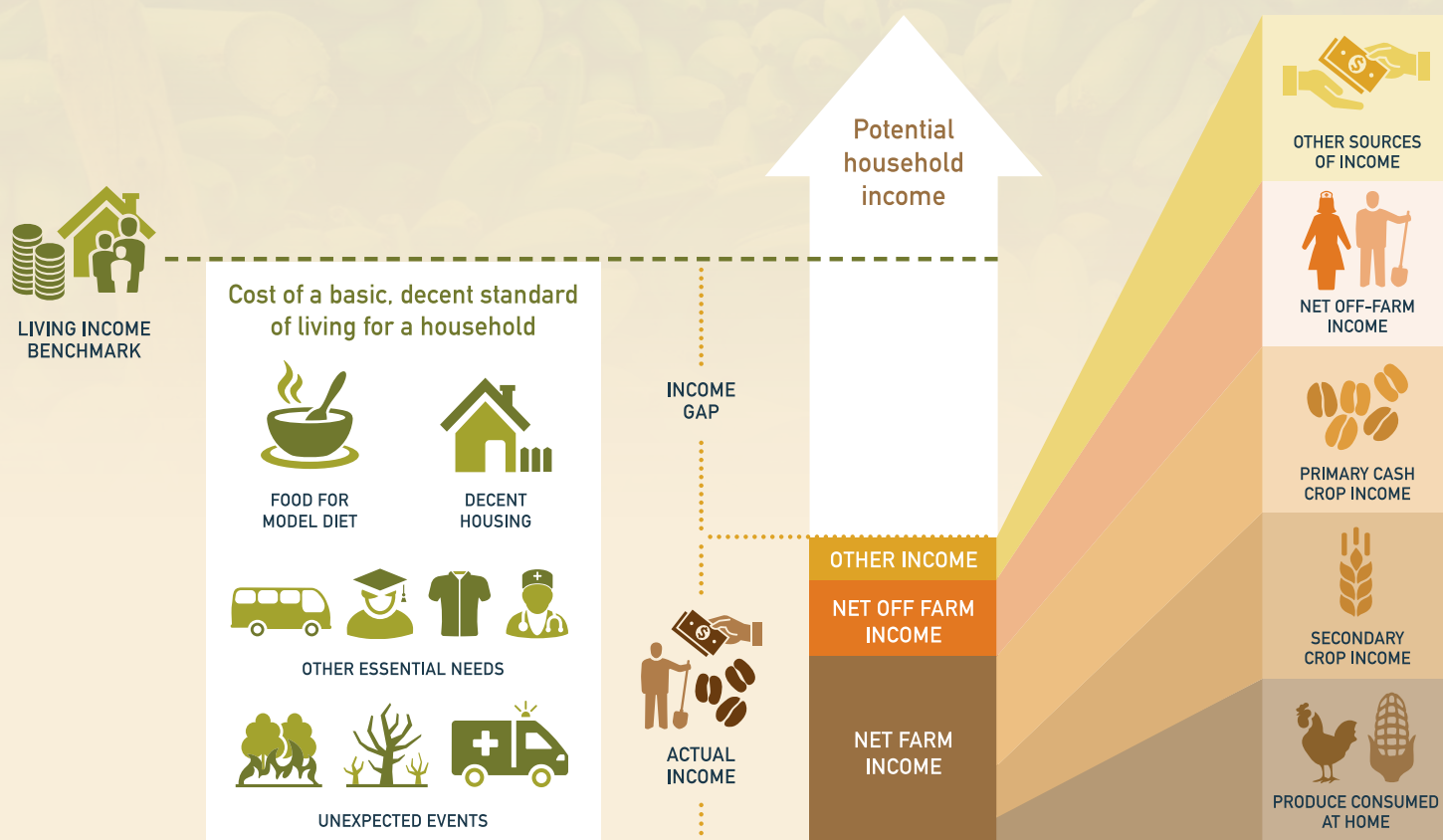


## ACTION FOR LIVELIHOOD ENHANCEMENT IN NORTHERN UGANDA (ALENU)

# LIVING INCOME STUDY REPORT







**ACTION FOR LIVELIHOOD ENHANCEMENT  
IN NORTHERN UGANDA (ALENU)**

# **LIVING INCOME STUDY** REPORT

Submitted by

Dr. Hannington Jawoko Odongo  
E-mail: [odongojawoko@gmail.com](mailto:odongojawoko@gmail.com)  
Tel: +256 772 589 449

Dr. Alfred Lakwo  
E-mail: [alfred.lakwo@gmail.com](mailto:alfred.lakwo@gmail.com)  
Tel: +256 772 437175

**AUGUST 22, 2021**

## ACKNOWLEDGEMENT

Under the Development Initiative for Northern Uganda (DINU), a Government of Uganda programme supported by the European Union (EU) and supervised by the Office of the Prime Minister, Caritas Switzerland in partnership with Advance Afrika, Agency for Accelerated Regional Development, and Gulu Women Economic Development and Globalization are implementing the Action for Livelihood Enhancement in Northern Uganda (ALENU) in six districts of the West Nile and Acholi sub-regions namely, Zombo, Nebbi, Pakwach, Amuru, Omoro and Agago. This study was therefore conducted as part of the project baseline study.

The completion of the study was through the invaluable efforts of many stakeholders. The study team is grateful to the Consortium Coordinator (Cuthbert Aongat), MEL Officer (Dophline Akera), the Technical Advisors (Robert Bakyalire, Daphene Egwar, and Willian Oloya) and especially the Project Officers (Godwin Okaba, Jimmy Ocaya, Collins Maditcan, Denis Komakech, Kidega Alfred Okumu, Oyuru Bonny, James Odur Ogwang, Eunice Acaa, Amito Maureen, and Ocan Ronald Reagan) for supporting the field work data collection process.

However, the Consultant takes the full responsibility for the views and errors expressed herein.

**Odongo Hannington Jawoko and Alfred Lakwo**

**August 22, 2021**

# TABLE OF CONTENTS

<b>ACKNOWLEDGEMENT</b>	<b>iv</b>
<b>ACRONYMS</b>	<b>3</b>
<b>EXECUTIVE SUMMARY</b>	<b>4</b>
<b>1 INTRODUCTION</b>	<b>7</b>
<b>2 OBJECTIVE OF THE STUDY</b>	<b>8</b>
<b>3 METHODOLOGY</b>	<b>9</b>
3.1 Living Income Study Approach	9
3.2 Constructing Net Household Income and Living Income Explained	9
3.3 Study sites, respondents, and sampling methods	11
3.4 Study phases and Data Collection	11
3.5 Ethical and quality control considerations	13
3.6 COVID 19 control measures	13
3.7 Limitations of the study	13
<b>4 RESULTS</b>	<b>15</b>
4.1 Beneficiary characteristics	15
4.2 The Net Household Income	16
4.3 Household Living Income	18
4.4 Living Income Gap	26
4.5 ALENU added value to Smallholder Farmer Living Income	27
<b>5 KEY OBSERVATIONS</b>	<b>29</b>
<b>REFERENCES</b>	<b>31</b>
<b>ANNEXES</b>	<b>32</b>
Annex 1: Terms of Reference	32
Annex 2a: Net household income assessment tool	35
Annex 2b: Key Informant Interview Guide for District Local Government	47
Annex 3: Study Workplan	49
Annex 4a: List of farmer groups involved in the study	51
Annex 4b: List of persons interviewed	51
Annex 5: Annual Income Analysis Sheet	52
Annex 6a: Food ration (West Nile region)	53
Annex 6b: Food ration (Acholi sub-region)	54
Annex 7: Annual housing costs	55
Annex 8a: Annual education cost (West Nile sub-region)	56
Annex 8b: Annual Education cost (Acholi sub-region)	58
Annex 9: Annual Medical costs	60
Annex 10: Annual transport and communication costs	61
Annex 11: Annual Furniture and appliances costs	63
Annex 12: Recreation and culture	64

Annex 13: ALENU value added enterprise analysis	65
Annex 14a: Regional living income gap	70
Annex 14b: Commodity-base living income gap	71
Annex 15: Sample production and marketing cost	72

### List of Tables

Table 1: Selected beneficiary characteristics	15
Table 2: Average regional net household income	17
Table 3: Average commodity-based net household income	18
Table 4: Average annual living income by region	20
Table 5: Average annual living income by commodities	20
Table 6: Dietary intake and food cost	22
Table 7: Cost of Housing	23
Table 8: Cost of education	24
Table 9: Medical cost	24
Table 10: Cost of transport	25
Table 11: Cost of communication	25
Table 12: Cost of clothing and footwear	25
Table 13: Cost of furniture and appliances	26
Table 14: Cost of recreation and culture	26

### List of Figures

Figure 1: Farm Household Economic Model	10
Figure 2: Study phases	12
Figure 3: Components of Living Income	19
Figure 4: Food consumption frequency	21
Figure 5: Diet diversity status (%)	21
Figure 6: Net household income versus Living income and International Poverty line	27
Figure 7: ALENU contribution to closing the Living income gap	28

## ACRONYMS

AEO	Agro - Ecology Officer
AFARD	Agency For Accelerated Regional Development
ALENU	Action for Livelihood Enhancement in Northern Uganda
BDS	Business Development Services
DINU	Development Initiative for Northern Uganda
DLG	District Local Government
FG	Farmer Group
FPO	Focal Point Officer
HNO	Health and Nutrition Officer
ILO	International Labour Organization
KAP	Knowledge, Attitude and Practice
LLG	Lower Local Government
MC	Marketing Committee
NGO	Non-Government Organization
NHI	Net Household Income
SOP	Standard Operating Procedure
UBOS	Uganda Bureau of Statistics
UGX	Uganda Shillings
US\$	United States Dollars
VSLA	Village Savings and Loan Association
WHO	World Health Organization

## EXECUTIVE SUMMARY

### About the project

Under the Development Initiative for Northern Uganda (DINU), a Government of Uganda programme supported by the European Union (EU) and supervised by the Office of the Prime Minister, Caritas Switzerland has received a grant to implement the Action for Livelihood Enhancement in Northern Uganda (ALENU). ALENU is implemented by a consortium consisting of four NGOs (Caritas Switzerland, Advance Afrika, Agency for Accelerated Regional Development, and Gulu Women Economic Development and Globalization) in six districts of the West Nile and Acholi sub-regions namely, Zombo, Nebbi, Pakwach, Amuru, Omoro and Agago. ALENU focuses on improving livelihoods through increased and diversified food production, enhanced market opportunities and better maternal and child nutrition. Its overall objective is, “to consolidate stability in Northern Uganda, eradicate poverty and under-nutrition and strengthen the foundations for sustainable and inclusive socio-economic development.” And the specific objective is, “to increase food security, improve maternal and child nutrition, and enhance household incomes through support to diversified food production and commercial agriculture and through improving household resilience (notably to climate change) and women empowerment.

### Why the living income study

This living income study was conducted as part of the ALENU project baseline survey. Its main objective was to estimate a representative living income for the project area to act as a project benchmark of the prevailing pre-project income as well as a monitoring and evaluation guide of the project contribution in closing the income gap necessary for decent living in northern Uganda.

### The methodology used

In order to achieve the main objective of the study: 1) the net household incomes (NHI) was computed using the ISEAL Alliance's Farm Economic Model; 2) the living income cost needed for a basic but decent living standard for a reference size family for the project area was estimated using the well-established Anker methodology; and 3) ALENU income contribution to closing the living income gap was estimated. Data for all these analyses were collected using documentary reviews, focus group discussions (FGDs) with 16 farmer groups (341 members attended), key informant interviews (KIIs) with local government officials, and market surveys with various market

actors engaged in the business and services of food trade, housing, medical, education, etc. Adherence to research ethics, CACH code of conduct and ministry of health COVID-19 SOP were observed.

### The findings

To compute the Net Household Income (NHI), the study found out that:

- (i) Crop diversification was highly practiced to cushion the ever-rising weather variability, land fragmentation and to tap into the emerging markets for all produce. However, there are distinct crop enterprises to the two sub regions such as coffee, vegetables and matooke and in Acholi sub region pigeon peas, sunflower and millet.
- (ii) Apart from coffee and cotton that were traditional cash crops, now all the crops are cash crops. Unfortunately, the lack of agribusiness skills makes them to farm:
  - a) negative return commodities like sesame in Acholi sub region and rice and maize in West Nile sub region; and
  - b) other extremely low return commodities such as maize, sorghum, sunflower, and sesame (less than UGX 200,000 per annum) to the benefits of private sector actors.

- (iii) The smallholder farmers keep few livestock especially poultry (average 6 birds), goats (average of 4 units) and pigs (average 2 units) without both improved livestock husbandry and agribusiness mindset.
- (iv) The average annual NHI of ALENU smallholder farmers' is UGX 13.7 million (UGX 11.9M West Nile and UGX 12M Acholi sub regions). Cash and food crop enterprises account for only 47% of this net income as compared to 12% from livestock and 41% from other sources. The NHI however, vary for the different households producing the different ALENU promoted commodities (least for onion, soy bean and beans).

The study found out that average annual living income needed to afford a decent standard of living for ALENU beneficiaries is UGX 21.2 million (or monthly UGX 1.8 million). This translates into a daily value of UGX 8,288 per household member (\$ 2.3 per person). Of this, 46% is spent on food followed by education with 17%, transport

and communication (10%), and health 9%. However, the living income is higher in Acholi sub region (UGX225 million also where groundnuts, soybeans, apiary and beans are farmers) as compared to West Nile sub region (UGX 19,9 million; where Irish potato, onion and poultry are farmed).

From the above annual NHI and annual living income, the annual living income gap was estimated at UGX 7,426,507. This gap at a project level represents 35% to the living income but varied by commodity from 75% gap in onion to 45% in poultry producing households. Indebtedness was noted as the main strategy of closing the gap.

Analysis of the added value of ALENU to closing the living income gap (through it VSLA and market-oriented agro-commodity production and marketing) found out that ALENU project intervention alone will not enable the different commodity producing households exit the extreme poverty line or achieve the living income.

Key issues	Suggested solutions
<ul style="list-style-type: none"> <li>Land is a key production constraint in especially West Nile region where on average a household has 2 acres (as compared to more than 4 acres in Acholi sub region). Seasonally, all these farm lands are intercropped to ensure diversified harvest for the family. Without fallowing, land fertility is on the decline. In some area especially in the uplands of Erussi and Zombo, many families now rent land every season.</li> </ul>	<ul style="list-style-type: none"> <li>Explore and promote high impact crop enterprises (such as onions, Irish potato, and ground nuts) jointly with non-land demanding enterprises (such as poultry and apiary) for better household income diversification needed for poverty reduction.</li> <li>Although land conflict was not yet reported, such rising land fragmentation is a recipe for family and community land conflict. Family land demarcation and registration should be promoted.</li> </ul>
<ul style="list-style-type: none"> <li>There is a very high crop diversification that beneficiary households are engaged in (average 7 in Acholi and 5 in West Nile) both for food and income generation. Although this practice is a risk mitigation strategy, its reliance on traditional knowledge and technologies albeit without agribusiness skills use further reduces its net effects in increasing farm productivity.</li> </ul>	<ul style="list-style-type: none"> <li>Promote Farm Optimization planning anchored on farming as a business with clear enterprise gross margin analysis so that farmers select high paying enterprises instead of investing in many low and sometimes negative return enterprises. This should be accompanied by good links to markets.</li> <li>Agricultural Extension Officers should not focus their support on only ALENU promoted commodities. They should broaden their support to help farmers adopt the good agricultural practices being promoted across board.</li> <li>Value addition should also be promoted as part of the entrepreneurial activity to increase in the net return on major market commodities households produce</li> </ul>

<ul style="list-style-type: none"> <li>In spite of the high consumption of green vegetables, particularly for West Nile, beneficiaries have not diversified their vegetable production to include the local traditional vegetables. Visible in the homes are the ALENU distributed improved vegetables (kale, egg plants, okra). Yet these vegetables cannot be propagated for local seed sourcing.</li> </ul>	<ul style="list-style-type: none"> <li>VHTs and HNOs should encourage beneficiaries to diversify their production and consumption of vegetables to include the local vegetable varieties whose seeds can be saved locally for seasonal production. In addition, since beneficiaries are selling the excess harvest of the project supported vegetables, they should be encouraged to save part of the funds for buying own seeds.</li> </ul>
<ul style="list-style-type: none"> <li>Marketing costs constitutes about 7-10% of the entire production and marketing cost (see annex 15) because beneficiaries sell their commodities in rural markets and trading centers incurring them high transaction costs on transport (boda boda), market dues, and incidentals (e.g., feeding).</li> <li>Marketing Committees (MCs) are supporting their groups market their produce. They are also using the mobile phones to gain access to market information. However, their focus was only on ALENU promoted commodities excluding many other commodities that they are producing for the market. The MCs are also not engaging each other in different markets to explore market opportunities. Finally, some of the MCs could not gain access to Farm Gain App.</li> </ul>	<ul style="list-style-type: none"> <li>Collective marketing should be promoted by the MCs for all the different commodities their group members are producing so that access to premium markets can enhance household incomes.</li> <li>A database of all MC members in the different regions and districts be compiled and shared out so that the primary market focus is widened beyond the local and FARM Gain App markets.</li> <li>The FARM Gain App needs to be activated for all new ad old groups and MC members should be guided to use the tool for a wider market survey.</li> <li>Engagement with the various district local government is needed to discuss the high cost (and double taxation in some cases) that smallholder farmers face.</li> </ul>
<ul style="list-style-type: none"> <li>There is a significant use of woodfuel for cooking. On average a household weekly use 2 bundles (approx. 12-15Kgs). This is a huge pressure on the natural vegetation given that expansion of acreage too means deforestation.</li> </ul>	<ul style="list-style-type: none"> <li>There is need to build synergies with existing programmes in the various districts to promote low-cost energy saving stoves on top of the promotion of afforestation that ALENU is already promoting through the distribution of tree seedlings.</li> </ul>
<ul style="list-style-type: none"> <li>VSLA has been widely accepted by all the group members and borrowing for business start-ups is on the rise. However, analysis of many of the alternative IGAs (brewing local potent gin ("enguli"), selling "muziri" (silver fish), etc.) all proved non profitable (and in some cases with negative returns). This poses a huge risk to loan repayment, members credibility and asset depletion.</li> </ul>	<ul style="list-style-type: none"> <li>The IGA-SPM training needs to discuss not only enterprise selection skills. It should also explore business cost-benefit analysis so that loans are borrowed and invested in profitable ventures.</li> </ul>
<ul style="list-style-type: none"> <li>While ensuring families eat nutritious foods is cardinal to health, the study found that there is a huge expense on purchase of foods (over 45% of cost of living). Interestingly, most of the costs are on "food waste" e.g., a family of 7 people buying 2Kgs of meat per meal (over and above the WHO recommended 700 grams). Equally, there are "male expenses" such as 10-month leisure costs on watching football on private DSTV.</li> </ul>	<ul style="list-style-type: none"> <li>The HNO should introduce the beneficiaries to meals planning and budgeting so that food expenses are reasonable.</li> <li>Financial literacy training should emphasize the aspect of family budgeting to ensure that expenses are managed within a family budget as opposed to the general 'deficit budgets' families experience year-in and year-out (forcing them to borrow loans for unnecessary consumptions).</li> </ul>

# 1 INTRODUCTION

Under the Development Initiative for Northern Uganda (DINU), a Government of Uganda programme supported by the European Union (EU) and supervised by the Office of the Prime Minister, Caritas Switzerland has received a grant to implement the Action for Livelihood Enhancement in Northern Uganda (ALENU). ALENU is implemented by a consortium consisting of four NGOs (Caritas Switzerland, Advance Afrika, Agency for Accelerated Regional Development, and Gulu Women Economic Development and Globalization).

Under the Development Initiative for Northern Uganda (DINU), a Government of Uganda programme supported by the European Union (EU) and supervised by Office of the Prime Minister, Caritas Switzerland has received a grant to implement the Action for Livelihood Enhancement in Northern Uganda (ALENU). ALENU is implemented by a consortium consisting of four NGOs (Caritas Switzerland, Advance Afrika, Agency for Accelerated Regional Development, and Gulu Women Economic Development and Globalization) in six districts of the West Nile and Acholi sub-regions namely, Agago (in Wol and Lokole sub counties); Amuru (Amuru and Lamogi sub counties); Omoro (Odek and Lakwana sub counties); Nebbi (Erussi and Atego sub counties); Pakwach (Pakwach and Panyimur sub counties); and Zombo (Kango and Athuma sub counties). ALENU focuses on improving livelihoods through increased and diversified food production, enhanced market opportunities and better maternal and child nutrition.

Its overall objective is, “to consolidate stability in Northern Uganda, eradicate poverty and under-nutrition and strengthen the foundations for sustainable and inclusive socio-economic development.” And the specific objective is, “to increase food security, improve maternal and child nutrition, and enhance household incomes through support to diversified food production and commercial agriculture and through improving household resilience (notably to climate change) and women empowerment. The three main result areas are: Result 1.1: Increased production of diversified food; Result 1.2: Increased market accessibility; and Result 1.3: Improved nutritional status. The key target 35,932 direct beneficiaries of the project include: 35,000 subsistence farmers and their households, 276 local government officials, 400 Village Health Team members, 58 Cultural and religious leaders/Faith-Based Medical Bureau; 24 Senior Teachers; 144 private sector and public sector actors, and 30 local co-applicants.

## 2 OBJECTIVE OF THE STUDY

One of the start-up activities of ALENU project implementation was to conduct a baseline study by a multi-disciplinary team (health, agriculture, economy) that will integrate a baseline survey, a living income study and a knowledge, attitude and practice (KAP) survey. The living income study was to gather the net annual income required to afford a decent standard of living for all members of a beneficiary households like food, water, housing, education, healthcare, transport, clothing, and other essential needs including provision for unexpected events. The calculated decent cost of living would then be used as a living income benchmark. More importantly, the finding was to help beneficiary households model their family development plans, adapt to safe nutrition planning and budgeting. Unfortunately, the baseline study that was conducted covered the baseline survey and KAP survey on Nutrition, WASH and Family Planning.

To close this information gap, this assignment aimed to conduct a living income study following the well-established Anker methodology. The main objective was to estimate a representative living income for the project area to act as a project benchmark of the prevailing pre-project income as well as a monitoring and evaluation guide of the project contribution in closing the income gap necessary for decent living in northern Uganda.

In order to achieve this objective, the study:

1. Estimated the costs of basic but decent living standard for a reference size family for the project area. These costs include: food, housing and utilities, and other essential needs including education, health care, water, clothing, transport and communication, recreation and emergencies.
2. Assessed the prevailing incomes for project area. This includes household net incomes from on-farm (food and cash crops, livestock, fisheries), off-farm (wages, petty trade, etc.), and other sources (remittance, social protection grants, etc.) using the ISEAL Alliance's Farm Economic Model.<sup>1</sup> By so doing, it become evident to model the income gap from whether or not income meets the cost of decent standards of living; and
3. Estimated the income contribution of ALENU project supported enterprises to close the income gap required for meeting the decent living income.

---

1. Kristin Komives, Sophie Grunze, Eberhard Krain, Don Seville, Stephanie Daniels, and Noura Hanna (April 30, 2015) *Introduction to the Living Income Concept in the Context of Agricultural Commodities*.

## 3 METHODOLOGY

### 3.1 Living Income Study Approach

The study measured decent but basic standard of living based on the standard ISEAL Alliance's "Anker Methodology."<sup>2</sup> By this approach, living income as defined by ISEAL Alliance is "the net income of a household earned/generated sufficient to enable all members of the household to afford a decent standard of living." Thus, a living income benchmark is the income required per household per year. The Anker methodology anchors the construction of a living income to include: (a) a relatively low-cost nutritious food that have sufficient calories – 3,000 kcal/day for farming households as is recommended by WHO standard; (b) Housing costs; (c) Other essential expenses especially for education, health, public transport, clothing, furniture, communication, and recreation and culture; and (d) emergencies.

### 3.2 Constructing Net Household Income and Living Income Explained

The ISEAL Alliance has developed a clear approach for the construction of Living Income using the "Anker Methodology" and the Farm Economic Model that rely on both household survey and participatory methods. For this study, given that the baseline survey and the project commodities' promoted market assessment provided a quantitative outlook of the prevailing situation, participatory methods using the Focus Group Discussion (FGD), Key Informant Interviews (KIs), documentary reviews, and market surveys were used to participatorily collect the data and construct a household net income and living income typical for the smallholder farmer households. This is explained below:

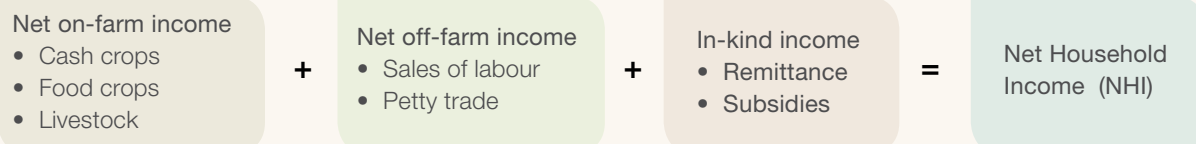
#### **Constructing a typical rural smallholder farmer net household income involved:**

- a. The identification of the "common sources of income" typical to the project areas. The FGDs and

KIs identified these sources to include on-farm (cash crops, livestock, food crops grown for own consumption, fisheries), off-farm (sale of labour, microenterprises) and in-kind incomes (remittances, social protection grant for the elderly, etc.).

- b. The net incomes earned by each source was computed using the members' local knowledge and experience using gross margin analysis. Attention was paid on seasonality of income sources as well as to variability in market prices. For on-farm sources of income, computations was based on the seasons of production since yields and prices do vary between seasons. This helped to reduce seasonal biases but also reflect an average production and income data.
- c. The sum of all these incomes were computed to show the average net income a typical rural smallholder farmer earned in a year. These sums, as will be shown under results, were aggregated for the project regions, commodities and overall status of the project.

2. Anker, R. and Anker, M (2017) *Living Wage around the world: Manual for Measurement*. Edward Edgar Publishing Ltd..

**Figure 1: Farm Household Economic Model**

### Constructing a living income

The Anker methodology specifies that the critical data for constructing a living income is derived from a living wage concept that includes the four critical components indicated below:

- a) A relatively low-cost nutritious food that have sufficient calories – 3,000 kcal/day WHO standard for agricultural work – drawn from the local rural food basket and preference but with acceptable quantities of proteins (min. 10%), fats (15-30%), carbohydrates (50-75%), minerals and vitamins to help ensure that workers and their families have enough to eat and be healthy. To collect this data the following were done:
  - The FGD identified the decent food basket of a typical smallholder farmer. This food preference list was clustered into the various food categories and weighed against the national dietary intake values of the region to ascertain the per capita dietary energy consumption level.
  - Data on food prices were collected from different locations with consideration for both lean and peak periods. Finally, the median food prices were computed and aggregated for each food category using the Anker excel program that allow for variation in food intake for adults and children as well as price variations.
  - An addition of 16% to total cost of model diet (allowing 10% for variety and flexibility; 5% for wastage and spoilage; and 1% salt, spices and condiments) was provided.
- b) Housing costs is based on decent house a decent house that according to Anker and Anker (2017) include the following: separate rooms for children and adults, that is, 3 separate rooms for an average HH (depending on HH size), each room with at least 9m<sup>2</sup> a safe roof, so that no water can penetrate, air ventilation, a cemented floor, concrete walls (wood can be mixed with cement or clay), a separate cooking area, outside porcelain or improved latrine, access to water and electricity, and maintenance/repair costs. This cost was derived for a locally accepted decent housing unit from:
  - Monthly rental equivalent value or the value of a housing unit over its life span;
  - Monthly utility costs that covered the cost for: (i) water e.g., monthly user fee for shared water points or fee per volume used if the water is bought; (ii) lighting e.g. paraffin or the average monthly charge for national grid power; (iii) cooking fuel e.g. charcoal, firewood, or any other fuel used for cooking; and (iv) routine repairs and maintenance for a housing unit such as thatching cost, door and window replacements due to termite effects and or painting if necessary.
- c) Other essential expenses included the cost of:
  - Children's education (pre-covid-19 pandemic) at nursery, primary, secondary levels that included the mandatory payments to schools such as PTA fund, coaching fees, founding body fees, district examination fee, feeding/boardings fee, scholastic materials including books, pens, geometrical sets, and uniforms, shoes, sweaters, etc.;
  - Medication for especially common illnesses as identified by the nearest health facility and the national health expenditure study;
  - Transport by public means especially to access basic public services;
  - Clothing and foot ware required to be presentable in the community e.g., the cost of a pair of cloth, shoe, blanket, and mosquito net;
  - Furniture and appliances that are common to the typical household;
  - Communication especially using the mobile phone and radio; and
  - Recreation and culture especially for obligatory festivals, funerals, church tithe, alms, etc.<sup>3</sup>

3. If these costs are not feasible to collect, a ration of non-food to food expenses can be used (see Anker 2013, page 13)

- d) Emergencies was provided for by 10% of total cost of food, housing and other essentials.

Once these costs were computed, it became clear of what a typical household need in a year to afford a decent standard of living (i.e., living income per household per year). This living income benchmark is then compared against the household net income and the international poverty lines (US\$ 1.90) to demonstrate the extent to which the project supported smallholder farmers are living in dignity.

In order to show the contribution of ALENU to closing the living income gap, a gross margin analysis was also conducted in order to estimate the additional income the targeted beneficiary households will earn through the production and marketing of the niche market commodities they selected and are being supported on (with inputs, skills training, value addition, and collective marketing).

### 3.3 Study sites, respondents, and sampling methods

As per the terms of reference, the study was conducted in the six districts of Agago, Amuru, Omoro, Nebbi, Pakwach and Zombo. The respondents included the targeted farmer group members, sub county officials, district officials, and market actors including food vendors, kiosks, shops, construction firms, input suppliers and produce buyers.

Given the fact that the project is located within similar agro-ecological zones: north-western savanna grassland (Zombo, part of Nebbi highland, and Agago) and Paraa savannah (Amuru, Pakwach, and lower part of Nebbi), study therefore focused on the 09 project promoted commodities (apiary, Irish potato, poultry, beans, soy beans, onions, tomato, and groundnuts). To meet this commodity-based orientation:

- Respondents from local governments, producer groups, input suppliers, construction firms, and other organizations were drawn using a purposive sampling approach.
- Respondents from among the farmer groups were drawn from a random sample derived from power calculation of both participating sub counties. The sample size will be determined using a single proportion of study population sampling method as below:

$$n = \frac{Z^2 pq}{e^2} \quad \text{where}$$

**n** = The sample size of the project smallholder population

**Z<sup>2</sup>** = The abscission of the normal curve that cuts off an area q at the tails (1-q equals the desired confidence level of 95%)

**E** = The desired level of precision of 95%

**P** = The estimated proportion of rural northern Uganda (38.2% according to the 2020 UBOS Statistical Abstract)

**Q** = 1-p.

Substituting in the above formula (p = 38.2%, Z = 1.96, q = 0.75, and e = 0.05)

n = 440 (= 18 farmer groups each of 25 members)

Worth noting here is that given the orientation to commodity-based focus of the assessment and building on the baseline study that was conducted, we:

- Estimated the desired sample size (or number of respondents) per commodity;
- Converted the sample size into the number of farmer group equivalent;
- Mapped out the project commodities by location and groups in order to identify the number of beneficiaries to be reached; and
- Targeted the agreed upon number of farmer groups in the various districts as the primary respondents. In so doing, we engaged the targeted farmer groups for in-depth group discussions to identify their common foods, farming enterprise analysis, markets and market actors, and social services.

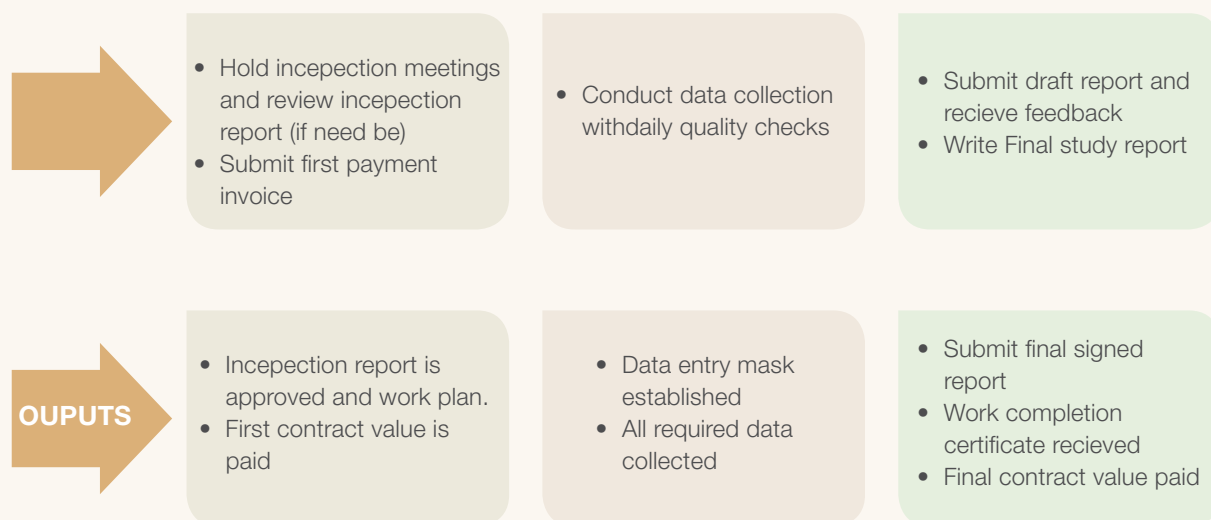
### 3.4 Study phases and Data Collection

To elicit comprehensive data for the study, a 3-phased approach of data collection and analysis was used as below:

#### 3.3.1 Inception

This was a critical phase of the assignment. It involved a thorough conceptualization of the project and the assignment through:

- Holding an entry meeting with AFARD project management team to receive in-depth briefing of the task, roles management, and communication requirements as well as to secure access to all the required documents necessary for understanding the project context - project proposal, baseline report, annual report, and commodity-based training manuals and reports.
- Literature review of the project documents in order to develop the study protocol with detailed data collection tools and location mapping to guide field operations – meetings, logistics, and supervision.
- Holding inception report review meeting with the project team (CACH MEL Officer and AFARD management team) that provided feedback on the tools, agreed on field outreach, and assigned field support team.

**Figure 2: Study phases**

### 3.3.2 Data Collection

Data collection was conducted between July – August 2021 with routine data quality checks using the following methods:

- Document review:** The team reviewed the project documents (proposal, annual reports, baseline study, training manuals and reports, and market and value chain/regional market assessment) together with Uganda nutrition profile, Uganda Demographic Health Survey 2016 together with Malaria Indicator survey 2018-19, Uganda National Household Survey 2019/20, Uganda Housing and Population Census 2014 and 2020 projections, Uganda National Development Plan III, District and Sub county Development plans and the different sector policies and guidelines, among others.

#### Districts by commodities selected for the study

	AGAGO	AMURU	NEBBI	OMORO	PAKWACH	ZOMBO	TOTAL
Apiary	5	0	6	7	0	2	20
Beans	2	0	0	0	0	0	2
Groundnuts	10	25	5	15	17	0	72
Irish potatoes	0	0	4	0	0	23	27
Onions	1	1	9	0	0	6	17
Poultry	9	0	7	12	4	5	37
Soy beans	5	0	0	18	1	0	24
Tomatoes	0	0	1	0	0	0	1
<b>Total</b>	<b>32</b>	<b>26</b>	<b>32</b>	<b>52</b>	<b>22</b>	<b>36</b>	<b>200</b>

*Note: At the time of study, the tomato group had shifted to onion production in 2021*

- **Focus Group Discussions:** 16 farmer group meetings were held (see annex 4a). Overall, 341 people (60% females) attended. These discussions were conducted using structured guides (see annex 2a) that lasted 5-6 hours per group. These in-depth discussions explored the different decent living income and cost components - common income streams as well as costs for food, water, clothing, housing, education, health, transportation, and social and emergency events. During these meetings, local diets were identified (what they are, what quantities are cooked per family) and the result used to construct a low-cost model diet. Finally, these meetings mapped out which markets and service providers the households mainly use to access goods and services.
- **Key Informant Interviews:** This was conducted using interview guides (see annex 2b) with 16 respondents (6% females) from local government departments (production, health, education, water, engineering, etc. – see annex 4b) and market actors (weekly food markets, food vendors, kiosks, shops, construction firms, input suppliers, produce buyers, boda boda riders, tailors, and private health service providers, etc.).
- **Market surveys:** Once, the farmers groups mapped out their service providers, the study team conducted a market survey using structured questionnaire to elicit the prevailing market prices of farm inputs and produce, wages as well as the costs of food, water, clothing, housing, education, health, transportation, and other social obligations. Data was collected from open daily and weekly markets, general merchandise shops, local masons, food vendors, medical clinics and drug shops, school teachers, etc.
- Adherence to sector standards for performance measurement especially of employment, agriculture and enterprise development. The guidelines from Ministry of health, education, agriculture, animal industry and fisheries, Uganda Bureau of Statistics were used.
- Joint review of study instruments: The Consultant worked jointly with the project management team to ensure data consistency with the study requirements.
- Pre-testing of study instruments: This was done prior to the main survey fieldwork to ensure reliability, acceptability, feasibility, question flow, and the duration of the interview. This exercise helped in modifying the survey tool.
- Social mobilization for data collection: To increase the response rate, the project staff mobilized the respondents for a timely administration of the study tools.
- Introduction letter: Apart from communicating about the study to local government officials, AFARD management also availed the field team with a letter of introduction to facilitate acceptance by the various support agencies.
- Consent and confidentiality: The study team also sought consent from respondents to participate in the study and provided statement of confidentiality to the respondents. In addition, the team also signed the code of conduct that bonded them to enforce issues related to child protection, privacy, corruption, and sexual exploitation, among other things.

### 3.3.3 Reporting and data management

This last phase involved the collation, cleaning and analysis of data from the different data sources in order to write a draft report that is shared with Caritas Switzerland and consortium members for review. The feedback will then be used to prepare and submit the final report.

## 3.5 Ethical and quality control considerations

To ensure that appropriate professional practices were adhered to, a quality control system was put in place through:

## 3.6 COVID 19 control measures

To address the issue of safety of the consulting team and that of the study respondents, appropriate actions to promote and enable standard COVID-19 prevention measures in terms of adherence to ministry of health standard operating practices (SOP) such as social distancing, wearing face masks, hand washing and temperature monitoring were enforced during the study. Focus group discussions were held in open spaces. The team also used the project vehicle for which movement permit was provided by the ministry of works.

## 3.7 Limitations of the study

The study process experienced the following limitations:

- COVID-19 pandemic had a ripple effect on the study. First, the need for adherence to ministry of health standard operating procedure (SOP) guidelines led to change in the planned travel plan of the study team. While it was planned that the 03 study team members would travel together, restrictions of only 03 people (plus the driver) led to the nutrition expert visiting the field after the initial field team had conducted all farmer group meetings. Second, adherence to SOP compelled the study team to buy disposable masks thereby increasing the cost for the consultant. Third, the lockdown led to many local governments adopting working in shifts as instructed by ministry of public service. This made it rather difficult to meet with all the planned district officials. In some cases, like

in Amuru district the officers were met in Gulu city. Fourth, the lockdown restrictions of boda boda transport led to a hike in transport cost while the closure of a number of markets caused drastic fall in food prices. Finally, as a result of the lockdown, children were at home and cost of education varied greatly both within the same sub counties and between districts. Efforts were however made to discuss with teachers within the study population school coverage to harmonize education costs.

- The fieldwork period coincided with the onset of the second and reliable rain season in all the project areas. Many farmer group members were therefore involved in their garden works thereby extending the daily study period.

## 4 RESULTS

### 4.1 Beneficiary characteristics

**Table 1: Selected beneficiary characteristics**

Selected indicators	West Nile	Acholi	Total
Average household size (people)	6.2	7.3	6.7
Proportion of HH members with no form of education	10%	12%	22%
Proportion of HH heads who are married	44%	34%	78%
Proportion of HH using paraffin as main source of energy for lighting	43%	25%	68%
Proportion of HH with members that practice open defecation	2%	41%	20%
Proportion of HH with a cell phone	24%	14%	38%
Average land size (acres)	2.2	4.3	3.2
Proportion of HH dependent on agriculture for income	43%	46%	89%
Average acreage of diversified foods	1.8	3.0	2.4
Proportion of HH producing both crops and livestock	56%	62%	59%
Proportion of HH producing livestock	52%	61%	56%
Proportion of HH adding value to their products	9%	20%	14%
Proportion of HH selling their commodities through collective marketing	4%	6%	5%
Proportion of HHs with an income generating activity	29%	19%	25%
Average annual household incomes (UGX)	1,471,560	2,024,376	1,733,832
Proportion of HH with acceptable Food Consumption Score (FCS)	27%	20%	24%
Proportion of HH receiving external transfers/support	6%	1%	7%
Proportion of HH living on less than \$1.90 PPP	56%	69%	62%

Source: ALENU Baseline report, 2020

Table 1 above shows excerpt from the October 2020 baseline study report. It reveals that:

- The composition of the family units/households: 78% are married, 11% are widowed (93% women), and only 3% are single. On average, the number of people in the household was seven (3 were females, 3 were children under the age of 17 and 1 elderly person above 50 years of age).
- The education level was that 41% had incomplete primary (P1-P2) school education, followed by No education (22%), and Complete Primary Seven (P7) (12%). As only 12% of participants completed ordinary education (S4).
- Majority of the respondents' houses were temporary units with only 2 rooms. Yet, over 42% of the people did not have separate shelters for their livestock. In these households, 68.2% used paraffin-wick lamps as their main source of lighting as compared to only 15% who used solar lights.
- Internet access: 37% had a cell phone and 4% had internet access.

- Under water, sanitation, and hygiene (WASH) it found 53% with functional hand-washing facilities next to the toilet although 20% of the households' practices open defecation.
- The income and expenditure analysis got 88% of the households' dependent on agriculture as their main source of income. The mean household income was UGX 237,745 per month. But only 01 household member contributes to the total income of a household.

## 4.2 The Net Household Income

To ascertain how much income the beneficiary smallholder farmers earn per annum, the study constructed the Net Household Income (NHI) of the farmers in West Nile and Acholi sub regions using the ISEAL Alliance's Farm Economic Model. Using a participatory method, the study team constructed this model by (Focus) Group Discussions with randomly selected 18 farmer group members in the six project districts and the farmers primarily identified all their common sources of income. In so doing, it is evident from table 2 below that:

- (v) The smallholder farmers in both sub regions, to cushion the ever-rising weather variability, land fragmentation and to tap into the emerging markets for all produce (i.e., strategies for risk mitigation and cash flow smoothening), seasonally practice crop diversification through intercropping as a norm (e.g., cassava/millet/beans with maize). However, there are distinct crop enterprises to the two sub regions such as coffee, vegetables and matooke in West Nile and in Acholi sub region pigeon peas, sun flower and millet. Both sub regions however farm cotton, sesame, beans, rice, groundnuts, cassava, sorghum, sweet potato and maize.
- (vi) Apart from coffee and cotton that were traditional cash crops, now all the crops are cash crops. Unfortunately, the harvests of all the other food crops are mainly sold off for income. Farmers only keep what they perceive as just enough for their household consumption yet in annually they are forced to buy the same foodstuff from the market. As the table also reveals, this practice has not been able to guide farmers decision to select high income enterprises. Their lack of agribusiness skills can be seen in their decisions to farm negative return commodities like sesame in Acholi sub region and rice and maize in West Nile sub region. Further, ignorance has been exploited by current market development programmes that promote extremely low return commodities such as maize, sorghum, sunflower, and sesame (less than UGX 200,000 per annum) to the benefits of private sector actors who sell value added outputs.
- (vii) The smallholder farmers keep few livestock especially poultry (average 6 birds), goats (average of 4 units) and pigs (average 2 units). These livestock are reared on a subsistence basis without any treatment and supplementary feeding and a few are sold intermittently especially to smoothen seasonal cash flows. Due to the high death rates of chicken, many families hardly pay attention to rearing them. It was startling to find that many beneficiaries hardly knew the "economics of chicken rearing." Asked "between two persons who have 02 goats and 02 chicken who is richer at the end of the year, if they all looked after their livestock well?" the chorus was the owner of goats. However, after the gross margin analysis, it became glaringly clear that chicken rearing is far beneficial than goat farming. At the end, many beneficiaries exclaimed, "had we known before, we would have cared for our birds that was provided by the project. Many also vowed to use their agro-input savings to buy at least 02 additional birds and they committed to follow what their agro-ecology champions demands of them."
- (viii) The average annual net income of ALENU smallholder farmers' as is shown by table 2 below is UGX 13.7 million (UGX 11.9M West Nile and UGX 12M Acholi sub regions). Cash and food crop enterprises account for only 47% of this net income as compared to 12% from livestock and 41% from other sources. Worth pointing out are: a) few of the beneficiaries benefit from social protection programmes such as cash transfer for the elderly (SAGE programme). Only 05 of all the 341 farmer group members involved in the study reported that they received such support; b) that a number of the alternative sources of income are detrimental to the environment e.g., sale of firewood, thatching grass, and charcoal; and c) the annual total income is way above the baseline values (see table 1 above).
- (ix) However, as table 3 shows, none of the beneficiary communities in which ALENU is promoting different agribusiness commodities earn an annual net income equal to their regional value. Households engaged in onion, soy bean and beans production earn the least net income as compared to poultry, groundnuts, apiary, and Irish potato.

Table 2: Average regional net household income

Enterprises	West Nile	Acholi	Total	% share
<b>Cash and food crops</b>				
Coffee	592,867		592,867	4%
Cotton	352,050	437,000	394,525	3%
Sesame	434,250	(57,000)	188,625	1%
Beans	735,750	408,200	571,975	4%
Soy beans	597,500	1,357,100	977,300	7%
Pigeon peas		372,711	372,711	3%
Rice	(112,000)	15,000	(48,500)	0%
G/nuts	335,300	689,171	512,236	4%
Vegetables	300,250		300,250	2%
Sunflower		104,133	104,133	1%
Cassava	219,125	1,102,350	660,738	5%
Sorghum	44,500	279,580	162,040	1%
Millet		570,440	570,440	4%
Sweet potato	556,700	151,700	354,200	3%
Matooke	594,500		594,500	4%
Maize	(13,000)	199,057	93,029	1%
<b>Sub total</b>	<b>4,637,792</b>	<b>5,629,443</b>	<b>6,401,068</b>	<b>47%</b>
<b>Livestock</b>				
Chicken	692,571	627,333	659,952	5%
Goats	648,500	379,625	514,063	4%
Piggery	600,000	482,500	541,250	4%
<b>Sub total</b>	<b>1,941,071</b>	<b>1,489,458</b>	<b>1,715,265</b>	<b>12%</b>
<b>Other income sources</b>				
Brewing local alcohol	(161,600)	(262,132)	(211,866)	-2%
Fuelwood sale	480,000	360,000	420,000	3%
Thatching grass sale	1,008,000		1,008,000	7%
Fishing/fish mngering	1,195,000	1,336,667	1,265,833	9%
Petty trade	1,395,000	159,250	777,125	6%
Sale of labor	247,500	300,000	273,750	2%
Charcoal burning	1,200,000	2,999,200	2,099,600	15%
<b>Sub total</b>	<b>5,363,900</b>	<b>4,892,985</b>	<b>5,632,442</b>	<b>41%</b>
<b>Grand total</b>	<b>11,942,763</b>	<b>12,011,886</b>	<b>13,748,775</b>	<b>100%</b>
<b>Monthly income</b>	<b>995,230</b>	<b>1,000,990</b>	<b>1,145,731</b>	

**Table 3: Average net household income by ALENU promoted commodities**

Income sources	ALENU Promoted Commodities						
	Irish	Onion	Poultry	G-nut	Soy beans	Apiary	Beans
<b>Cash and food crops</b>							
Coffee	592,867						
Cotton			394,525				394,525
Sesame			188,625				
Beans	571,975	571,975		571,975	571,975	571,975	571,975
Soy beans			977,300	977,300	977,300	977,300	977,300
Pigeon peas				372,711	372,711	372,711	372,711
Rice		- 48,500	- 48,500	- 48,500			
G/nuts	512,236	512,236	512,236	512,236	512,236	512,236	512,236
Vegetables	300,250	300,250	300,250				
Sunflower				104,133	104,133	104,133	104,133
Cassava	660,738	660,738	660,738	660,738	660,738	660,738	660,738
Sorghum			162,040	162,040	162,040	162,040	162,040
Millet				570,440	570,440	570,440	570,440
Sweet potato			354,200	354,200	354,200	354,200	354,200
Matooke	594,500						
Maize	93,029	93,029	93,029	93,029	93,029	93,029	93,029
<b>Sub total</b>	<b>3,325,593</b>	<b>2,089,727</b>	<b>3,594,442</b>	<b>4,330,301</b>	<b>4,378,801</b>	<b>4,378,801</b>	<b>4,773,326</b>
<b>Livestock</b>							
Chicken	659,952	659,952	659,952	659,952	659,952	659,952	659,952
Goats	514,063	514,063	514,063	514,063	514,063	514,063	514,063
Piggery	541,250	541,250	541,250	541,250	541,250	541,250	541,250
<b>Sub total</b>	<b>1,715,265</b>	<b>1,715,265</b>	<b>1,715,265</b>	<b>1,715,265</b>	<b>1,715,265</b>	<b>1,715,265</b>	<b>1,715,265</b>
<b>Other income sources</b>							
Brewing local alcohol	- 211,866	- 211,866	- 211,866	- 211,866	- 211,866	- 211,866	- 211,866
Fuelwood sale	420,000	420,000	420,000	420,000	420,000	420,000	420,000
Thatching grass sale	1,008,000		1,008,000	1,008,000			
Fishing/fish mngering			1,265,833	1,265,833			
Petty trade	777,125	777,125	777,125	777,125	777,125	777,125	777,125
Sale of labor	273,750	273,750	273,750	273,750	273,750	273,750	273,750
Charcoal burning	2,099,600		2,099,600			2,099,600	
<b>Sub total</b>	<b>4,366,609</b>	<b>1,259,009</b>	<b>5,632,442</b>	<b>3,532,842</b>	<b>1,259,009</b>	<b>3,358,609</b>	<b>1,259,009</b>
<b>Grand total</b>	<b>9,407,467</b>	<b>5,064,001</b>	<b>10,942,149</b>	<b>9,578,408</b>	<b>7,353,075</b>	<b>9,452,675</b>	<b>7,747,600</b>
<b>Monthly income</b>	<b>783,956</b>	<b>422,000</b>	<b>911,846</b>	<b>798,201</b>	<b>612,756</b>	<b>787,723</b>	<b>645,633</b>

### 4.3 Household Living Income

While the NHI indicated that the project beneficiary smallholder farmers annually earn a net income (UGX 13.7 million), the study explored the extent to which this NHI can afford ALENU beneficiary households a decent standard of living using the ISEAL Alliance's "Anker Methodology." The study team adapted this

methodology to fit into the rural settings of the northern Uganda because all the living wage studies that were conducted in Kenya, Malawi and South Africa focused on formally employed estate workers on fresh flower, tea, and wine grape farms respectively. These employees earn salaries, bonus, and social benefits unlike the project beneficiaries who entirely rely on their farm produce and other sources of incomes.<sup>4</sup>

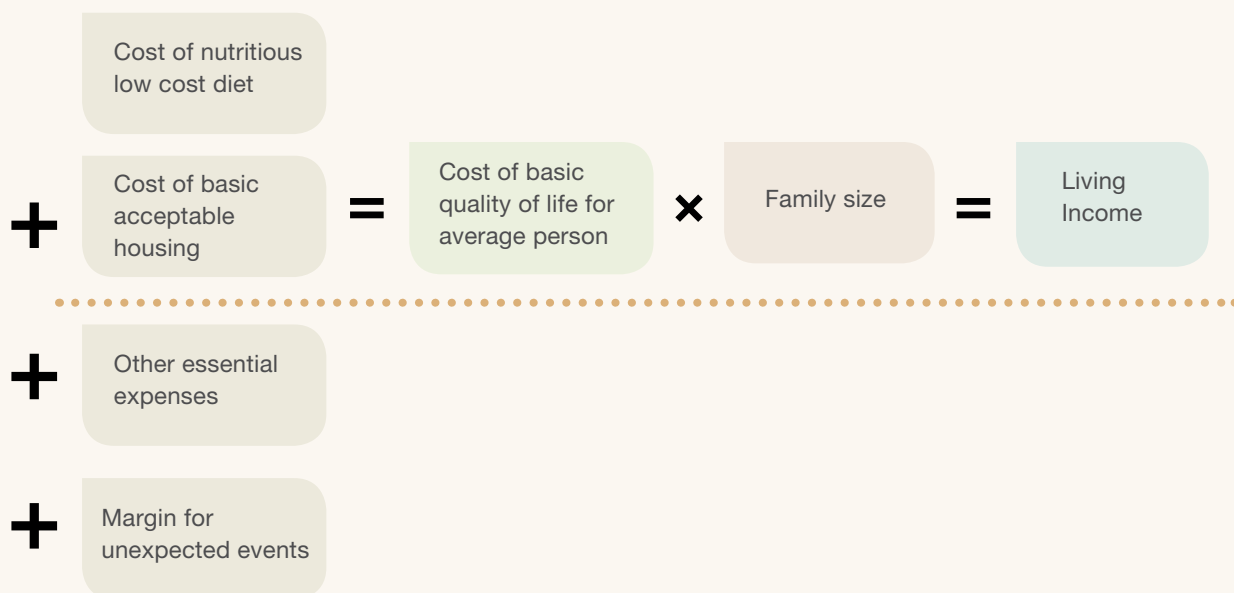
4. For details see Anker, R. and Anker, M (May 2013) Report: Living Wage for rural South Africa with Focus on Wine Grape Growing in Western Cape Province; (January 2014) Report: Living Wage for rural Malawi with Focus on Tea Growing area of Southern Malawi; and (March 2014) Report: Living Wage for Kenya with Focus on Fresh flower Farm area of Lake Naivasha.

That ISEAL Alliance defines living income as the net income of a household earned/generated under condition of decent work, sufficient to enable all members of the household to afford a decent standard of living, it is therefore income required per household per year for a decent living. Figure 9 below presents its basis of computation that includes: (a) A relatively low-

cost nutritious food that have sufficient calories – 3,000 kcal/day for farming households as is recommended by WHO standard; (b) Housing costs; (c) Other essential expenses especially for education, health, public transport, clothing, furniture, communication, and recreation and culture; and (d) emergencies.

**Figure 3: Components of Living Income**

The living income benchmark is (cash) amount sufficient to afford a decent standard of living for the income earner and her/his family.



Using the above guidelines, the study team conducted the field study starting with (Focus) Group Discussions with members of sampled farmer groups. These discussions identified the primary food basket and the farmers' markets. It also provided key information on market prices for items procured both within and outside their villages. Women were critical in providing estimates of food quantities and food sources that are consumed by their households. Market surveys were conducted in all key identified markets. The team visited Warr trading centre, Paidha town council, Nebbi municipality, Pakwach town council, Panyimur town council, Opit town council, Gulu municipality, Agago town council as well as the small weekly markets, auction markets, and shops, kiosks, daily markets in these areas to collect data.

Tables 4 below shows that the average annual living income needed to afford a decent standard of living

for ALENU beneficiaries (with an average of 7 people) is UGX 21.2 million (or monthly UGX 1.8 million). This translates into a daily value of UGX 8,288 per household (\$ 2.3 per person). It is also evident from the table that 46% of this living income is spent on food followed by education with 17%. These figures are very close to the household expenditure pattern for northern Uganda indicated in the national statistics at 41% of their income on food.<sup>5</sup> However, as both table 4 and 5 show, the living income is higher in Acholi sub region (UGX22,5 million also where groundnuts, soybeans, apiary and beans are farmers) as compared to West Nile sub region (UGX 19,9 million; where Irish potato, onion and poultry are farmed). This difference is attributed largely to the higher household sizes in Acholi sub region (7.3 persons) as compared to 6.2 persons in West Nile sub region.

Table 4: Average annual living income by region

Cost of living	West Nile	Acholi	Total	US\$	% share
<b>A: Food</b>	9,536,472	9,901,937	9,719,204	2,663	45.9%
<b>B: Housing</b>				-	
Rental equivalent	166,667	250,000	208,333	57	1.0%
Water bill equivalent	14,150	24,625	19,388	5	0.1%
Paraffin for lighting	98,150	39,000	68,575	19	0.3%
Solar lighting	58,667	24,208	41,438	11	0.2%
Fuelwood for cooking	441,500	412,750	427,125	117	2.0%
<b>C: Other essential costs</b>					
Health	1,633,650	2,270,850	1,952,250	535	9.2%
Education	3,118,134	3,901,903	3,510,019	962	16.6%
Public transport	1,213,000	1,635,625	1,424,313	390	6.7%
Communication	786,702	815,406	801,054	219	3.8%
Clothing and footwear	395,979	608,004	501,992	138	2.4%
Furniture and appliances	60,230	73,311	66,770	18	0.3%
Recreation & culture	566,218	453,375	509,796	140	2.4%
<b>D: Cost for Emergencies</b>	1,808,952	2,041,099	1,925,026	527	9.1%
<b>Total Annual Living Income</b>	<b>19,898,470</b>	<b>22,452,094</b>	<b>21,175,282</b>	<b>5,801</b>	<b>100%</b>
<b>Total Monthly Living Income</b>	<b>1,658,206</b>	<b>1,871,008</b>	<b>1,764,607</b>	<b>483</b>	

Table 5: Average household annual living income by ALENU promoted commodities

Cost of living	Households engaged in selected ALENU promoted commodities						
	Irish potato	Onion	Poultry	G-nut	Soy beans	Apiary	Beans
<b>A: Food</b>	9,536,472	9,536,472	9,536,472	9,901,937	9,901,937	9,719,204	9,719,204
<b>B: Housing</b>							
Rental equivalent	166,667	166,667	166,667	250,000	250,000	250,000	250,000
Water bill equivalent	14,150	14,150	14,150	24,625	24,625	24,625	24,625
Paraffin for lighting	98,150	98,150	98,150	39,000	39,000	39,000	39,000
Solar lighting	58,667	58,667	58,667	24,208	24,208	24,208	24,208
Fuelwood for cooking	441,500	441,500	441,500	412,750	412,750	412,750	412,750
<b>C: Other essential costs</b>							
Health	1,633,650	1,633,650	1,633,650	2,270,850	2,270,850	2,270,850	2,270,850
Education	3,118,134	3,118,134	3,118,134	3,901,903	3,901,903	3,901,903	3,901,903
Public transport	1,213,000	1,213,000	1,213,000	1,635,625	1,635,625	1,635,625	1,635,625
Communication	786,702	786,702	786,702	815,406	815,406	815,406	815,406
Clothing and footwear	395,979	395,979	395,979	608,004	608,004	608,004	608,004
Furniture and appliances	60,230	60,230	60,230	73,311	73,311	73,311	73,311
Recreation & culture	566,218	566,218	566,218	453,375	453,375	453,375	453,375
<b>D: Cost for Emergencies</b>	1,808,952	1,808,952	1,808,952	2,041,099	2,041,099	2,041,099	2,041,099
<b>Total Annual Living Income</b>	<b>19,898,470</b>	<b>19,898,470</b>	<b>19,898,470</b>	<b>22,452,094</b>	<b>22,452,094</b>	<b>22,269,362</b>	<b>22,269,362</b>
<b>Total Monthly Living Income</b>	<b>1,658,206</b>	<b>1,658,206</b>	<b>1,658,206</b>	<b>1,871,008</b>	<b>1,871,008</b>	<b>1,855,780</b>	<b>1,855,780</b>

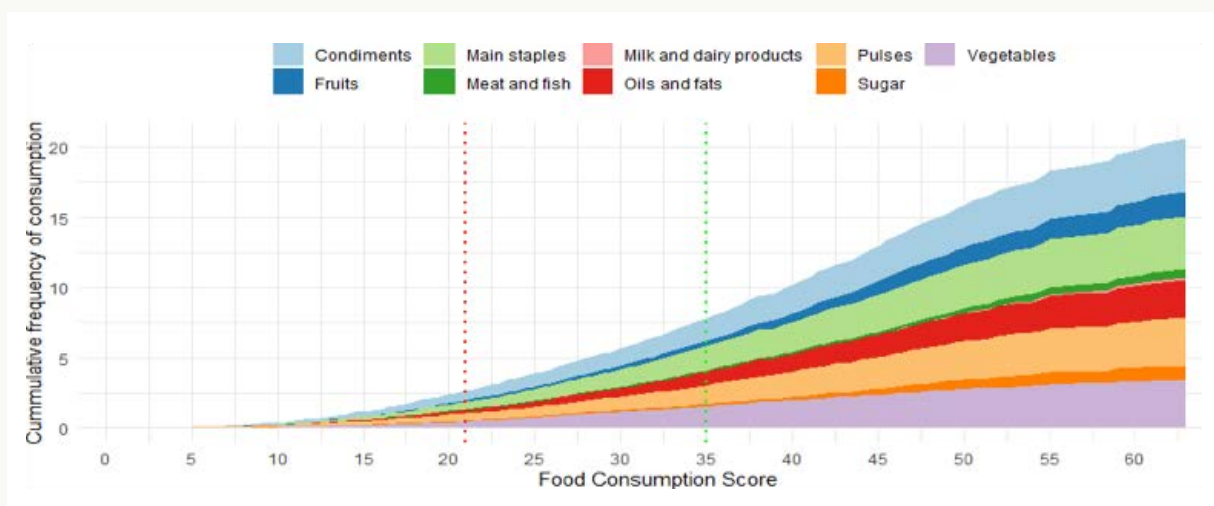
5. See Uganda Bureau of Statistic (2020) Statistical Abstract 2020. Kampala (table 4.2.2, p. 40).

### Food cost

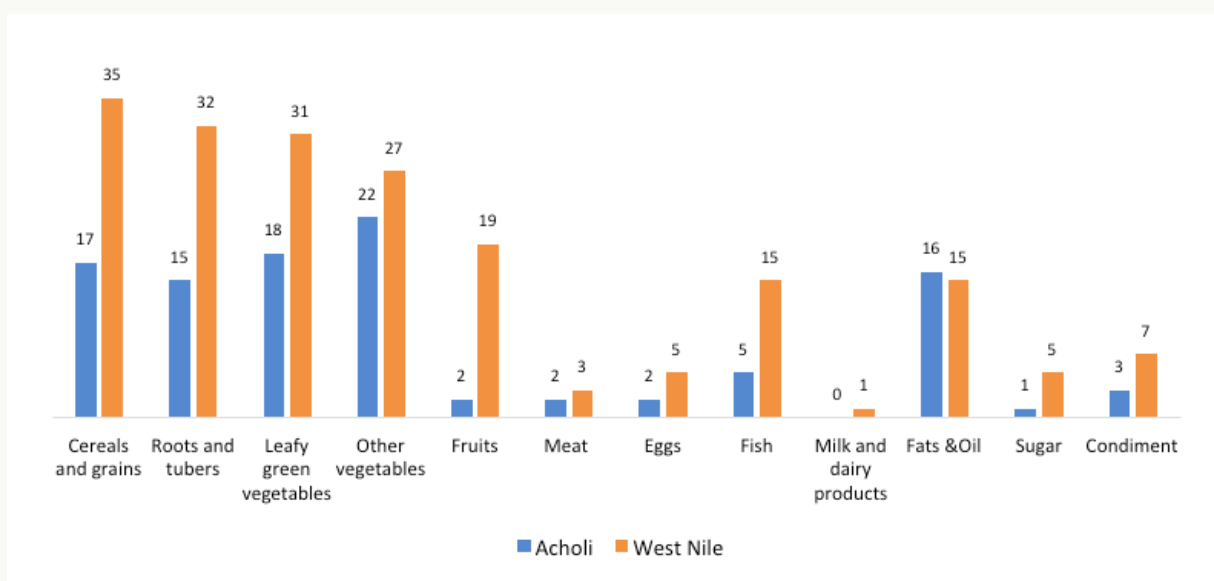
The Anker methodology provides a guide on how to develop a diet model and food costing. Its focus is on a relatively low-cost nutritious food that have sufficient calories – 3,000 kcal/day WHO standard for agricultural work – drawn from the local rural food basket and preference but with acceptable quantities of proteins (min. 10%), fats (15-30%), carbohydrates (50-75%), minerals and vitamins to help ensure that workers and their families have enough to eat and be healthy. An addition of 18% to total cost of model diet (allowing 10% for variety and flexibility; 3% for wastage and spoilage; and 5% salt, spices and condiments) was also provided.

Initially, the baseline study found out that ALENU beneficiaries had three key sources of food, namely: own production (51% - Acholi 23% and West Nile 28%) followed by purchase from the market (32% - Acholi 13% and West Nile 19%), and finally work for food (11% - Acholi 7% and West Nile 4%). The main crops grown in the project areas are cassava, soybeans, beans and groundnuts and livestock reared are poultry, goats and cattle but in both cases with marked regional variations. The cumulative food consumption frequency with the minimum limits (poor food consumption – red line) and the acceptable situation (green line) following the WFP standard values and the diet diversification are shown below in figures 4 and 5 respectively.

**Figure 4: Food consumption frequency**



**Figure 5: Diet diversity status (%)**



As table 6 shows, annually a household on average needs UGX 9,719,204 to afford a low-cost nutritious diet.

However, important to point out are:

- 1) In line with previous studies, the production diversity in the project areas translated into a diverse caloric intake<sup>6</sup> although the major caloric intake in the two sub regions - West Nile is from roots and tubers and in Acholi, cereals.<sup>7</sup> As table 6 shows (and before adjustment), while plantain (matooke), fresh fish and palm oil are common in West Nile so is millet, sorghum, shea butter/sunflower oil in Acholi sub regions.
- 2) With increasing commercializing (cash preference over food), there was a very low caloric intake (2,456 kcal to 2,521 kcal in West Nile and Acholi sub regions respectively).<sup>8</sup> In both sub regions, rice and meat are still often eaten as a luxury and mainly during festive events (burials, Christmas and New year). Dairy products are also too scarce. Fruits remains a seasonal food.
- 3) There is wide variety of vegetables including cabbage, egg plants, Okra, spider plant, malakwang, spinach (dodo), and pumpkin/cassava leaves; thanks to ALENU project for the introduction of new varieties in the beneficiary households.

**Table 6: Dietary intake and food cost**

Food category	Food type	Daily Ration		Cost per person/day (UGX)		
		West Nile	Acholi	West Nile	Acholi	Total
Cereals	Rice	60	70	180	153	166
	Millet		80		52	26
	Sorghum	120	100	120	282	201
Roots & tuber	Cassava	280	250	336	479	408
	Sweet potato		100		175	88
Starchy vegetables	Banana (Matooke)	50		100		50
Legumes & nuts	Beans	70		167		83
	Pigeon peas		80		154	154
	G-nuts	50	70	215	280	248
Dairy	Milk	50	50	60	75	68
Eggs	Chicken eggs	30	50	500	500	500
Meat and fish	Beef	30	50	360	700	530
	Silver fish (Mukene)	100	80	186	144	165
	Fish (fresh, smoked, sun dried)	52		667		334
Green leafy vegetables	Pumpkin leaves	300	230	215	230	222
	Spinach	250	180	200	161	180
Other vegetables	Egg plants	210	180	218	180	199
Fruits	Banana	98		29		15
	Mango	100	100	50	104	77
	Oranges		100		50	25
Oil and fats	Palm oil	20		30		15
	Vegetable Oil		30		39	20
<b>Total cost of a model diet excl. added cost</b>				<b>3,633</b>	<b>3,772</b>	<b>3,702</b>
<b>Add: 16% for salt, condiment, waste and added variety</b>				<b>581</b>	<b>604</b>	<b>592</b>
<b>Total cost of a model diet including added cost per individual per day</b>				<b>4,214</b>	<b>4,376</b>	<b>4,295</b>
<b>Total cost of a model diet including added cost per family per day</b>				<b>26,127</b>	<b>27,129</b>	<b>26,628</b>
<b>Total cost of a model diet including added cost per family per year</b>				<b>9,536,472</b>	<b>9,901,937</b>	<b>9,719,204</b>

6. Linderhof, V., Powell, J., Vignes, R. and Ruben, R (2016) *The influence of household farming systems on dietary diversity and caloric intake: the case of Uganda*. Paper presented at the 5th conference of the African Association of Agricultural Economist, 23-26 September 2016, Addis Ababa (Ethiopia).

7. Ssewanyana, S. and Kasiyre, I (2010) *Food Insecurity in Uganda: A dilemma to achieving the hunger millennium development goal*. Research Serie No. 70. EPRC: Kampala.

8. Kilimani, N., Buyinza, F., and Guloba, M (2020) *Crop Commercialization and Nutrient Intake Among Farming Households in Uganda*. African Economic Research Consortium: Nairobi

### Housing cost

Although Uganda has no housing policy, many families aspire for decent housing. According to the UN HABITAT, a decent house is a dwelling located outside slums and unsafe areas that have permanent walls, roofs that do not leak, and adequate ventilation; amenities such as electricity, water, and sanitary toilet facilities; and sufficient living space so parents can sleep separately from children. Field observations during this study shows that the houses in both West Nile and Acholi sub regions are temporary with one room of grass thatched roof, soil floor and wattle wall (West Nile) and brick walls (Acholi). Kitchen, animal den, and pit latrines are constructed outside the residential houses. These settings render the houses prone to crowding and with inadequate ventilation. There is also no access to electricity (for both lighting and cooking). Many families use paraffin lamps (Tadoba) for lighting although a few use solar lamps (or pay-as-you go solar systems). Access to safe water is primarily from boreholes or protected springs.

During our discussions with the district engineering departments, it emerged that there is no standard guidelines and drawings for rural housing. However, the District Engineers felt that the District Councils can champion a low-cost model for smallholder farmers. Although they estimated most of the structures at UGX

7-15 million, farmers pointed at simple models that some of their fellow members had built with permanent roof, walls and floor. They costed these units at between UGX 5 – 7 million in West Nile and Acholi sub regions. We found this cost akin to the housing units being promoted under the PRDP III proposal for northern Uganda.

That in these rural and remote areas there are no rental services as each family struggles to construct its own dwelling unit, the average cost of housing (see table 7 and for details in annex 7) of UGX 764,858 per annum covered:

- the farmers 2-bedroom housing model cost that was estimated to cost UGX 5-7 million and to last for 30 years. This translates into an average annual rental of UGX 208,333 per year;
- the monthly operations and maintenance fees households pay to their water user committees for the use of boreholes or protected springs;
- the monthly expenditures on lighting (paraffin and solar); and
- the monthly firewood used for cooking (i.e., two bundles per week). Unfortunately, almost all families do not use improved cook-stoves.

**Table 7: Cost of Housing**

	West Nile	Acholi	Total
Rental Equivalent	166,667	250,000	208,333
Water bills	14,150	24,625	19,388
Paraffin lighting	98,150	39,000	68,575
Solar lighting	58,667	24,208	41,438
Fuel wood for cooking	441,500	412,750	427,125
<b>Total</b>	<b>779,133</b>	<b>750,583</b>	<b>764,858</b>

### Costs for Other Essentials

Under this cost center, data was collected with regards to the following:

- **Children's education:**

Uganda's current formal education system is a four-tier structure that is modeled along a 7-4-2-3-year progression pattern: Seven years of primary education, followed by four years of lower secondary or Ordinary level ('O' level), two years of upper secondary or advanced level ('A' level) and three to five years of

tertiary education. Children starts nursery schooling aged 3-5 years. They proceed to primary between 6-12 years, secondary age 13-18 years, and tertiary education from 18-23 years depending on the courses pursued.

Although under the universal education policies there is free primary and secondary education, education is not free. In public schools, parents pay costs for Parent Teachers Association, coaching, founding bodies, district examination, and scholastic materials (such as

books, pens and pencils, geometrical sets, uniforms, shoes, sweaters, etc.). Given the poor performance in public schools many private schools have emerged including in rural areas. During community meetings with the farmer group members, they pointed out that depending on the availability of these institutions, they too send their children to private nursery, primary, and secondary schools. For the cost of 3 and 4 children in West Nile and Acholi sub region respectively (see annex 8a & b) the data collected from both the parents, nearby schools, and suppliers of scholastic materials is

summarized in table 8 below. Using the low-cost margin for each level, the average annual cost for nursery education was UGX 566,774, primary education was UGX 395,981, and secondary education was UGX 2,547,264. The variation in cost between nursery and primary education is because all children in nursery schools study only in private schools while those in primary schools' study in both private and public schools. On the whole, on average a smallholder farmer needs UGX 3,510,019 annually to meet his/her children's education cost.

**Table 8: Cost of education**

Education levels	West Nile	Acholi	Total
Nursery	390,258	734,290	566,774
Primary	398,415	393,546	395,981
Secondary	2,329,461	2,765,067	2,547,264
<b>Total</b>	<b>3,118,134</b>	<b>3,901,903</b>	<b>3,510,019</b>

- Medical cost:**

The different focus groups discussions and KIs with district health officials and health facilities revealed that the common illnesses suffered by households are malaria and cough (see annex 9). This is attributable to both the thick vegetation covers in the region and the low use of mosquito treated nets. This finding confirms the UNHS 2019/20 report that the leading causes of sickness in northern Uganda was malaria (57% West Nile and 60% Acholi). To treat these ailments, 91%

of the households move less than one kilometer to a health facility;<sup>9</sup> starting with a public health facility (for diagnosis) ending with private clinics and hospitals (for lab tests, medicines and admissions) as public health facilities have persistent medicine stock outs. It was also reported that on average annually at least two member of a household falls sick, the direct annual out-of-pocket cost for medical treatment (see table 9) was estimated at an average of UGX 1,952,250 (UGX 1.6M West Nile and UGX 2.3M Acholi).

**Table 9: Medical cost**

	West Nile	Acholi	Total
Medical Book/Form	22,481	58,427	40,454
Lab tests	111,726	71,410	91,568
Medicine	881,204	1,491,828	1,186,516
Others	618,239	649,185	633,712
<b>Total</b>	<b>1,633,650</b>	<b>2,270,850</b>	<b>1,952,250</b>

- Transport and communication:**

Transport and communication remain a discrete cost many families hardly pay attention to. Yet ALENU project beneficiaries spend on these routinely. The study found out that beneficiaries travel by public means, twice a week, to local markets especially to buy foodstuff and other household basic needs. Meanwhile,

monthly the same households travel at least twice to health facilities to access treatment for the rampant malarial ailment. Equally, quarterly both children and their parents travel to and from schools. Cumulatively, on average this cost the households as table 10 shows, annually UGX 1,424,313.

9. UBOS (2021) UNHS 2019/2020 presentation. Kampala

**Table 10: Cost of transport**

Place frequently traveled to	West Nile	Acholi	Total
Market	468,000	565,000	516,500
Health Units	394,750	472,500	433,625
Schools	140,000	420,000	280,000
Visiting relatives	33,875	31,250	32,563
Burial	57,000	46,250	51,625
Football shows	119,375	100,625	110,000
<b>Total</b>	<b>1,213,000</b>	<b>1,635,625</b>	<b>1,424,313</b>

Meanwhile to keep connected with the “outside world” the project beneficiaries maintain open communication using simple mobile phones and local FM radios. These are used to access local news, contacting their family members and conducting their businesses. These communication channels as table 11 below shows cost them on average of UGX 801,054 annually.

**Table 11: Cost of communication**

Cost Centers	West Nile	Acholi	Total
Cost of mobile phone	22,021	25,865	23,943
Cost of radio	7,488	34,625	21,057
Airtime	450,800	476,250	465,025
Charging Fee	184,050	195,500	189,775
Battery	122,343	80,167	101,255
<b>Total</b>	<b>786,702</b>	<b>815,406</b>	<b>801,054</b>

- **Clothing and footwear:**

Clothing and footwear are critical for social life. Households spend on buying clothes for public occasions as well as on jacket/sweater and blanket for the cold seasons. Blankets are shared in the family among families and spouses. Overall, table 12 shows that clothing cost a smallholder household an average of UGX 501,992 per year. The huge variation between West Nile and Acholi sub regions is because in the latter mothers’ use “gomesi” the traditional “kiganda dress” that has many accompanying pieces to make a complete dress. Yet in West Nile women prefer the simple kitenge dress.

**Table 12: Cost of clothing and footwear**

	West Nile	Acholi	Total
Father	107,917	166,750	137,333
Mother	128,250	186,429	157,340
Children	159,812	254,825	207,319
<b>Total</b>	<b>395,979</b>	<b>608,004</b>	<b>501,992</b>

- **Furniture and appliances:**

The common furniture to the typical household includes beds, chairs and tables, and cupboards. These items beneficiaries echoed are critical for one to have a decent house. Their low cost is because they have long life spans (5-30 years). On average, furniture and appliances cost a smallholder household UGX 66,770 per year (see table 13 below).

**Table 13: Cost of furniture and appliances**

	West Nile	Acholi	Total
Beds	2,276	6,042	4,156
Mattresses	7,000	9,063	8,031
Chairs and tables	10,483	9,638	10,060
Cupboards	5,970	9,194	7,582
Utensils	34,500	39,375	36,938
<b>Total</b>	<b>60,230</b>	<b>73,311</b>	<b>66,770</b>

- **Recreation and culture:**

To assess the cost of maintaining social ties (see table 13 below), farmer group members pointed at the community events for which they make mandatory payments (and failure to do so attract harsh punishment such as expulsion or shame). These include funerals, religious events such as weekly Sunday prayers, marriages celebrations, football leagues on DSTV (especially by youth and young men) and other social gifts. These social obligations cost every household an average of UGX 509,796 per year.

**Table 14: Cost of recreation and culture**

Typical events make contributions to	West Nile	Acholi	Total
1. Burials	120,500	64,000	92,250
2. Religious contributions	79,513	123,000	101,256
3. Marriages / Celebrations	153,250	80,000	116,875
4. Beverages	231,660	104,000	167,830
5. Football leagues	53,750	68,750	61,250
6. Others	115,677	52,500	84,083
<b>Total</b>	<b>566,218</b>	<b>453,375</b>	<b>509,796</b>

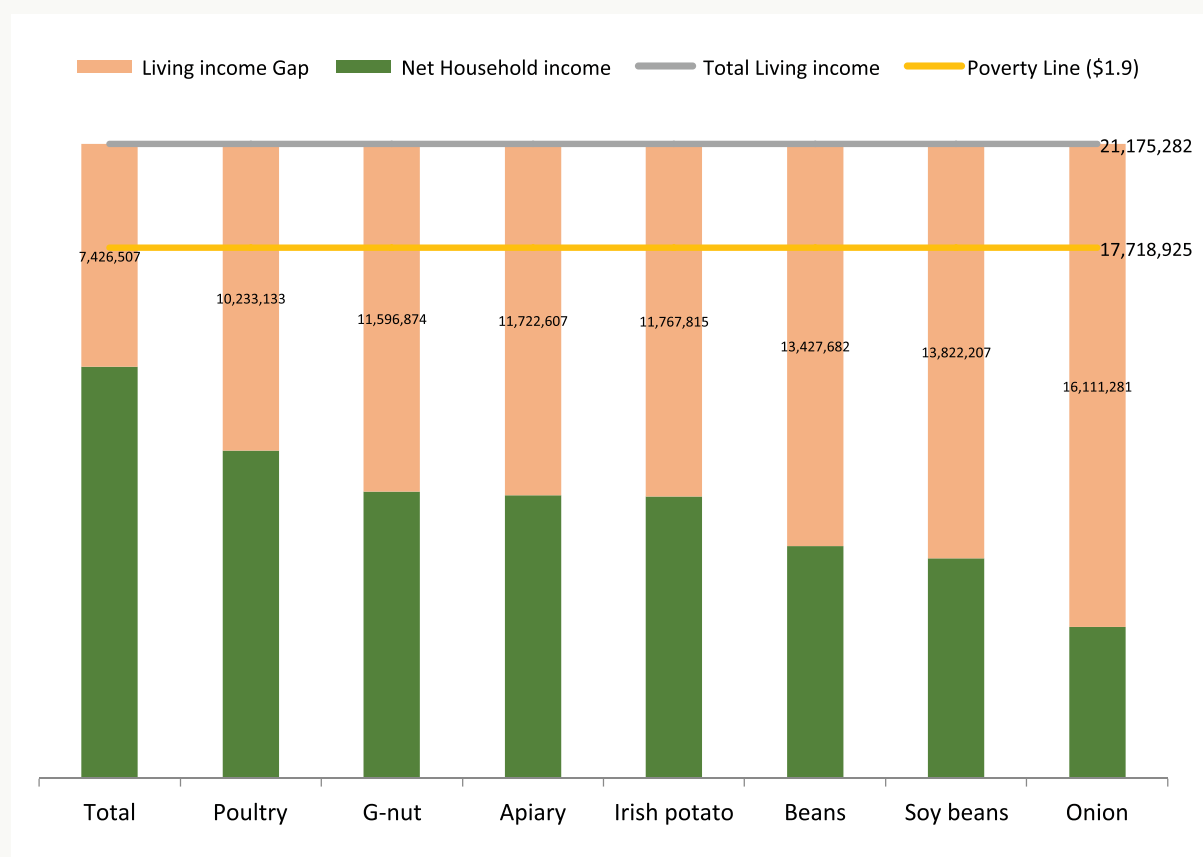
### Cost for Emergencies

In line with the Anker methodology, a 10% provision of total cost of food, housing and other essentials worth UGX 1,925,026 was allocated to cater for any contingency budgets a household needs to spend on. This was derived from the total of UGX 19,250,256.

## 4.4 Living Income Gap

To answer the study objective of estimating ALENU project contribution to the living income of the targeted households, first it was important to estimate the living income gap. Using the NHI estimated at UGX 13.7 million (see section 4.2, table 2) and the annual living income worth UGX 21.2 million (see section 4.2, table 4), it is evident that ALENU smallholder farmers have an annual income gap of UGX 7,426,507 (see figure 6). This gap at a project level represents 35% to the living income.

The gap also varies by commodity from 75% gap in onion producing households to 45% in poultry producing households (see annex 14). During the participatory analysis process, members chorused, “now we see why year-in and year-out we are in perpetual debts (from VSLA, families and friends).” While this finding justifies the project value add through VSLA, it also points to the fact that unaddressed, many households will perpetually remain indebted. Finally, as figure 6 reveals, the existing NHI does not also enable the targeted households to live above the international poverty line. Key drivers for this large income gaps include the engagement in largely less unprofitable income generating sources – crops, livestock, and alternative incomes. More so there is inadequate entrepreneurial and value addition skills necessary to increase the production per unit. As such, year-in and year-out targeted household produce and trade at dismal and often negative returns.

**Figure 6: Household living income gaps by ALENU promoted commodities**

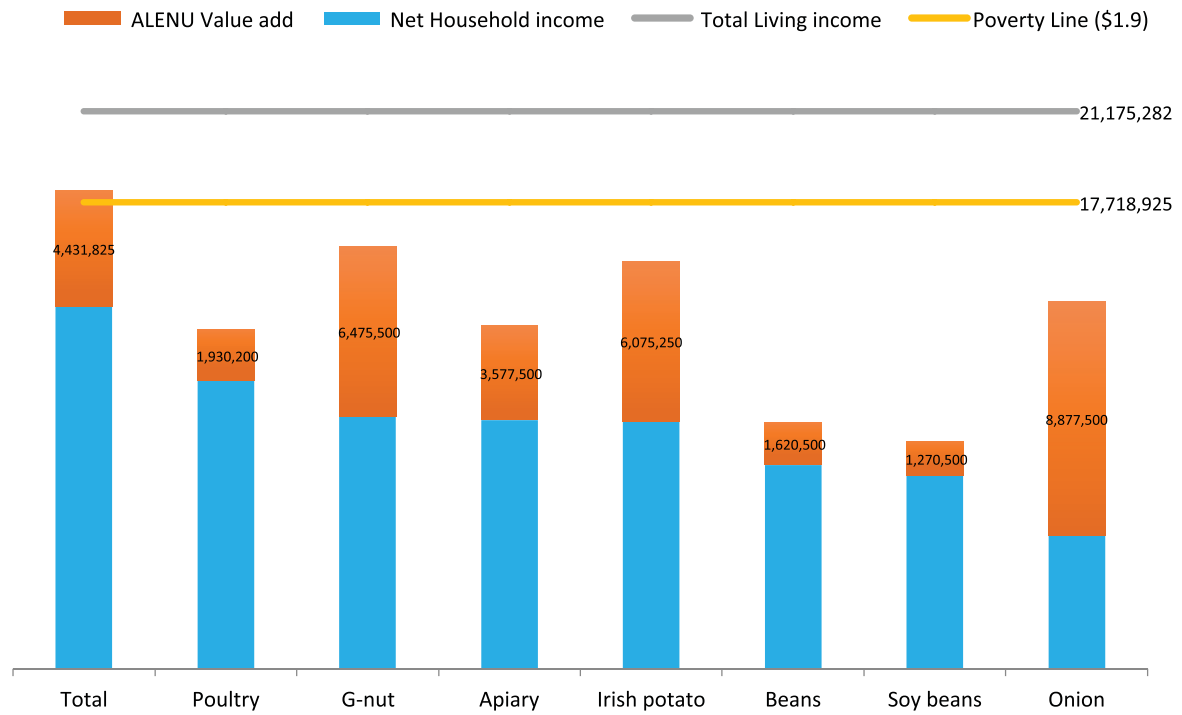
## 4.5 ALENU added value to Smallholder Farmer Living Income

To assess the added value of ALENU to closing the living income gap it is important to note the following:

1. The project is promoting VSLA in all the farmer groups and all members are saving. Although in a number of groups no share out has been done, the VSLA data was reviewed and used to arrive at a project share out value of UGX 485,500 that each member will likely receive on the share out day (between October to December 2021).
2. The project is promoting specific market commodities in the two sub regions. The gross margin analysis conducted for all these enterprises by the agroecology champions and paravets during their trainings (see annex 13) was used to find the likely financial values

these commodities will add to beneficiary household incomes. In some of the year one farmer groups that harvested and sold some of their produce (even when the primary target was seed multiplication), these data was validated and found correct (with dismal variations).

As figure 7 below shows, generally through ALENU interventions the targeted households will attain a NHI above the national poverty line but not the living income. Specifically for the different commodity producing households, ALENU project intervention will also neither enable then transition above both the extreme poverty line nor the living income. Thus, there is need for commodity crop-poultry diversification as well as the promotion of viable alternative IGAs.

**Figure 7: ALENU contribution to closing the Living income gap**

## 5 KEY OBSERVATIONS

To improve on programme implementation, the following issues emerged during the study worth remedial actions:

Key issues	Suggested solutions
<ul style="list-style-type: none"> <li>Land is a key production constraint in especially West Nile region where on average a household has 2 acres (as compared to more than 4 acres in Acholi sub region). Seasonally, all these farm lands are intercropped to ensure diversified harvest for the family. Without fallowing, land fertility is on the decline. In some area especially in the uplands of Erussi and Zombo, many families now rent land every season.</li> </ul>	<ul style="list-style-type: none"> <li>Explore and promote high impact crop enterprises (such as onions, Irish potato, and ground nuts) jointly with non-land demanding enterprises (such as poultry and apiary) for better household income diversification needed for poverty reduction.</li> <li>Although land conflict was not yet reported, such rising land fragmentation is a recipe for family and community land conflict. Family land demarcation and registration should be promoted.</li> </ul>
<ul style="list-style-type: none"> <li>There is a very high crop diversification that beneficiary households are engaged in (average 7 in Acholi and 5 in West Nile) both for food and income generation. Although this practice is a risk mitigation strategy, its reliance on traditional knowledge and technologies albeit without agribusiness skills use further reduces its net effects in increasing farm productivity.</li> </ul>	<ul style="list-style-type: none"> <li>Promote Farm Optimization planning anchored on farming as a business with clear enterprise gross margin analysis so that farmers select high paying enterprises instead of investing in many low and sometimes negative return enterprises. This should be accompanied by good links to markets.</li> <li>Agricultural Extension Officers should not focus their support on only ALENU promoted commodities. They should broaden their support to help farmers adopt the good agricultural practices being promoted across board.</li> <li>Value addition should also be promoted as part of the entrepreneurial activity to increase in the net return on major market commodities households produce</li> </ul>
<ul style="list-style-type: none"> <li>In spite of the high consumption of green vegetables, particularly for West Nile, beneficiaries have not diversified their vegetable production to include the local traditional vegetables. Visible in the homes are the ALENU distributed improved vegetables (kale, egg plants, okra). Yet these vegetables cannot be propagated for local seed sourcing.</li> </ul>	<ul style="list-style-type: none"> <li>VHTs and HNOs should encourage beneficiaries to diversify their production and consumption of vegetables to include the local vegetable varieties whose seeds can be saved locally for seasonal production. In addition, since beneficiaries are selling the excess harvest of the project supported vegetables, they should be encouraged to save part of the funds for buying own seeds.</li> </ul>
<ul style="list-style-type: none"> <li>Marketing costs constitutes about 7-10% of the entire production and marketing cost (see annex 15) because beneficiaries sell their commodities in rural markets and trading centers incurring them high transaction costs on transport (boda boda), market dues, and incidentals (e.g., feeding).</li> </ul>	<ul style="list-style-type: none"> <li>Collective marketing should be promoted by the MCs for all the different commodities their group members are producing so that access to premium markets can enhance household incomes.</li> <li>A database of all MC members in the different regions and districts be compiled and shared out so that the primary market focus is widened beyond the local and FARM Gain App markets.</li> </ul>

<ul style="list-style-type: none"> <li>Marketing Committees (MCs) are supporting their groups market their produce. They are also using the mobile phones to gain access to market information. However, their focus was only on ALENU promoted commodities excluding many other commodities that they are producing for the market. The MCs are also not engaging each other in different markets to explore market opportunities. Finally, some of the MCs could not gain access to Farm Gain App.</li> </ul>	<ul style="list-style-type: none"> <li>The FARM Gain App needs to be activated for all new ad old groups and MC members should be guided to use the tool for a wider market survey.</li> <li>Engagement with the various district local government is needed to discuss the high cost (and double taxation in some cases) that smallholder farmers face.</li> </ul>
<ul style="list-style-type: none"> <li>There is a significant use of woodfuel for cooking. On average a household weekly use 2 bundles (approx. 12-15Kgs). This is a huge pressure on the natural vegetation given that expansion of acreage too means deforestation.</li> </ul>	<ul style="list-style-type: none"> <li>There is need to build synergies with existing programmes in the various districts to promote low-cost energy saving stoves on top of the promotion of afforestation that ALENU is already promoting through the distribution of tree seedlings.</li> </ul>
<ul style="list-style-type: none"> <li>VSLA has been widely accepted by all the group members and borrowing for business start-ups is on the rise. However, analysis of many of the alternative IGAs (brewing local potent gin (“enguli”), selling “muziri” (silver fish), etc.) all proved non profitable (and in some cases with negative returns). This poses a huge risk to loan repayment, members credibility and asset depletion.</li> </ul>	<ul style="list-style-type: none"> <li>The IGA-SPM training needs to discuss not only enterprise selection skills. It should also explore business cost- benefit analysis so that loans are borrowed and invested in profitable ventures.</li> </ul>
<ul style="list-style-type: none"> <li>While ensuring families eat nutritious foods is cardinal to health, the study found that there is a huge expense on purchase of foods (over 45% of cost of living). Interestingly, most of the costs are on “food waste” e.g., a family of 7 people buying 2Kgs of meat per meal (over and above the WHO recommended 700 grams). Equally, there are “male expenses” such as 10-month leisure costs on watching football on private DSTV.</li> </ul>	<ul style="list-style-type: none"> <li>The HNO should introduce the beneficiaries to meals planning and budgeting so that food expenses are reasonable.</li> <li>Financial literacy training should emphasize the aspect of family budgeting to ensure that expenses are managed within a family budget as opposed to the general ‘deficit budgets” families experience year-in and year-out (forcing them to borrow loans for unnecessary consumptions).</li> </ul>

## REFERENCES

1. Anker, R. and Anker, M (2017) *Living Wage around the world: Manual for Measurement*. Edward Edgar Publishing Ltd.
2. Komives. K., Grunze, S., Krain. E., Daniels. S., Seville.D., and Hanna. N., (April 2015). *Introduction to the Living Income Concept in the Context of Agricultural Commodities*.
3. Komives. K., Grunze, S., Krain. E., Tschanz. A., Daniels. S., and Seville.D., (May 2015). *Defining, Calculating and Using a Living Income Benchmark in the context of Agricultural Commodities*. Discussion Note
4. Kristin Komives, Sophie Grunze, Eberhard Krain, Don Seville, Stephanie Daniels, and Noura Hanna (April 30, 2015) *Introduction to the Living Income Concept in the Context of Agricultural Commodities*.
5. Kristin Komives, Sophie Grunze, Eberhard Krain, Don Seville, Stephanie Daniels, and Noura Hanna (May 2015) *Defining, Calculating and Using a Living Income Benchmark in the of Agricultural Commodities*.
6. UBOS (2020) *Statistical Abstract 2020*. Kampala
7. UBOS (2020) *Uganda Food Balance Sheets Report 2012 -2018*. Kampala
8. UBOS (2021) *Uganda National Household Survey 2020*. Kampala
9. UBOS (2021) *UNHS 2019/2020 presentation*. Kampala
10. Linderhof, V., Powell, J., Vignes, R. and Ruben, R (2016) *The influence of household farming systems on dietary diversity and caloric intake: the case of Uganda*. Paper presented at the 5th conference of the African Association of Agricultural Economist, 23-26 September 2016, Addis Ababa (Ethiopia).
11. Ssewanyana, S. and Kasiyre, I (2010) *Food Insecurity in Uganda: A dilemma to achieving the hunger millennium development goal*. Research Serie No. 70. EPRC: Kampala.
12. Kilimani, N., Buyinza, F., and Guloba, M (2020) *Crop Commercialization and Nutrient Intake Among Farming Households in Uganda*. African Economic Research Consortium: Nairobi
13. Anker, R. and Anker, M (May 2013) Report: *Living Wage for rural South Africa with Focus on Wine Grape Growing in Western Cape Province*
14. Anker, R. and Anker, M (January 2014) Report: *Living Wage for rural Malawi with Focus on Tea Growing area of Southern Malawi*
15. Anker, R. and Anker, M (March 2014) Report: *Living Wage for Kenya with Focus on Fresh flower Farm area of Lake Naivasha*.
16. Northern Uganda Regional Development Forum (August 2019) *Northern Uganda regional Development Strategy 2020 -2035*.

# ANNEXES

## Annex 1: Terms of Reference

### Living Income study for the Action for Livelihood Enhancement in Northern Uganda (ALENU)

#### 1. Background Information

Under the Development Initiative for Northern Uganda (DINU), a Government of Uganda programme supported by the European Union (EU) and supervised by the Office of the Prime Minister, Caritas Switzerland has received a

grant to implement the Action for Livelihood Enhancement in Northern Uganda (ALENU). ALENU is implemented by a consortium consisting of four NGOs (Caritas Switzerland, Advance Afrika, Agency for Accelerated Regional Development, and Gulu Women Economic Development and Globalization).

For this grant action, Caritas Switzerland seeks to procure the services of an independent external consultant to design, plan and conduct a living income study which is complementary to the baseline study conducted in 2020.

#### 2. Project Information

Project title	Action for Livelihood Enhancement in Northern Uganda (ALENU)
Brief description	ALENU focuses on improving livelihoods through increased and diversified food production, enhanced market opportunities and better maternal and child nutrition in six districts of the West Nile and Acholi sub-regions.
Objectives	OO: To consolidate stability in Northern Uganda, eradicate poverty and under-nutrition and strengthen the foundations for sustainable and inclusive socio-economic development. SO: To increase food security, improve maternal and child nutrition, and enhance household incomes through support to diversified food production and commercial agriculture and through improving household resilience (notably to climate change) and women empowerment.
Expected results	R 1.1: Increased production of diversified food; R 1.2: Increased market accessibility; R 1.3: Improved nutritional status
Main activities	<p>R 1.1: Select HHs; develop Family Development Plans; develop seasonal Production and Marketing Plans; set up group demonstration gardens; conduct farmer field school sessions; facilitate outreaches by local government extension staff; organize seasonal agro-input fairs; build capacity of agro-input suppliers; form commodity-based cooperatives; train VSLA mentors; train Farmer Group (FG) members in VSLA; link SACCOs/ progressive FGs with formal banks.</p> <p>R 1.2: Provide FGs with Business Development Services; organize/ promote sub-county farmer markets; facilitate learning visits to model farmers/private sector actors; create added value for commodities; organize a multi-stakeholder platform and annual cross-sector dialogues; achieve progress in certification, quality control, branding and contracting.</p> <p>R 1.3.: Train VHTs/Health Workers on good nutrition practices, child health, family planning and WASH; empower cultural and religious leaders to sensitise community; increase access to prevention and curative health services; improve nutrition and sanitation practices at HH level; train VHTs on family planning, provide family planning services; conduct annual couples conference and community dialogues on family planning/GBV; conduct community dialogues for out-of-school adolescents on sexuality/ family planning, provide health services; advocate for supplies of FP commodities; facilitate debating clubs and youth peer groups in schools; collaborate with faith-based medical bureau.</p>
Commodities	Apiary, ground nuts, Moringa, poultry, vegetables/ fruits, and possibly others found important in the course of the baseline studies.
Location	Sub- regions: Acholi and West Nile. Districts: Agago, Amuru, Omoro, Nebbi, Pakwach and Zombo
Target group(s)	Subsistence farmers and their households (35,000); Local government officials (276), Village Health Team members (400), Cultural and religious leaders / Faith-Based Medical Bureau (58); Senior Teachers (24); Private sector and Public sector actors (144); local co-applicants (30). Total: 35'932 individuals.
Final beneficiaries	Total population of the 12 target sub-counties: 361,100 individuals
Project duration	40 months, January 2020 – April 2023

### 3. Objectives of the consultancy

One of the start-up activities of ALENU project implementation was to conduct a baseline study by a multi-disciplinary team (health, agriculture, economy) that will integrate a baseline survey, a living income study and a KAP survey. The living income study was to gather the net annual income required to afford a decent standard of living for all members of a beneficiary households like food, water, housing, education, healthcare, transport, clothing, and other essential needs including provision for unexpected events. The calculated decent cost of living would then be used as a living income benchmark. More importantly, the finding was to help beneficiary households model their family development plans, adapt to safe nutrition planning and budgeting. Unfortunately, the study that was conducted covered the baseline survey and KAP survey on Nutrition, WASH and Family Planning.

To close this information gap, a consultancy team shall be engaged to conduct a living income study following the well-established Anker methodology. The main objective is to estimate a representative living income for the project area which shall be based on the following specific tasks:

1. Estimating costs of basic but decent living standard for a reference size family, which is representative for the project area
2. Assessing whether prevailing incomes for specific project districts meet the living income standard.
3. Estimating the income contribution of ALENU project supported enterprises to meeting the decent living income.
4. Scope of work and methodology

The consultant and his/her team is required to design, plan, and carry out data collection, conduct data analysis and present recommendations based on this living income study. The work is to be conducted in close cooperation with the implementing partners, in the target districts of Agago, Amuru, Omoro, Nebbi, Pakwach, Zombo. The consultant and his/her team are required to familiarize themselves with all documents relevant to ALENU including the DINU programme. The methodology will rely on document review, secondary and primary data as well as stakeholder involvement.

#### Task 1:

Following the Anker methodology to measure decent but basic standard of living, the reference costs are estimated using three expense components – food, housing, and other essential Needs (Anker and Anker, 2017). Primary and secondary data will be used for estimating the different components.

- The calculation of food costs will be based on (1) required number of calories, (2) a model diet and (3) local food prices.
- The calculation of housing costs will rely on (1) local housing standards, (2) cost of acceptable local housing or rent, and (3) utilities and maintenance.

- Additional essential needs will entail all residual expenditures including education and health care.

Building on a qualitative approach (FGD and key informant interviews), primary data will be collected on the different components involving local governments (health, education, water, engineering, etc) and market actors (food vendors, kiosks, shops, construction firms, input suppliers, produce buyers). Secondary data on food, diets and housing shall be obtained from existing surveys, international minimum standards and existing living income studies.

#### Task 2:

Household income sources will be assessed based on the analysis of primary and secondary data. While secondary information will primarily be obtained through the results of the baseline survey and cross-checked with information collected in the field, primary data will be based on most common local community income sources that especially for farming will include gross margin analysis.

Before the implementation of data collection, the consultant shall elaborate a study protocol specifying the detailed methodological approach as outlined below. The document will eventually be validated in collaboration between Caritas Switzerland, BFH-HAFL (Berner Fachhochschule – Hochschule für Agrar-, Forst-, und Lebensmittelwissenschaften), and local consortium partners.

### 4. Deliverables

The following will be the expected deliverables of the consultancy:

- Study protocol prior to initiating the study, to be submitted electronically in English and detailing the below. The report is to be discussed with Caritas Switzerland and partners, adjusted as needed and approved by Caritas Switzerland:
  1. Study approach: operational concept, calculation of cost components and income, sampling strategy and sample size, study areas, data collection strategy, available secondary data to be used, expected results, ethical aspect etc.
  2. Work plan.
  3. Structure of the study report.
- Draft study report after data collection. The report is to be discussed with Caritas Switzerland and partners, adjusted as needed and approved by Caritas Switzerland:
  1. Summary of the methodology of the study, specifying any limitations / complications and changes to the initial design.
  2. Presentation of results according to task 1 and 2.
  3. Recommendations for supporting households model their family development plans, adapt to safe nutrition planning and budgeting.

4. Conclusions and recommendations to enhance the project success.
- Final report considering the feedback from Caritas Switzerland and partners and adjustments of the draft report. Detailing the elements of the draft report and any additional elements agreed upon.

## 5. Qualification and expertise

The contract will be awarded to a recognized consultant (key expert/ team leader) with who meets the following criteria:

- Advanced university degree in development or development economics/ social/ agriculture or agricultural economics, and public health, or related field.
- Strong experience and track-record in conducting quantitative and qualitative field surveys including living income studies with major international organizations and donors, particularly the EU.
- Expert experience in participatory qualitative and quantitative research methods and sampling strategies, including data collection and associated risk management.
- At least five years of experience in related field.
- Proven reporting and documentation skills.
- Demonstrate adequate capacities to organize and complete the assignment within the time frame specified including the set up – together with partners – of a qualified and competent local field research team.
- Strong interpersonal skills and the ability to communicate and work well with diverse people.
- The consultant is expected to propose a team of non-key experts, with professional and technical experience in agriculture, economy, health, communication and facilitation, data collection, and, ideally, local language skills.

## 6. Duration and time frame

The assignment is expected to begin on June 14, 2021.

NB. If external conditions hamper the study process, affecting the work plan, the consultant will work with AFARD

and Caritas Switzerland to find possible relevant solutions in order to guarantee the accomplishment of the assignment.

## 7. Outline of the report

The consultant shall propose an adequate report structure in view of the different components of the study.

## 8. Budget and logistics

The consultant is required to provide a holistic budget considering daily fees, travel and transportation, communication, and other logistics as needed, as well as VAT or related taxes.

## 9. Reporting

The consultant will report to AFARD's Director of programmes for overall strategic guidance and consult with implementing partners for the day-to-day management and coordination of the living income study.

## 10. Format of the Consultancy Proposal

The proposal should clearly indicate the following

- Technical proposal detailing interpretation of the terms of reference (ToR), comments on the ToR if any, methodology for the studies, and why they are most suitable for the assignment
- Detailed work plan and timeline for the assignment
- Outline of the study protocol and baseline report
- Financial proposal with detailed breakdown of tasks and costs stated in EUR or Uganda Shillings
- Evidence of work experience including an accomplished assignment of similar focus and scope and respective contacts of reference
- CVs of proposed Consultants

## 11. Submission of proposal

Deadline for submission: May 21, 2021.

Email: [afard@afard.net](mailto:afard@afard.net)

Subject: DINU/ALENU baseline study



## Production and Profitability Analysis of Key Cash Crops (1 acre)

## Coffee

Activities/Materials	Items	Quantity	Frequency	Cost/ Unit	Total
Land					
Land opening/1st ploughing					
2nd Ploughing					
Seedlings					
Planting					
Pruning	Labor				
	Equipment				
Hand and chemical Weeding	Labor				
	Herbicides				
Handling and de-suckering	Labor				
Fertilizer application	Labor				
	Fertilizer				
Spraying	Labor				
	Fungicides				
Manuring	Labor				
Mulching	Labor				
Picking	Labor				
Soaking and washing	Labor				
	Equipment				
Sun-drying coffee beans	Labor				

	Equipment					
Post-harvest handling	Labor					
	Equipment					
Marketing	Transport					
	Packaging					
	Market information					
Yield per acre						
Price per kg	Season 1					
	Season 2					
	Season 3					

Beans/Simsim/Cassava/Irish potato/

Activities/Materials	Items	Quantity	Frequency	Cost/ Unit	Total
Land					
Land opening/1st ploughing					
2nd Ploughing					
Seeds/planting materials					
Planting					
Weeding 1	Labor days				
	Herbicide				
Weeding 2	Labor days				
	Herbicide				
Chemical	Fungicides/insecticides				
Spraying	Labor days				
Fertilizer	Fertilizer				
	Labor days				
Harvesting	Labor				
Marketing	Transport				
	Packaging				
Yield per acre					
Price per bunch	Season 1				
	Season 2				
	Season 3				

## Livestock 1

Activities/Materials	Items	Quantity	Frequency	Cost/ Unit	Total
Stock					
Housing					
Supplementary feeding					
Equipment for care					
Treatment/Vet services					
Labour for care					
Period to maturity					
Yield per season					
No. sold per season					
Price per unit	Season 1				
	Season 2				
	Season 3				

## Livestock 4

Activities/Materials	Items	Quantity	Frequency	Cost/ Unit	Total
Stock					
Housing					
Supplementary feeding					
Equipment for care					
Treatment/Vet services					
Labour for care					
Period to maturity					
Yield per season					
No. sold per season					
Price per unit	Season 1				
	Season 2				
	Season 3				

## Foods that are eaten

Common type of food; how it is served/shared in the family; regularity of eating in a week

Common type of food; how it is served/shared in the family; regularity of eating in a week									
Food category	Food type	Freq. of eating in a week	Quantity eaten per week	Price/unit					
				Road side seller 1	Road side seller 2	Shop 1	Shop 2	Local market 1	Local market 2
Cereals (3 max)	Rice								
	Millet								
	Sorghum								
	Maize								
Roots & tuber (2 max)	Cassava								
	Sweet potato								
	Irish potato								
	Yams								
Starchy vegetables (2 max)	Banana Matoke								
Legumes & nuts (2 max)	Beans								
	Cow peas								
	Pigeon peas								
	G-nuts								
	Soy beans								
Dairy (1 max)	Milk								
	Yoghurt								
Eggs (1 max)	Eggs								

[illegible]

Housing,

Common type of housing/dimension;				
Number of people in the house;				
Life span of the house; and				
Desired quality of house (size in meters; number of rooms;				
	Housing			
Cost of construction	Rental/month	No. of years expected to stay/live	Repair & maintenance	

Housing Facilities

Facilities	Type	Cost of facility	Life span of facility	Quantity used	Price per unit	Average cost per month
Water	Borehole					
	Protected well					
	Rain water facility					
Lighting	Solar					
	Electricity					
	Paraffin					
Cooking Fuel	Fire wood					
	Charcoal					

Education cost

Cost centers	Costs incurred						
	Nursery 1	Nursery 2	Primary 1	Primary 2	Secondary 1	Tertiary 1	
Fess/tuition							
Uniform							
Sweater							
Shoes							
Books, pens							
Geo. Set/Lab item							
PTA							
Dev't Fund							
Foundation body							
Exams							
Coaching							
Trip							



Transport				
Place frequently traveled to	Type of transport	Frequency per month	Cost of transport	
Market				
Health units				
Schools				
Churches				
Visiting relatives				
Others (name....				
Others (name....				

### Clothing costs

Household members	Blanket (UGX)	Life span (months)	Jacket (UGX)	Life span (months)	Sunday best (UGX)	Life span (months)	A pair of shoes (UGX)	Life span (months)
Father								
Mother								
Child 1								
Child 2								
Child 3								
Child 4								

Furniture				Communication			
Common Type Bought	Life span in years	Cost of furniture	Common means	Life span in years	Cost of gadget	Accessories	Cost of accessories
Bed			Mobile Phone			Battery	
Mattress			Radio			Charging	
Chairs with cushion						Air time	
Tables							
Cupboard							

Recreation and Culture			
Typical Events Make Contributions to		Frequency	
		Month	Year
Burials			
Religious contribution			
Marriages			
Leisure – football, refreshments			

## Annex 2b: Key Informant Interview Guide for District Local Government

### Living Living Income Study Local Government Key Informant Interview Guide (For district local government staff only)

Caritas Switzerland and its consortium partners (AFARD, Advance Africa and GWED) are implementing ALENU project in the districts of Agago, Omoro, Amuru, Pakwach,

Nebbi and Zombo in Acholi and West Nile sub-regions in northern Uganda. In a bid to set a benchmark for performance assessment and learn lessons from this project, a living income study has been commissioned. We would therefore kindly request for your time (25 minutes max) to discuss with you about this project.

Take the name of respondents, designations, location and contact addresses.

Date of Interview:

### District Production Officer/District Agricultural Officer

Thematic area	Key questions
Food	<p>What are the main food crops, cash crops or livestock farmed in the district?</p> <p>What is the production cycle of these commodities/enterprises (crops and livestock)?</p> <p>What are the average yields of each crop?</p> <p>How many different types of livestock do you raise in a year? Probe: number of poultry, goats, sheep, pigs, cattle, etc and their off-springs in a year</p> <p>What are the inputs bought to facilitate the production of the different enterprises? Probe: for names and costs of inputs including family labour</p> <p>Who are the main produce buyers in the district? Probe: for names, where they come from, average quantity they buy per season and price</p> <p>How much cash benefit do farmers receive on average per year from the different enterprises mention above? Probe: For average quantity sold per season, selling price and net income from sale</p> <p>What is the average number of meals eaten by adult members and children under 6 years in your family/household?</p> <p>What are the common types of food items eaten in the district? Probe: different types of food items (carbohydrates, protein, vitamins, fats/oils, etc</p> <p>What are the main sources of food items mentioned above?</p> <p>What is average cost of each food item per week? Probe: the cost of individual food item bought in the week by the household</p> <p><b>THANK YOU</b></p>

**District Engineer, District Water Officer**

Thematic area	Key questions
Housing	<p>What is the main type of housing owned by farmers in the district? Probe: roofing, wall and floor materials</p> <p>What is the model housing type promoted in the district? Probe: design, life span, number of rooms, solar light, solar TV, radio</p> <p>How much does the construction, maintenance and repair of the house cost?</p> <p>What is the monthly house rental cost in the district?</p> <p>What is the main source of lighting in the house? Probe: for type, quantity used per week and cost per week</p> <p>What is the main source of water and cost per month?</p> <p>What is the form of cooking fuel used by farming households in the district? Probe: type of cooking fuel, quantity used per week and cost</p> <p><b>THANK YOU</b></p>

**District Education Officer /Inspector of Schools**

Thematic area	Key questions
Education	<p>What is the average number of children in nursery, primary and secondary schools per family in your district?</p> <p>What is the main cost of education borne by parents in the district? Probe: cost items and quantity per child in nursery, primary and secondary school</p> <p>What is the termly cost per child at nursery, primary and secondary education?</p> <p>Who are the main private sector players in education in the district? Probe: for type and names of organization/individuals and number per district</p> <p><b>THANK YOU</b></p>

**District Health Officer /Health Educator**

Thematic area	Key questions
Food consumption	<p>What different food items are most eaten by the communities in the district? Probe: categories of food eaten (cereals and grains, roots and tubers, starchy foods, legumes and nuts, dairy, eggs, meat, oils and fats, green leafy vegetables, other vegetables and fruits)</p> <p>What types of food items are mainly served for children and adults?</p> <p>How frequent are these foods served to the children and adults in a week?</p> <p>What are the main markets for the different food items in the district?</p> <p>What is the common type of sicknesses communities suffer from in your district?</p> <p>What is the frequency of visits to the health facility for treatment in the district by sick household members?</p> <p>What are the costs for medical services in the district? Probe: cost of consultation, medicines, deliveries, laboratory services, register book/medical form fee, etc</p> <p>Who are the main private sector players in health in your district? Probe: for type and names of organization/individuals and number per district</p> <p><b>THANK YOU</b></p>

## Annex 3: Study Workplan

## JULY 2021

SUN	MON	TUE	WED	THU	FRI	SAT
01	02	03	04	05	06	07
				Review of documents, Inception report and Design of Study tools with AFARD management		
08	09	10	11	12	13	14
				Review of study tools by AFARD management Consultant travel from Mbarara to Kampala		
15	16	17	18	19	20	21
Consultant travel to Nebbi	Inception meeting  Field operation planning	Finalization of tools  Printing of tools  Communication with Project team		ZOMBO  FG1 Irish potato (Kango)	KI and market surveys (Irish potato)	FG2 Irish potato (Athuma)
Travel to Agago	<b>AGAGO</b>  FG3 Apiary FG4 Apiary	FG5 Beans  FG6 Beans	KI and market surveys (Apiary and Beans)  Travel to Omoro	<b>OMORO</b>  FG7 Soy beans FG8 Soy beans	KI and market surveys (Soy beans)  Travel to Kampala	

# AUGUST 2021

SUN	MON	TUE	WED	THU	FRI	SAT
01	02	03	04	05	06	07
Travel from Kampala to Amuru	<b>AMURU</b> FG9 Groundnuts FG10 Groundnuts	KI and market surveys (Groundnuts) Travel to Pakwach	<b>PAKWACH</b> FG11 Poultry FG12 Poultry	KI and market surveys (Poultry)	Transcription	
08	09	10	11	12	13	14
Travel to Nebbi	<b>NEBBI</b> FG13 Onions FG14 Onions	FG15 Tomato FG16 Irish potato	KI and market surveys (Onions, Tomato/Irish potato)	Transcription		
15	16	17	18	19	20	21
Consultant & AFARD team travel to Kampala	Nutrition expert field visits to model diet and validate district-based nutrition status					
	Report writing starts					
22	23	24	25	26	27	28
	Submission of draft report to CACH for review					

### Annex 4a: List of farmer groups involved in the study

District	Sub county	Name of farmer group	Females	Males	Total
Zombo	Kango	Dikocing Ber	9	16	25
Zombo	Athuma	Lim Yabuyo	14	10	24
Agago	Lukole	Can rac	13	7	20
Agago	Lukole	Wakonye Kenwa	10	11	21
Agago	Wol	Lacwec Culo Kwok	16	3	10
Agago	Wol	Lubanga Twero	13	3	19
Omoro		Ket Can ii Tic	12	11	23
Omoro	Odek	Atek ki Lwak	12	8	20
Amuru	Lamogi	Ryem Can Ki Tic	14	9	23
Amuru	Amuru	Rubanga Twero	21	3	24
Pakwach	Pakwach	Mungu Jakisa	14	7	21
Pakwach	Panyimur	Mungu Timo	15	5	20
Nebbi	Atego	Dikiri Ber	10	13	23
Nebbi	Paminya	Mugisa Oloyo Ryeku	14	11	25
Nebbi	Erussi	Mungungeyo	15	10	25
Nebbi	Erussi	Jupugeta Upper	9	9	18
<b>Total</b>	<b>6</b>	<b>12</b>	<b>16</b>	<b>211</b>	<b>341</b>

### Annex 4b: List of persons interviewed

District	Name	Position	Contact
Zombo	1. Ngageno Isaac	District Engineer	0782254850
Zombo	2. Odeba Nicholas	District Education Officer	0776658332
Zombo	3. Dr. Kumakech Walter	District Production Officer	0782705551
Zombo	4. Aneniu Patrick	District Agricultural Officer	0777414951
Zombo	5. Bramali MacBonny	District Health Officer	0782692425
Agago	6. Obali Charles	Ag. District Engineer	0789751153
Agago	7. Eraku Hellen	District Health Officer	0772538102
Omoro	8. Odoch Patrick	District Engineer	0777360012
Omoro	9. Angala Lilian	DINU FPO	0772424302
Omoro	10. Ochieng Vincent	District Education Officer	0772534019
Amuru	11. Kumakech Simon Peter	Senior Agricultural Officer	0782635203
Pakwach	12. Ocakacon Geoffrey Avola	District Engineer	0772198914
Pakwach	13. Oweknimungu Benedicto	District Water Officer	0774871841
Pakwach	14. Oloya Micheal	DINU FPO	0773363313
Pakwach	15. Odongker Maxwel	District Inspector of Schools	0771263505
Nebbi	16. Okecha Jean Andrew	District Engineer	0782342219

Annex 5: Annual Income Analysis Sheet

Enterprises	Zombo		Nebbi				Pakwach		Amuru		Omoro		Agago			
	FG1	FG2	FG1	FG2	FG3	FG4	FG1	FG2	FG1	FG2	FG1	FG2	FG1	FG2	FG3	FG4
Cash and food crop Income																
	Coffee	790,500	-	-	273,500	714,600	-	-	-	-	-	-	-	-	-	-
	Cotton	-	-	584,400	-	-	-	1,288,500	-	906,000	-	-	-	-	-	32,000
	Sesame	-	-	750,500	118,000	-	-	-	15,200	-	129,200	-	-	-	-	-
	Beans	612,500	2,024,000	332,500	-	26,000	-	-	222,600	86,000	476,000	-	383,600	-	129,000	1,410,000
Pigeon peas	Soy beans	-	-	243,000	-	-	-	952,000	-	63,000	-	1,156,400	34,000	-	4,301,000	
	Pigeon peas	-	-	-	-	-	-	-	279,600	392,000	-	174,800	-	320,000	324,444	
	Rice	-	-	112,000	-	-	-	-	-	15,000	-	-	-	-	-	-
	G/nuts	-	-	80,500	297,000	32,000	-	562,000	705,000	510,000	-	276,400	980,800	193,000	2,160,000	656,000
	Vegetables	-	776,000	24,000	879,000	-	-	430,000	-	-	-	-	-	-	-	-
Cassava	Sunflower	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cassava	134,500	484,000	340,500	85,000	407,000	-	468,000	515,000	980,000	-	912,500	918,000	-	1,332,000	
	Sorghum	-	-	-	-	-	-	38,000	51,000	562,000	364,600	240,000	-	220,800	-	-
	Millet	-	-	-	-	-	-	-	-	518,000	-	281,200	530,000	33,000	1,556,000	
	Sweet potato	651,000	-	462,400	-	-	-	-	242,400	-	-	61,000	-	-	-	-
Maize	Matooke	787,000	-	-	-	402,000	-	-	-	-	-	-	-	-	-	-
	Maize	258,000	-	-	233,000	-	-	14,000	-	18,000	113,000	211,600	40,000	24,000	1,424,000	
	Gram beans	-	-	-	-	-	-	-	70,000	-	108,000	376,200	-	-	-	-
	Livestock income	2,717,500	3,284,000	808,000	1,885,500	1,127,600	402,000	1,576,000	2,559,500	3,496,000	2,153,000	511,800	3,602,500	2,481,400	2,514,800	10,433,444
	Chicken	100,000	183,000	240,000	485,000	600,000	-	100,000	315,000	464,400	336,000	-	153,600	-	1,200,000	1,295,000
Other income sources	Goats	-	731,500	600,000	510,000	440,000	-	469,500	1,140,000	42,500	-	576,000	420,000	480,000	-	-
	Piggery	-	-	-	-	-	-	600,000	458,000	-	-	507,000	-	-	-	-
	Other income sources	100,000	914,500	840,000	995,000	1,040,000	-	1,169,500	4,280,000	506,900	336,000	-	1,236,600	-	1,620,000	1,775,000
	Brewing local alcohol	122,400	156,000	-	-	206,400	-	-	-	176,004	1,940,000	977,600	-	-	-	-
	Fuelwood sale	-	-	480,000	-	-	-	-	-	-	360,000	-	-	-	-	-
Petty trade	Thatching grass sale	-	-	1,008,000	-	-	-	-	-	-	-	-	-	-	-	-
	Fishing/fish mngtng	156,000	-	-	-	-	-	7,014,000	-	806,000	1,092,000	2,112,000	-	-	-	-
	Petty trade	240,000	-	-	-	-	-	2,550,000	-	234,000	-	84,500	-	-	-	-
	Sale of labor	180,000	300,000	180,000	300,000	240,000	240,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
	Charcoal burning	-	1,200,000	-	-	-	-	-	5,280,000	-	718,400	-	-	-	-	-
Total Income	453,600	1,344,000	1,668,000	300,000	33,600	240,000	9,804,000	5,756,004	600,000	3,448,000	300,000	2,496,500	300,000	300,000	300,000	300,000
	3,271,100	5,542,500	3,316,000	3,180,500	2,201,200	642,000	12,549,500	8,908,904	3,402,900	5,937,000	811,800	7,335,600	2,781,400	4,434,800	12,508,444	



Annex 6b: Food ration (Acholi sub-region)

RATION CONTENTS													
		Daily Ration		Energy	Protein	Fat	Calcium	Copper	Iodine	Iron	Magnesium	Selenium	Zinc
		g/person/day	kcal	g	g	g	mg	mg	µg	mg	mg	µg	mg
RICE, WHITE, MEDIUM GRAIN  MILLET FLOUR  SORGHUM FLOUR  CASSAVA, FERMENTED FLOUR (GARI)  POTATO, SWEET  GROUNDNUTS (PEANUTS), DRY  PIGEON PEAS (RED GRAM)  MILK, COW, WHOLE, NOT FORTIFIED  EGG, WHOLE, CHICKEN, FRESH  BEEF, MODERATELY FAT  LEAVES, MEDIUM GREEN, e.g. PUMPKIN  LEAVES, DARK GREEN, e.g. SPINACH  EGGPLANT (AUBERGINE)  ORANGE, RAW  MANGO  OIL, VEGETABLE [WFP]  Silver fish (mukene)	70	252	4.6	0.4	6	0.1	-	0.6	25	-	-	0.8	
	80	298	8.6	3.4	11	0.4	-	3.2	95	26.2	2.1		
	100	361	7.9	3.3	12	0.2	-	3.0	120	12.2	1.4		
	250	895	3.3	1.3	93	3.5	-	7.8	-	-	3.8		
	100	86	1.6	0.1	30	0.2	-	0.6	25	0.6	0.3		
	70	397	18.1	34.5	64	0.8	-	3.2	118	5.0	2.3		
	80	274	17.4	1.2	104	0.8	-	4.2	146	6.6	2.2		
	50	31	1.6	1.6	57	0.0	-	0.0	5	1.9	0.2		
	50	72	6.3	4.8	28	0.0	-	0.9	6	15.4	0.6		
	50	117	9.3	8.6	4	0.0	-	1.0	10	7.0	1.9		
	230	44	7.2	0.9	90	0.3	-	5.1	87	2.1	0.5		
	180	41	5.1	0.7	178	0.2	-	4.9	142	1.8	1.0		
	180	45	1.8	0.3	16	0.1	-	0.4	25	0.5	0.3		
	100	63	1.3	0.3	70	0.1	-	0.8	14	0.7	0.1		
	100	60	0.8	0.4	11	0.1	-	0.2	10	0.6	0.1		
	30	265	0.0	30.0	0	-	-	0.0	-	-	-		
	100	80	10.0	6.0	770.0	-	-	10.0	0.0	0.0	6.3		
	Ration totals:												
Beneficiary requirements for Whole Population													
% of requirements supplied by ration:													
% of energy supplied by protein or fat:													
Ration Name: Acholi Ration 1													
Date: 22/08/2021													
Mineral Bar Chart													
Mineral Radar Plot													
Save Ration													
Load/Delete													
Export Data													

## Annex 7: Annual housing costs

West Nile										
Housing	FG1	FG2	FG3	FG4	FG5	FG6	FG7	FG8	Total	
Rental Equivalent	166,667	166,667	166,667	166,667	166,667	166,667	166,667	166,667	166,667	166,667
Water bills	36,000	12,000	6,000	12,000	6,000	5,200	24,000	12,000	14,150	
Paraffin lighting	52,000	83,200	624,000		26,000				98,150	
Solar lighting				300,000		13,333	96,000	60,000	58,667	
Fuelwood for cooking	260,000	520,000	728,000	360,000	520,000	520,000	312,000	312,000	441,500	
<b>Total</b>	<b>514,667</b>	<b>781,867</b>	<b>1,524,667</b>	<b>838,667</b>	<b>718,667</b>	<b>705,200</b>	<b>598,667</b>	<b>550,667</b>	<b>779,133</b>	
Acholi										
Rental Equivalent	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Water bills	12,000	12,000	24,000	18,000	75,000	26,000	12,000	18,000	24,625	
Paraffin lighting		130,000		52,000		78,000	52,000		39,000	
Solar lighting	60,000		18,500		15,167			100,000	24,208	
Fuelwood for cooking	520,000	780,000	182,000	364,000	208,000	312,000	416,000	520,000	412,750	
<b>Total</b>	<b>842,000</b>	<b>1,172,000</b>	<b>474,500</b>	<b>684,000</b>	<b>548,167</b>	<b>666,000</b>	<b>730,000</b>	<b>888,000</b>	<b>750,583</b>	
Furniture and appliances										
West Nile										
Beds	1,333	1,333	2,667	2,000	5,000	2,000	1,875	2,000	2,276	
Mattresses	6,000	6,000	3000	3,000	4,500	3,500	15,000	15,000	7,000	
Chairs and tables	30,000	6,000	4,200	5,000	14,583	13,958	2,000	8,125	10,483	
Cupboards	2,500	8,000	1,500	5,667	1,000	6,667	2,763	19,667	5,970	
Utensils	24,000	30,000	28,000	35,000	40,000	50,000	37,000	32,000	34,500	
<b>Total</b>	<b>63,833</b>	<b>51,333</b>	<b>39,367</b>	<b>50,667</b>	<b>65,083</b>	<b>76,125</b>	<b>58,638</b>	<b>76,792</b>	<b>60,230</b>	
Acholi										
Beds	2,000	2,000	1,200	1,800	12,000	10,667	10,000	8,667	6,042	
Mattresses	10,000	10,000	4,500	6,000	24,000	4,000	6,000	8,000	9,063	
Chairs and tables	8,125	8,125	2,100	15,000	2,750	16,000	11,500	13,500	9,638	
Cupboards	4,111	1,111	8,000	9,000	4,000	34,833	5,000	7,500	9,194	
Utensils	35,000	40,000	32,000	35,000	45,000	50,000	40,000	38,000	39,375	
<b>Total</b>	<b>59,236</b>	<b>61,236</b>	<b>47,800</b>	<b>66,800</b>	<b>87,750</b>	<b>115,500</b>	<b>72,500</b>	<b>75,667</b>	<b>73,311</b>	

Annex 8a: Annual education cost (West Nile sub-region)

Education (Nursery)- West Nile Sub region											
	1	1	1	1	1	1	1	4	1.00	Cost for 1 children per term	Cost for 1 children per year
Number of children											
Registration			1,667	1000	1,667			4,333	1,444	1,444	4,333
Fees/tuition	35,000		70,000	15,000	60,000			180,000	45,000	45,000	135,000
Uniform (with socks, sweater)	11,333		19,334	6,000	19,333			56,000	14,000	14,000	42,000
Sports wear								-	-	-	-
Bag			3,333		5000			8,333	4,167	4,167	12,500
Feeding (food, grinding, sugar)	9,500		23,000	12,000	30,500			75,000	18,750	18,750	56,250
Books, pens, color pencils, files, rubber, report card	4,400		13,600	1,400	7,500			26,900	6,725	6,725	20,175
Medication	6,000							6,000	6,000	6,000	18,000
Soap, Toilet paper	2,000		1,000		6000			9,000	3,000	3,000	9,000
PTA	2,000							2,000	2,000	2,000	6,000
Shoes								-	-	-	-
Exams	5,000			2,000	5,000			12,000	4,000	4,000	12,000
Coaching								-	-	-	-
Broom			1000		1000			2,000	1,000	1,000	3,000
Chair			4,000					4,000	4,000	4,000	12,000
Plates, Cup, cutlery								-	-	-	-
Trips			20,000					20,000	20,000	20,000	60,000
Development fund								-	-	-	-
Foundation body								-	-	-	-
								130,086	130,086	130,086	390,258

Primary Education												
Number of children												
Registration	1,000	2	1,667	1	2	1,667	1	1000	2,000	1	1,500	Cost for 1 child per year
Fess/tuition	5,000										1,500	4,500
Uniform			38,000								19,056	57,167
Books, pens pencil sets, report card			22,000	9,000				24,837	20,000		20,215	60,645
Shoes			17,500	8,668				15,000	20,400		15,738	47,214
PTA	5,000										5,000	15,000
Dev't Fund	1,000		1,000	5,000				3,000	10,000		3,286	9,857
Foundation body	3,000		7,000	5,000					7,500		5,500	16,500
Exams	1,000		3,000	5,000							2,600	7,800
Coaching	2,000		2,000	10,000				3,000	12,000		4,625	13,875
Feeding	3,000		25,000	5,000				15,000	5,000		13,286	39,857
Pads	2,500								47,500		25,500	76,500
Toilet paper, brooms	1,000										2,500	7,500
Medical fee									3000		2,000	6,000
Decima									10,000		10,000	30,000
									2,000		2,000	6,000
											132,805	398,415
Secondary education												
Number of children												
Fess/tuition, registration	130,000	1	228,000	1	1	90,000	1	400,000			245,500	736,500
Uniform	10,334		43,167	23,750	43,167	14,000		100,000			39,070	117,209
Meals	56,500		50,000								53,250	159,750
Books, pens, set Bible, Dictionary	12,000		88,668	18,000		38,000	70,000				45,334	136,001
Dev't Fund				50,000		7,000					28,500	85,500
Foundation body			10,000			3,000					6,500	19,500
Medical								20,000			20,000	60,000
Coaching			11,667								11,667	35,001
Calculator								25,000			25,000	75,000
Cement, hoes, panga, brooms, paints	45,000			32,500				37,000			38,167	114,500
Broom				1,500							1,500	4,500
Ream			10,000					20,000			16,000	48,000
Personal requirements	3,000			365,000				280,000			216,000	648,000
Pocket money				30,000				30,000			30,000	90,000
											776,487	2,329,461

**Annex 8b: Annual Education cost (Acholi sub-region)**

Education (Nursery) - Acholi sub region															
	2	2	2	2	2	1	1	1	1	1	2	11	2,00	Cost for 2 children per term	Cost for 2 children per year
Number of children															
Registration	3,000	8,334	20,000	15,000	20,000	20,000	20,000	20,000	20,000	20,000	20,834	20,834	2,976	5,953	17,858
Fees/tuition	12,333	16,667	11,667	16,667	15,667	20,000	30,000	30,000	30,000	35,000	139,000	139,000	19,867	39,714	119,143
Uniform (with socks, sweater)	10,000	6,667	22,000	5,000	20,000	6,667	20,000	20,000	20,000	25,000	108,667	108,667	15,524	31,048	93,143
Sports wear											6,667	6,667	3,334	6,667	20,001
Bag											3,334	7,334	3,667	7,334	22,002
Feeding	44,900	30,000	24,000	35,500	24,000					47,000	205,400	205,400	34,233	68,467	205,400
Books, pens, color pencils, files, rubber, report card	3,000	4,500	6,000	4,400	8,000	3,000	6,534	1,000		11,000	43,434	43,434	6,205	12,410	37,229
Medication		6,000					1,000				10,000	10,000	3,333	6,667	20,000
Soap, Toilet paper			1,500	3,000	2,000		1,500			3,500	9,500	9,500	2,375	4,750	14,250
PTA			2,000							5,750	7,750	7,750	3,875	7,750	23,250
Shoes											7,500	7,500	7,500	15,000	45,000
Exams			2,000		2,000						4,000	4,000	2,000	4,000	12,000
Coaching			33,000								33,000	33,000	4,714	9,429	28,286
Broom	1000		5,000	1000						3,750	10,750	10,750	2,688	5,375	16,125
Chair	1,700						3334				5,034	5,034	2,517	5,034	15,102
Plates, Cup, cutlerrries	334				1500		1000			1500	4,334	4,334	1,084	2,167	6,501
Development fund			8,000							2,000	10,000	10,000	5,000	10,000	30,000
Foundation body			1,000				5,000				6,000	6,000	3,000	6,000	18,000
											6,000	6,000	3,000	6,000	18,000
													123,882	247,763	743,290
														-	-
Primary Education															
Number of children	2	1	1	2	1	1	1	1	1	1	1	9	1,00	Cost for 1 child per term	Cost for 1 child per year
Registration	1,000	1,667	2,000	1,000	70,000		1,000	25,000	25,000	10,000	7,667	7,667	1,278	1,278	3,833
Fees/tuition											95,000	95,000	31,667	31,667	95,000
Uniform	5,000	10,000	27,000	15,000	25,000		27,500	8,000	8,000	10,000	119,500	119,500	17,071	17,071	51,214
Books, pens pencil sets	11,834	10,700	16,500	9,700	14,000					7,834	78,568	78,568	11,224	11,224	33,672
Shoes	5,000	10,000	6,667								21,667	21,667	7,222	7,222	21,667
PTA	1,000	35,000	20,000							1,000	57,000	57,000	14,250	14,250	42,750
Dev't Fund	3,000									3,000	6,000	6,000	2,000	2,000	6,000
Foundation body	1,000		2,000	1,000						1,000	5,000	5,000	1,250	1,250	3,750
Exams	2,000	3,000	3,000	2,000						2,000	12,000	12,000	2,400	2,400	7,200
Coaching	3,000	10,000	10,000	2,000						3,000	28,000	28,000	5,600	5,600	16,800
Feeding	20000	26,600	9,000				65,500			20000	141,100	141,100	28,220	28,220	84,660
Pads	2000									2000	4,000	4,000	2,000	2,000	6,000
Toilet paper	1,000									1,000	2,000	2,000	1,000	1,000	3,000
Medical fee			5,000								5,000	5,000	5,000	5,000	15,000
Decima		1,000									1,000	1,000	1,000	1,000	3,000
													131,182	131,182	393,546

[illegible]

Annex 9: Annual Medical costs

Common type of sicknesses	No. of person sick	Acholli Sub-region	Where they sought treatment, why?	Freq. sickness	Medical Book/Form	Lab tests	Medicine	Others	Total cost /month	Total cost /Year
Malaria	2	HC3		2	300				1,200	14,400
Malaria	4	HC3		6	300	500	4800	12000	422,400	5,068,800
Malaria	4	HC3		2	1,200		36,000	6,000	345,600	4,147,200
Malaria	6	HCII		2	300		7,500		93,600	1,123,200
Cough/ flu	5	HCII		2	300		10,300		106,000	1,272,000
Malaria	2	HC3		2	300		4,500	32,000	147,200	1,766,400
Malaria	6	HCII		3	300		4,800		91,800	1,101,600
Cough/ flu	6	HCII		1	300		7,000		43,800	525,600
Diarrhoea	2	HCII		2	300		10,000		41,200	494,400
Malaria	3	HC3		2	300	3,000	30,000		199,800	2,397,600
Malaria	3	HC2		3	300	2,000			20,700	248,400
Cough	1	HC2		2	300				600	7,200
Total	44		-	29	4,500	5,500	114,900	50,000	1,513,900	18,166,800
<b>Average</b>	<b>6</b>		<b>-</b>	<b>4</b>	<b>563</b>	<b>688</b>	<b>14,363</b>	<b>6,250</b>	<b>189,238</b>	<b>2,270,850</b>
		West Nile Sub-region								
Malaria	2	HC3		2	300	4,800	1,800		27,600	331,200
Malaria	2	HC2		1	400		10,000	3,000	26,800	321,600
Diarrhoea	1	HC3		1		5,000		25,000	30,000	360,000
Malaria	2	HC3		2		7,500	15,000	70,000	370,000	4,440,000
Malaria	2	Clinic		4	300		50,000		402,400	4,828,800
Malaria	2	HC3		1		10,000	42,000	32,000	168,000	2,016,000
Malaria	2	Clinic		3	200		4,000		25,200	302,400
Malaria	1	HC3		1	200		6,000	1,500	7,700	92,400
Malaria	2	HC4		1	200		10,000		20,400	244,800
Malaria	1	HC3		2	500		5,000		11,000	132,000
Total	17		-	18	2,100	27,300	143,800	131,500	1,089,100	13,069,200
<b>Average</b>	<b>2</b>		<b>-</b>	<b>2</b>	<b>263</b>	<b>3,413</b>	<b>17,975</b>	<b>16,438</b>	<b>136,138</b>	<b>1,633,650</b>
<b>Overall Total</b>	<b>4</b>		<b>-</b>	<b>3</b>	<b>413</b>	<b>2,050</b>	<b>16,169</b>	<b>11,344</b>	<b>162,688</b>	<b>1,952,250</b>

## Annex 10: Annual transport and communication costs

Transport - West Nile									
Place frequently traveled to	FG1	FG2	FG3	FG4	FG5	FG6	FG7	FG8	Average Annual Cost
Market	832,000	208,000	416,000	520,000	624,000	312,000	312,000	520,000	468,000
Health units	60,000	416,000	416,000	10,000	1,560,000	72,000	144,000	480,000	394,750
Schools	30,000	-	-	-	270,000	-	-	120,000	140,000
Visiting relatives	24,000	20,000	48,000	50,000	38,000	40,000	36,000	15,000	33,875
Burial	90,000	64,000	50,000	40,000	40,000	50,000	52,000	70,000	57,000
Football	120,000	200,000	100,000	80,000	90,000	75,000	110,000	180,000	119,375
<b>Total</b>	<b>1,156,000</b>	<b>908,000</b>	<b>1,030,000</b>	<b>700,000</b>	<b>2,622,000</b>	<b>549,000</b>	<b>654,000</b>	<b>1,385,000</b>	<b>1,125,500</b>
Communication - West Nile									
	FG1	FG2	FG3	FG4	FG5	FG6	FG7	FG8	Average Annual Cost
Cost of mobile phone	19,333	19,333	40,000	17,500	40,000	10,000	15,000	15,000	22,021
Cost of radio	8,500	8,500	6,250	6,250	6,250	-	8,333	8,333	7,488
Airtime	86,400	260,000	360,000	360,000	1,560,000	360,000	360,000	260,000	450,800
Charging fee	336,000	46,800	21,600	288,000	104,000	52,000	104,000	520,000	184,050
Battery	248,000	104,000	31,200	31,200	156,000	-	156,000	130,000	122,343
<b>Total</b>	<b>698,233</b>	<b>438,633</b>	<b>459,050</b>	<b>702,950</b>	<b>1,866,250</b>	<b>422,000</b>	<b>643,333</b>	<b>933,333</b>	<b>770,473</b>

Transport - Acholi									
<b>Place frequently traveled to</b>	<b>FG1</b>	<b>FG2</b>	<b>FG3</b>	<b>FG4</b>	<b>FG5</b>	<b>FG6</b>	<b>FG7</b>	<b>FG8</b>	<b>Average Annual Cost</b>
Market	1,632,000	312,000	768,000	192,000	480,000	480,000	240,000	416,000	565,000
Health units	960,000	288,000	408,000	540,000	288,000	240,000	120,000	936,000	472,500
Schools	-	-	-	360,000	-	600,000	600,000	120,000	420,000
Visiting relatives	20,000	30,000	40,000	50,000	15,000	25,000	40,000	30,000	31,250
Burial	50,000	50,000	50,000	40,000	40,000	50,000	30,000	60,000	46,250
Football shows	100,000	120,000	110,000	90,000	95,000	90,000	100,000	100,000	100,625
<b>Total</b>	<b>2,762,000</b>	<b>800,000</b>	<b>1,376,000</b>	<b>1,272,000</b>	<b>918,000</b>	<b>1,485,000</b>	<b>1,130,000</b>	<b>1,662,000</b>	<b>1,635,625</b>
Communication - Acholi									
<b>Cost centres</b>	<b>FG1</b>	<b>FG2</b>	<b>FG3</b>	<b>FG4</b>	<b>FG5</b>	<b>FG6</b>	<b>FG7</b>	<b>FG8</b>	<b>Average Annual Cost</b>
Cost of mobile phone	11,250	11,667	22,000	22,000	35,000	35,000	35,000	35,000	25,865
Cost of radio	35,000	30,000	30,000	30,000	38,000	38,000	38,000	38,000	34,625
Airtime	1,560,000	180,000	720,000	260,000	360,000	247,000	247,000	260,000	479,250
Charging fee	208,000	576,000	208,000	104,000	208,000	104,000	104,000	52,000	195,500
Battery	86,667	86,667	86,667	86,667	86,667	69,333	69,333	69,333	80,167
<b>Total</b>	<b>1,900,917</b>	<b>884,334</b>	<b>1,066,667</b>	<b>502,667</b>	<b>727,667</b>	<b>493,333</b>	<b>493,333</b>	<b>454,333</b>	<b>815,406</b>



## Annex 12: Recreation and culture

Recreation and Culture - West Nile										
Typical Events Make Contributions to	FG1	FG2	FG3	FG4	FG5	FG6	FG7	FG8	Average Annual Cost	
1. Burials	120,000	24,000	288,000	120,000	60,000	100,000	180,000	72,000	120,500	
2. Religious contribution	10,300	78,000	225,000	60,000	10,400	26,000	122,400	104,000	79,513	
3. Marriages/Celebrations	40,000	180,000	52,000	24,000	180,000	30,000	240,000	480,000	153,250	
4. Beverages		536,640	78,000		104,000			208,000	231,660	
5. Football leagues	60,000	50,000	20,000	70,000	60,000	65,000	60,000	45,000	53,750	
6. Others (gifts)					52,000		150,000	145,000	115,667	
Total	230,300	868,640	663,000	274,000	466,400	221,000	752,400	1,054,000	566,218	
Recreation and Culture - Acholi										
Typical Events Make Contributions to	FG1	FG2	FG3	FG4	FG5	FG6	FG7	FG8	Average Annual Cost	
1. Burials	24,000	24,000	144,000	50,000	50,000	20,000	100,000	100,000	64,000	
2. Religious contribution	52,000	52,000	624,000	26,000	52,000	78,000	48,000	52,000	123,000	
3. Marriages/Celebrations	24,000	24,000	144,000	108,000	120,000	24,000	100,000	100,000	80,500	
4. Beverages	104,000	104,000	104,000	104,000	104,000	104,000	104,000	104,000	104,000	
5. Football leagues	80,000	80,000	70,000	70,000	80,000	65,000	60,000	45,000	68,750	
6. Others (gifts)					60,000			45,000	52,500	
Total	284,000	284,000	1,086,000	358,000	466,000	291,000	412,000	446,000	453,375	

## Annex 13: ALENU value added enterprise analysis

Note: This was based on the participatory exercises the trainers conducted with peer trainers

### Gross Margin Analysis for Irish potato

Total field area (acre):		1	Total yield (100 Kg bag):		48
A. Production costs (input)					
Tasks	Materials	Quantity	Unit cost (Ushs)		Total (Ushs)
DLS construction	Timber off-cuts, nails, poles, grass, reeds, sisal strings, insect proof net	1	4,147,500		4,147,500
Requirements	Seed	48	40,000		1,920,000
	Storage inorganic pesticides	3	5,000		5,000
	Slashers	2	7,000		14,000
	Sharpener	1	7,000		7,000
	Hand hoe	5	12,000		60,000
	Spray pump	4	150,000		600,000
	Forked hoe/Rake	1	12,000		12,000
	Panga	1	6,000		6,000
	Baskets	10	4,000		40,000
	Jute bags	10	15,000		150,000
	Labor (Person-days)				
	Slashing	1	20,000		20,000
	First ploughing	1	120,000		120,000
	Harrowing	1	60,000		60,000
	Compost/Manure application	1	80,000		80,000
	Ridging	1	80,000		80,000
	Planting	1	40,000		40,000
	Pegging selected plants	1	40,000		40,000
	Weeding/ Hilling up 1	3	80,000		240,000
	Spraying 1	3	8,000		24,000
	Dehauling	1	40,000		40,000
	Harvesting and transport to store	1	80,000		80,000
Total production costs (a)					6,105,500
	B. Income (output)				
	Sales		48	250,000	12,000,000
Gross margin (b - a)					5,894,500

**Gross margin analysis of Groundnuts**

S/N	INPUT	QTY	UNIT	UNIT RATE	AMOUNT
<b>Field Establishment</b>					
01	Seeds	2	Bags	180,000	360,000
02	Primary cultivation	1	Acre	80,000	80,000
03	Secondary cultivation	1	Acre	80,000	80,000
04	Planting	1	Acre	80,000	80,000
<b>SUB-TOTAL</b>					<b>600,000</b>
<b>Field Management</b>					
05	Weeding (twice)	2	Acre	80,000	160,000
06	Knapsack sprayer pump	1	Acre	80,000	80,000
<b>SUB-TOTAL</b>					<b>240,000</b>
<b>Harvest and Post-harvest management</b>					
07	Uprooting	1	Acre	50,000	50,000
08	Plucking of pods	240	Basins	1,000	240,000
09	Transport to the store	40	Bags	1,000	40,000
10	Storage bags	40	Bags	1,000	40,000
	<b>SUB-TOTAL</b>				<b>370,000</b>
	<b>GRAND TOTAL</b>				<b>1,210,000</b>
	Sales	40	Bags	180,000	7,200,000
	Gross margin				<b>5,990,000</b>

**Gross margin analysis of Beans**

	Unit	Cost/ Unit	No of Units	UGX
Gross Income				
Sale of Beans	kg	500	3,000	1,500,000
		Total	Gross Income	1,500,000
VARIABLE CASH COST				
1. Inputs				
Land Hire	Acre	60,000	1	60,000
Seed (Home saved)	kg	2,000	15	30,000
Bags	Bags	1,000	5	5,000
Tarpaulins (depreciated over 8 seasons)	unit	40,000	2	10,000
Transport of beans to market	Lumpsum	2,000	5	10,000
			Subtotal	115,000
2. Hired labour				
Land clearance	md	5,000	5	25,000
Land preparation/ploughing	md	5,000	5	25,000
Planting	md	5,000	4	20,000
Weeding/field management	md	5,000	20	100,000
Harvesting	md	5,000	5	25,000
Threshing	md	5,000	3	15,000
Drying	md	5,000	2	10,000
Storage	md	5,000	1	5,000
Transport from field to home	md	5,000	4	20,000
Other post harvest handling	md	5,000	1	5,000
Sub-total Hired Labour			50	250,000
TOTAL VARIABLE CASH COST				365,000
Total Gross Margin per Acre				1,135,000

**Gross margin analysis for onion crop**

Total field area (acre):	1		
Total yield (kg):	6660 Kgs		
	Quantity	Unit cost (Ushs)	Total (Ushs)
A. Production costs (input)			
Materials			
Seed	1 kg( 4 tins of 250 g)	85,000	340,000
Watering can	4 pieces	12,000	48,000
Spray pump	1 piece	110,000	110,000
Harvesting buckets	5 pieces	10,000	50,000
Packaging nets/ sacs	20 pieces	1500	30,000
Papyrus mats	20 pieces	5000	100,000
<b>Total material costs</b>			<b>678,000</b>
Labor (Person-days)			
Primary cultivation	1 acre	80,000	80,000
Secondary cultivation	1 acre	60,000	60,000
Nursery management	5 beds	30,000	150,000
Transplanting	5 people	20,000	100,000
Weeding/ Hilling up 1	5 people	30,000	150,000
Weeding/ Hilling up 2	4 people	30,000	120,000
Weeding/Hilling up 3	4 people	20,000	100,000
Harvesting	4 people	30,000	120,000
Transport	Trips	40,000	40,000
Total production costs (a)			920,000
B. Income (output)			
Sales			9,990,000
Total income (b)			1,598,000
Gross margin (b - a)			8,392,000

**Gross margin analysis for apiary (5 KTB Colonized Hives)**

Cost Estimate (Ugx) Per Year	Projected Sales (Ugx) Per Year
Hives 5 X Sh150,000 = Sh750,000	Honey 10 Kg X 5 hives = 50kg/season
Hanging wires (7m) 7 X Sh2,000 = Sh14,000	50 X Sh20,000 X 2 season = Sh2,000,000
Bee kit = Sh 400,000	Bees wax 10% of 50kg 5kg X Sh15,000 X 2 season = Sh150,000
Used oil 1ltr X Sh2,000 = Sh2,000	Propolis = 0.25kg X Sh20,000 X 2 season = Sh10,000
Labour Sh30,000	
<b>Total cost = Sh 1,196,000</b>	<b>Sales = Sh 2,160,000</b>
<b>Net season 1 = 2,160,000 – 1,196,000 = 964,000</b>	<b>Net season 2 = 2,160,000 – 32,000 = 2,128,000</b>
<b>Total. = 3,092,000</b>	

**Gross margin analysis for Soy beans**

	Unit	Cost/ Unit	No of Units	UGX
Gross Income				
Sale of Beans	kg	500	2,500	1,250,000
	Total Gross Income			1,250,000
VARIABLE CASH COST				
1. Inputs				
Land Hire	Acre	60,000	1	60,000
Seed	kg	3,000	20	60,000
Rhizobim inoculum	Sachet	5,000	1	5,000
Bags	Bags	1,000	5	5,000
Tarpaulins (depreciated over 8 seasons)	unit	40,000	1	5,000
Transport of beans to market	Lumpsum	2,000	5	10,000
	Subtotal			145,000
2. Hired labour				
Land clearance	md	5,000	5	25,000
Land preparation/ploughing	md	5,000	5	25,000
Planting	md	5,000	4	20,000
Weeding/field management	md	5,000	5	25,000
Harvesting	md	5,000	5	25,000
Threshing	md	5,000	3	15,000
Drying	md	5,000	2	10,000
Storage	md	5,000	1	5,000
Transport from field to home	md	5,000	4	20,000
Other post harvest handling	md	5,000	1	5,000
Sub-total Hired Labour			35	150,000
TOTAL VARIABLE CASH COST				320,000
Total Gross Margin per Acre				785,000

**Gross Margin analysis for local poultry**

This analysis is based on farmer having 5 hens and one cock at the start on free-range without much input. The start-off birds will be 37 offspring (without considering the grand-offsprings). With programmed hatching, the estimated number of offsprings without grand-offsprings is 175 as below.

Item	Common free-range system	Programmed hatching
Age at puberty	7-8 months	5-6 months
Average number of eggs laid	12 eggs (laid in 12-15days)	12 eggs (laid in 12-13 days)
Incubation period	21 days	21 days
Average chick rearing period	3 months	0 (self-brooding)
Weaning to start of lay	1 week	2-3 weeks
Average length of cycle of lay from first egg to start of next lay	4.5months	2 months
Average number of lay cycles per year	2.5 times	5 times
Average number of chicks hatched	10	10
Average number of pullets & cockerels weaned	3	7
With 5 hens and 1 cock, the number of weaned chicks per year	$3 \times 2.5 \times 5 = 37$	$7 \times 5 \times 5 = 175$

## Production targets for local poultry on programmed hatching

	Batches of eggs laid and hatched by 5 hens in a year				Amounts	Offshoot into the second year		
Production	Batch 1 (Start)	Batch 2 (4th Month)	Batch 3 (8th Month)	Batch 4 (12th Month)		Batch 5 (16th Month, Not computed in annual income)		
Parent stock (5 hens, 1 cock)		Parent stock	Batch 2 retention	Batch 3 retention		Batch 4 retention		
Eggs laid	60	60	120	120		240	240	480
Chicks hatched	50	50	100	100		200	200	400
Chicks survived	40	40	80	80		160	160	320
Total birds after first cycle	46	46	91	91		182	182	364
Retention	0	11	22	22		33	33	66
Sales	0	35	69	69		149	149	298
Total Sales				173	2,595,000			
Feeds	Batch 1	Batch 2	Batch 3	Batch 4	Qty	Rate		Amounts
Chick Marsh (Kgs)	75	75	150	150	450	950	427,500	
Growers' Marsh (Kgs)	27	90	117	117	351	800	280,800	
Adults (Kgs)	5	5	10	10	30	1000	30,000	
Sub Total							738,300	
Starting stock							100,000	
Vaccinations							156,000	
Drugs/Chemicals							156,000	
<b>Total Investment</b>								<b>1,150,300</b>
<b>Net Returns</b>								<b>1,444,700</b>

*Assumptions: Average egg laid per hen in a clutch is 12, hatchability is 83%, a conservative survival rate at 80% with artificial brooding. In commercial layers, mortality up to 12% at off-lay (i.e. 88% survival rate) is considered acceptable loss without significant economic loss.*

Annex 14a: Regional living income gap

Cost of living	West Nile	Acholi	Total	US\$	% share
<b>A: Food</b>	9,536,472	9,901,937	9,719,204	2,663	45.9%
<b>B: Housing</b>				-	
Rental equivalent	166,667	250,000	208,333	57	1.0%
Water bill equivalent	14,150	24,625	19,388	5	0.1%
Paraffin for lighting	98,150	39,000	68,575	19	0.3%
Solar lighting	58,667	24,208	41,438	11	0.2%
Fuelwood for cooking	441,500	412,750	427,125	117	2.0%
<b>C: Other essential costs</b>					
Health	1,633,650	2,270,850	1,952,250	535	9.2%
Education	3,118,134	3,901,903	3,510,019	962	16.6%
Public transport	1,213,000	1,635,625	1,424,313	390	6.7%
Communication	786,702	815,406	801,054	219	3.8%
Clothing and footwear	395,979	608,004	501,992	138	2.4%
Furniture and appliances	60,230	73,311	66,770	18	0.3%
Recreation & culture	566,218	453,375	509,796	140	2.4%
<b>D: Cost for Emergencies</b>	1,808,952	2,041,099	1,925,026	527	9.1%
<b>Total Annual Living Income</b>	<b>19,898,470</b>	<b>22,452,094</b>	<b>21,175,282</b>	<b>5,801</b>	<b>100%</b>
<b>Total Monthly Living Income</b>	<b>1,658,206</b>	<b>1,871,008</b>	<b>1,764,607</b>	<b>483</b>	
<b>Net Household Income</b>	<b>11,942,763</b>	<b>12,011,886</b>	<b>13,748,775</b>	<b>3,767</b>	
<b>Annual Annual Living Income Gap</b>	<b>(7,955,706)</b>	<b>(10,440,208)</b>	<b>(7,426,507)</b>	<b>(2,035)</b>	
<b>Monthly Living Income Gap</b>	<b>(662,976)</b>	<b>(870,017)</b>	<b>(618,876)</b>	<b>(170)</b>	
<b>Annual Annual Living Income Gap (%)</b>	<b>-40%</b>	<b>-46%</b>	<b>-35%</b>		

Annex 14b: Commodity-base living income gap

Cost of living	Irish potato	Onion	Poultry	G-nut	Soy beans	Apiary	Beans
<b>A: Food</b>	9,536,472	9,536,472	9,536,472	9,901,937	9,901,937	9,719,204	9,719,204
<b>B: Housing</b>							
Rental equivalent	166,667	166,667	166,667	250,000	250,000	250,000	250,000
Water bill equivalent	14,150	14,150	14,150	24,625	24,625	24,625	24,625
Paraffin for lighting	98,150	98,150	98,150	39,000	39,000	39,000	39,000
Solar lighting	58,667	58,667	58,667	24,208	24,208	24,208	24,208
Fuelwood for cooking	441,500	441,500	441,500	412,750	412,750	412,750	412,750
<b>C: Other essential costs</b>							
Health	1,633,650	1,633,650	1,633,650	2,270,850	2,270,850	2,270,850	2,270,850
Education	3,118,134	3,118,134	3,118,134	3,901,903	3,901,903	3,901,903	3,901,903
Public transport	1,213,000	1,213,000	1,213,000	1,635,625	1,635,625	1,635,625	1,635,625
Communication	786,702	786,702	786,702	815,406	815,406	815,406	815,406
Clothing and footwear	395,979	395,979	395,979	608,004	608,004	608,004	608,004
Furniture and appliances	60,230	60,230	60,230	73,311	73,311	73,311	73,311
Recreation & culture	566,218	566,218	566,218	453,375	453,375	453,375	453,375
<b>D: Cost for Emergencies</b>	1,808,952	1,808,952	1,808,952	2,041,099	2,041,099	2,041,099	2,041,099
<b>Total Annual Living Income</b>	19,898,470	19,898,470	19,898,470	22,452,094	22,452,094	22,269,362	22,269,362
<b>Total Monthly Living Income</b>	1,658,206	1,658,206	1,658,206	1,871,008	1,871,008	1,855,780	1,855,780
<b>Net Household Income (UGX)</b>	9,407,467	5,064,001	10,942,149	9,578,408	7,353,075	9,452,675	7,747,600
<b>Annual Living Income Gap (UGX)</b>	(10,491,002)	(14,834,469)	(8,956,321)	(12,873,686)	(15,099,019)	(12,816,687)	(14,521,762)
<b>Monthly Living Income Gap (UGX)</b>	(874,250)	(1,236,206)	(746,360)	(1,072,807)	(1,258,252)	(1,068,057)	(1,210,147)
<b>Annual Annual Living Income Gap (%)</b>	-53%	-75%	-45%	-57%	-67%	-58%	-65%

Annex 15: Sample production and marketing cost

Crop Production and Marketing Cost					
Groundnuts		Soya Bean		Sunflower	
Activity	Cost	Activity	Cost	Activity	Cost
Digging	80,000	Digging		Digging	80,000
Second ploughing	40,000	Second ploughing		Second ploughing	40,000
Seeds	240000	Seeds		Seeds	100,000
Planting	100,000	Planting		Planting	100,000
Weeding	100,000	Weeding		Weeding	100,000
Unshelling	100,000	Harvesting		Harvesting	160,000
Harvesting	40,000	Transport		Winnowing	40,000
Winnowing	30,000	Drying		Sacks	30,000
Sacks	12,000	Winnowing		Boda	35,000
Boda	30,000	Sacks		Market due	6,000
Market due	20,000	Boda		Feeding	40,000
Feeding	5,000	Market dues			10,000
		Feeding			5,000
Total	797,000		746,000		493,600
Marketing costs	67,000		61,000		50,600
	8%		8%		10%
Sales revenue	1,132,300		1,343,500		597,733
Net income	335,300		597,500		104,133



