the highest rated crops for consumption. Yams and coco yams combined are rated third followed by mais.

In Bufumbo less than half of the farmers were asked to rate their food crops from 5 to 1. However, those who were asked rated bananas highest followed by cassava, mais, beans, and yams.

In Buginyanay bananas are rated most important followed by mais, cassava, yams/coco yams, and beans.

In general farmers in the Bufumbo area grow a greater variety of crops as more than half of the farmers grow more than nine different crops. Vanilla is recorded grown by four farmers in the area.

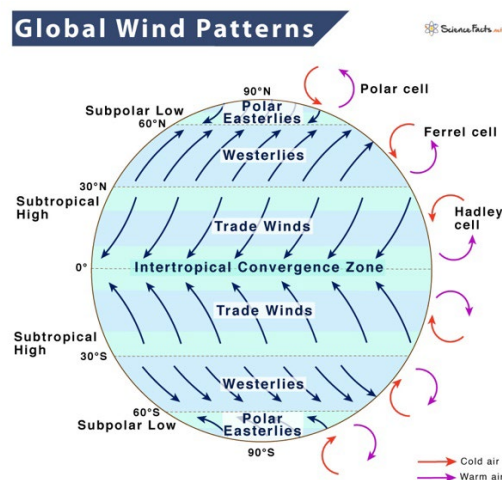
The variation of food crops seems lowest in Sipi and Buginyanya. This may be attributed to the altitude of the area and farmers' greater cash incomes in those areas.

Major challenges mentioned by the farmers – see also the section on climate, weather and environment

- Cash crops are mainly sold through middlemen
- Only a few pulping machines
- Lack of shelters where the coffee beans can be dried. The coffee harvest falls during the two rainy seasons
- Lack of money to purchase manure (cow dung), NPK fertilizer and pesticides
- Plant diseases, especially in the coffee
- Lack of water for irrigation during dry seasons and for , the coffee – pulping and fermentation
- Erosion
- Very bad infrastructure, no access to “modern” means of transportation

3.Climate, Weather, Environment

Since Mt Elgon is located just north of the Equator, the area is climatically completely dependent on the Intertropical Convergence Zone (ITC) and the Convection Precipitation. Or to put it another way. The two annual passages of the ITC determine the two annual rainy seasons, while the convergence rainfall is a result of the local evaporation and heating. Mt Elgon is located in a kind of open and closed system



Of course, the terrain and soil also play a role. This is a young soil that is relatively fertile but is negatively affected by monoculture – coffee and bananas. The terrain with steep slopes combined with the heavy rainfall causes significant erosion, which in the worst cases, especially in Bududa, causes severe landslides.

The global warming has changed the global wind system. The rain seasons are more unpredictable, the dry seasons have become longer, the temperature has increased, which has led to more rainfall with higher intensity.

This means for the farmers that it has become more difficult to plan planting and harvesting times, that the flowering of the coffee bushes has deteriorated, that berries and crops are damaged due to the more intense intensity and that runoff of water has increased: The same has the erosion. This also affects the low-lying areas north of Mt Elgon. The longer dry spells create water shortages and lower production.

From 1960 to 2010, the temperature has increased by 0.2° Celsius per decade. It is predicted that the temperature will increase by up to 3° Celsius by 2050

Adaptation

The farmers have tried to adapt to the changing weather conditions in several ways:

- They have planted more trees, but as can be seen from the above, far from enough. In addition to shade, reducing evaporation, absorbing nitrogen from the air, they can reduce erosion
- They have made terraces to a limited extent, and to a much greater extent dug channels to direct rainwater away. They have planted elephant grass and are increasingly using mulching, not only to retain soil moisture but also to reduce erosion. They also ensure that there is a denser ground cover during the rainy season. However, plants which can fix nitrogen from the air only constitute a very small part of the ground cover – if any at all.

The majority of the farmers suffer from water shortages during the dry spells and have to walk long distances to the streams to collect water. It is surprising how few farmers harvest water from, for example, their roofs. The annual rainfall is between 1,500 and 2,000 millimeters. This corresponds to the same number of liters per m².

Macroeconomically there are also some adaptation options that have only been implemented to a lesser extent.

The recommendations below are of special importance to WG 3 area of the research:

Improving income possibilities, better marketing and bringing the farmers up the value chain

- *They should sell their products bypassing the middlemen*
- *They must sell their products collectively and not individually*
- *They must bring their products, especially coffee, further up the value chain. Initially by selling as dried beans*
- *They must reduce their dependence on coffee as the dominant cash crop*
- *Their production must be diversified*
- *They must place more emphasis on growing crops that improve their nutrition*
- *More emphasis must be placed on crops that are more resistant to climate change*
- *Their savings must be increased, and they must focus more on collective investments*

Recommendations on Living Labs

The next step will be to establish a Living Lab in each of the four areas. A challenge will be to find farmers who are willing to make a piece of land, e.g. 1 acre, available for this.

The decision should be based on a collective discussion in each of the areas. In addition, we would recommend that one person, who has professional insight and who can be a link between the project and the living lab in question, should be appointed in cooperation with the members of the FFLG groups.

The work of the four persons should be paid.

It should also be considered to recruit extra personnel to the rather small YLEC group which has the main responsibility for the development of the Living Lab.