AFRICAN RURAL UNIVERSITY

FACULTY OF TECHNOLOGIES

FOR RURAL TRANSFORMATION

# FIELD ATTACHMENT 1 REPORT CONDUCTED AT WANAINCHI FARM FOUND IN KABOIJANA VILLAGE, BULYANGO PARISH, KITOBA SUBCOUNTY

HOIMA DISTRICT

BY

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## DECLARATION

I MUSHIMENTA MACKLINE declare that this field attachment two report is my original work and has never been submitted for any academic ward.

Sign.....

Date.....02/10/2024

Registration Number 21/ARU/BSSA/006

**APPROVAL**

We here by certify that this field attachment two report of Musiimenta Mackline that was conducted at Wanainch mixed farm, has been prepared under our guidance and supervision, and submitted with our approval as the student's supervisors.

Signature.....

Date.26/10/2024

Name. Mr. Kansiime Bosco

Field supervisor

Signature.....

Date.21/10/2024

Name. Mr. Kusiima Jackson

Faculty supervisor

# DEDICATION

This report is dedicated to my beloved sister Niwasasira Penelope, my daddy Mr. Muhangi Amon and all my brothers and sisters for the encouragement always given to me. Special dedication goes to African Rural University and the director of Wanainch mixed farm for the unconditional support provided to make me reach this level.

# ACKNOWLEDGMENT

I acknowledge the management and administration of African Rural University for financial and material support extended to me during my stay at Wanainch mixed farm. I also wish to extend my acknowledgement to the proprietor of Wanainch mixed farm Mr. Bosco Kansiime for accepting me to carry out my field attachment at the farm and guiding me throughout my stay at the farm

More thanks goes to Mr. Kusima Jackson my field supervisor for the practical support provided to me as for learning were concerned.

## LIST OF ABREVIONS

| | |
|---|---|
| ARU | African Rural University |
| BSSA | Bachelors of Science in Sustainable Agriculture |
| CAP | Community Action Planning |
| CR | Current reality |
| Fig. | Figure |
| PAR | Participatory Action Research |
| ST | Structural Tension |
| STC | Structural Tension Chart |
| URDT | Uganda Rural Development Training program |
| VA | visionary approach |
| IPM | Integrated Management Practices |

Abstract.

This field attachment report provides an overview of a one-month field attachment report at Wanainch mixed farm encompassing an exploration of the organization, the roles and responsibilities of those involved in the field activities, and an analysis of the findings and observations. The report begins with an introduction to Wanainch Mixed Farm outlining the organization's background, vision, mission, objectives, target population, products/services, and sources of funding. Chapter 2 includes the management of the field attachment exercise, detailing the roles of participants, including the department of placement, field and academic supervisors, and the responsibilities of the student. Chapter 3 presents the activities done at the farm, highlighting the practical knowledge and skills acquired during the internship. It evaluates the relevance of academic theories to the fieldwork and assesses personal contributions to the organization, along with addressing challenges encountered during the internship and the strategies employed to overcome them. Chapter 4 concludes the report with a personal assessment of Wanainch Mixed Farm and the field attachment exercise, offering recommendations and conclusion for the way forward and this very chapter presents the appendices which include essential documents such as the letter of introduction, a time table/work plan, and relevant maps. This field attachment report aims to provide insights into the experiences, insights, and contributions made during the internship at Wanainch Mixed Farm

# CHAPTER ONE

# General introduction

## 1.0 Introduction

This chapter is concerned with the general Background of the Field Attachment; it covers the Background of ARU, the background of organization, the time of field attachment, the objectives of the organization, target population, products and services offered by the organization and sources of funding for the organization.

## 1.1 Background of ARU

African Rural University is an all-women's University that provides transformational education to create effective change agents within African development context. The University was founded by Uganda Rural Development and Training Programme (URDT), with the focus of providing women with the necessary knowledge, skills and experience to be effective rural transformation specialists. It applies theoretical learning; innovative instruction and field practice to enable graduates to create conditions for people to improve their lives and communities.

The University uplifts students' thinking and practices of rural transformation work in rural communities of Uganda and Africa at large, through Participatory Action Research (PAR). ARU's education curriculum applies theoretical learning (60%) and field practice (40%) respectively. Students are expected to stay in the rural communities while training the people, through developing mindsets so as to work towards achieving what they desire in their lives and that of their communities. The programme combines both science and humanities to enhance student's self-discovery, builds confidence and chains learning using systems thinking, principles of the creative process and sustainable development to foster rural development.

## 1.2 Background of field attachment.

At the end of second and third years of study, students who successfully complete four/six semesters are sent to the field; during which they are introduced to various firms/farms and organizations to learn practical skills in the modern agriculture technologies, extension work, program development and firm management at different levels. The learners are expected to apply the acquired knowledge in project related activities as they take part in all activities of the organization firms where they are attached.

Outreach will acquaint learners with interpersonal relationship with the farming communities and rural sociological principles and approaches.

Each student, guided by his or her supervisor, will identify a farm or farming homestead with a practical farming problem or challenge that the student will address in the course of the fieldwork. The student will spend a total of 150 hours at the farm or homestead, carrying out whatever practical work would have been jointly agreed upon by the student, the supervisor and the farm or homestead owner. The student will be jointly supervised by his or her university supervisor and the farm manager or homestead owner.

While working at the farm/homestead, the student will apply specific theoretical knowledge to the solution of the identified practical problem and his or her activities may include construction of farm structures, improvement of crop or livestock production methods, institution of post-harvest handling procedures and practices, value addition in the form of food processing, and any rational and sustainable interventions relevant to any aspect of the BSSA study programme. During the field case study/farming project, each student, under the guidance of his or her university supervisor, shall also be required to carry out community outreach work within the community. After the entire exercise, each student shall produce an examinable report on a topic that would have been approved by his or her university supervisor.

### 1.3 Objectives of field attachment.

- Develop skills in the application of theory to practical work situations.
- Test the students' aptitude for a particular career before permanent commitments are made.
- Develop skills and techniques directly applicable to their careers.
- Enable students acquire good work habits.
- Enable the student a systematic needs assessment of a farm and identify real life problems in the local farming communities;

- Acquaint the learner with skills and knowledge to devise a sustainable farming technology that will be disseminated for adoption by the local farmers to address their needs; and
- Equip the student with a hands-on practical farming to appreciate and transform theory into practice.

### 1.4 Background of the organization

The farm was started by Mr. Bosco Kansiime in 2013. The farm sits on over 10 acres of land with an acre dedicated to vegetable growing while the other land is used for banana growing dairy cows, goats and piggery.

Mr. Kansiime is the current director of the farm who identified investment opportunity in food and vegetable growing, and with the available land and savings he ventured into massive production after acquiring a tractor which greatly improved the quantity and quality of the produce.

This came as a result of low production which couldn't meet the market demand for food and vegetables in Hoima City.

### 1.5 Vision of the organization

To create a lasting impact in providing food security through practicing and training modern agricultural practices

### 1.6 Mission of the Organization

To provide the highest quality farm produce on the market while enabling other farmers to learn how to grow and produce onto the market

### 1.7 Objectives of the organization

- To create a lasting impact in providing food security
- To practice and train modern agriculture practices
- To provide the highest quality farm produce on market
- To enable farmers to learn how grow and produce for market.

## 1.8 Target population

The target population is characterized by rural/peri urban small holder farmers across all age groups and gender organized groups.

## 1.9 Products/ services offered by the organization

Wanainchi mixed farm produces variety of products and these include fresh vegetables for example Chinese cabbage, carrots cauliflower, tomatoes, kale, onions, and egg plants milk from cattle, banana, planting materials for banana, coffee, maize, beans, and among others.

It provides agricultural extension services to the community and also provide demonstration platform for other farmers

Wannaichi has created over 100 jobs to the people around and those who come from other districts for example herd's men the managers, cashiers, drivers, cleaners, and other casual workers

It also markets for other produce and farm inputs.

## 2.0 Sources of funding for the organization

The main sources of funding are retained earnings, debt capital, and equity capital

Retained earnings; the farm aims at minimizing profits by selling a product or rendering service for a higher price than what it costs them to produce the products. It is the most primitive source of funding for Wannaichi mixed farm.

After generating profits, the farm decides what to do with the earned capital and how to allocate it efficiently.

# CHAPTER TWO

# Management of field attachment

## Introduction

This chapter covers the entire management of field attachment .it shows the role of host farm, field supervisor, academic supervisor, student and the community.

## 2.1 Wanainchi mixed farm

Wanainchi mixed farm is managed by Mr. Kansiime Bosco, a Hoima based agriculturalist and business man.

With his great passion for agriculture and strong leadership, Wanianchi mixed farm has turned from an idea into an existing farm.it is located in Bulyango Kaboijana Village, Kitoba Sub County in Hoima district.

They deal in a variety of vegetables, rear Frisian cattle for milk production, goats, sheep and piggery. And these also help in the making of organic manure which is later transferred to vegetable garden, we also grow maize on a large scale to meet the growing demand for food as well as animal feeds and also they grow a variety of trees ranging from eucalyptus, pipe, among others.

The farm is open to all who are interested in sustainable farming. Regular field days and trainings are conducted on the Farm in conjunction with staff from the Ministry of Agriculture where knowledge is shared with the public. Small scale farmers or other interested parties are encouraged to attend training sessions on relevant subjects where practical lessons are taught these lessons include.

- Economic use of Land & Labour
- Soil and water conservation
- Integration of crop and livestock farming
- Alternative technologies

### 2.2 The roles of the organization

- Provision of agricultural extension services
- Provision of demonstration platform for other farmers
- Community skilling
- Food security and fight against malnutrition
- Payment of local taxes and fees
- Market for other produce and farm inputs.

## 2.3 Duties performed by the department of placement.

At wanaichi farm, I was put in the department of production and I performed duties as follows

Crop production: I assisted with various aspects of crop production. This includes preparing the land for planting, sowing seeds, transplanting seedlings, and applying fertilizers or pesticides as needed. I also monitored crop growth and ensure that plants receive proper care and maintenance throughout the growing season.

Animal Care and Husbandry: In livestock farming operations, I involved in the care and management of animals. Feeding and watering livestock, cleaning animal housing and monitor the health and well-being of the animals. Also handling tasks such as milking dairy cows and assisting with vaccination and medication administration at the farm

General Farm Maintenance: I contributed to the general maintenance and upkeep of the farm or agricultural facility. These involved repairing fences, maintaining farm buildings or structures, cleaning equipment, or performing routine maintenance tasks. And also assist in maintaining proper storage and handling of agricultural inputs and products.

Record-Keeping and Documentation: I was responsible for maintaining accurate records and documentation related to farming operations. This included tracking planting and harvesting dates, monitoring crop yields or livestock production, documenting pesticide or fertilizer applications, or recording animal health and medication records.

Teamwork and Communication: I worked as part of a team, cooperating and coordinating with other workers to accomplish tasks efficiently. I also used to communicate with supervisors and farm owner Mr. Kansiime Bosco regarding progress, issues, or changes in farming activities.

## 2.4 The status of the immediate supervisor

Wanaichi mixed farm stands on 10 acres of land where 1 acre is allocated for coffee, 1 acre for banana growing, 1 acre for vegetable growing, 2 acres for maize growing and 5 acres for agroforestry and livestock.

Crops grown on the farm included bok choy, Okra, eggplants, kale, onions, broccoli, cauliflower, Maize, beans, coffee sweet potatoes, Irish potatoes, tomatoes and among others. it also has fruits like Bananas and oranges. Crops are grown in plots measuring 5 x 20 m as well as strips of about 10 m x 5 m. The smaller plots (5 x 5 m)

are mainly used for experiments while the larger plots are used for production.

However, the vegetable plots are too small for any economic profit and therefore there is need to either increase the plot size or plant more frequently, so that there is a continuous supply of vegetables for sale.

Currently Cattle, sheep, pigs, rabbits and chicken are the animals reared at Wanaichi mixed farm. The cattle are grazed around the farm and also fed with silage and hey from their respective feeders in their houses. There are 10 cattle, 4 lactating cows, 1 bull and 5 heifers. 15 **ewes** and 10 ram are grazed with cattle and their number is greater than the one of cattle.

Wanaichi mixed farm has 11 casual workers who reside at the farm currently with different duties. 8 more workers stay around the farm in the nearest villages like Mbarara, Kiraira and more others. They are all allocated in different departments at the farm.

More so, the director of Wanaichi mixed farm has different farms within Hoima which are also part of the main farm. They also have their management.

### 2.5 The role of field supervisor.

Assist the student in attainment of goals and objectives on the "Learning Agreement". The Learning Agreement contains clearly defined objectives/goals related to the professional goals of the student's academic work.

Provide necessary training, one hour of weekly supervision and routine feedback on performance and expectations.

Monitor and approve weekly hours worked toward the required number of hours for the field attachment.

Provide written evaluation of student a minimum of two times: mid and end of the filed attachment.

Ensure student is fully oriented to the agency, staff, policies and procedures.

Provide resources, equipment, and facilities that support learning objectives/goals.

### 2.6 The role of the academic supervisor.

Mentor students to fit in the working environment

To assess whether what student studied in the lecture rooms have been put into practice.

To brief the student on the field work expectations and challenges

Link up the agency supervisor to benefit the intern

Maintain regular and constant communication with the agency supervisor at before, during and after the internship with the view of enhancing the competences of the intern.

Visit the intern at the placement.

Assist in assessing the student during and at the end of the internship exercise.

Give a general comment on the progress of the intern.

Groom and mentor the intern with regard to professional development.

Regularly update the internship monitor on the progress of the exercise.

Contribute to the assessment and evaluation of the internship exercise as a whole.

# CHAPTER THREE

# Activities Implemented

## 3.0 Orientation

The field supervisor and that was Mr. Kansiime Bosco oriented me with my colleague Nagayi Teopister on how to make a personal work plan (STC) that will guide us throughout our field attachment of one month in Kaboijana Village meaning that one cannot progress without a work plan. This enabled us to make our own Structural Tension Chart as illustrated in the appendix (i) of this report.

## 3.1 Construction of a poultry house

We engaged in construction of the poultry house that we found under construction we were trained on the first stage how it was started that involved site selection where the area was well-drained, away from predators and close to water and feed supplies. The site had good ventilation and sunlight. On second stage, the area was marked out the 15m by 10m area using stakes and string, holes were dung for the corner posts at a depth of 0.5m to 0.75m and they placed the 4"x4" posts in the holes and fill with concrete to secure them.

Here are some of the activities we found in place on constructing a poultry house.

### 3.1.1 Framing

We attached 4"x4" posts along the 15m length, spaced 2m apart and these were to support the wire mesh and

roof. We also connected the posts at the top using 2"x4" horizontal beams. More so we installed 2"x4" rafters at intervals of 1m across the width of the house. The rafters were sloping to allow rainwater runoff and then attached 2"x4" purlins perpendicular to the rafters to support the roofing material.

FIGURE 1,2, AND 3 WE WERE ATTACHING POLES ONTO THE POSTS ON LENGTH

### 3.1.2 Wire Mesh Installation

We Measured and cut the wire mesh to fit the sides of the structure. More so the wire mesh was secured to the wooden frame using nails or staples. To ensure the mesh is tight and well-secured to prevent predators from entering. We installed a wooden door with hinges, and covered it with wire mesh for ventilation. With the help of the farm manager Mr. Ategeka Micheal and other farm workers like Isaya, This enabled us to acquire knowledge and skills on how to construct and maintain farm structures.

Figure 2 installing wire mesh

### 3.1.3 Roofing

Placement of the corrugated iron sheets on the rafters and secure them with nails was done to ensure the sheets overlap to prevent leaks we Left openings under the roof for ventilation or install vents to improve airflow.

### 3.1.4 Final Touches

We Installed perches inside the poultry house for the birds to have enough exercises. Feeders and Waterers were placed in easily accessible locations where the chicken were going to feed and drink from. More so we ensured the structure is secure and predator-proof by reinforcing weak points with extra wood or wire mesh.

Figure 3 introducing CHICKS, Waterers and feeders in a constructed poultry house

### 3.1.5 Maintenance

Regularly we inspected the structure for any damages and replaced any damaged wood, mesh, and roofing to ensure the poultry house remains secure and functional.

### 3.2 Application of organic fertilizers [Bamboo Biochar organic fertilizer]

Bamboo Biochar organic fertilizer is characterized by its black to dark gray color, granular or powdered texture, small particle size, and porous structure. Its appearance reflects the combination of carbonized bamboo with organic materials, resulting in a product that is lightweight, dry, and beneficial for soil health.

We applied the fertilizer to vegetables namely, spinach, sukuma wiki, egg plants, tomatoes, broccoli and letus with the guide and advice of the farm manager Mr. Ategeka Micheal. Bamboo Biochar fertilizer consists of elements namely, nitrogen, phosphorous, potassium calcium and organic matter that provide nutrients to the vegetables that ensure high productivity and good yields in vegetables.

We used ring placement method in application of the fertilizer and this involves placing a ring of fertilizer around the base of the plant. Typically we placed the fertilizer 6 inches apart from the vegetables and 4 inches deep in the soil and this increases nutrient uptake efficiency on the vegetables named above. We applied one spoon of fertilizer to each plant on the named vegetables.

Figure 4 Appling fertilizer to broccoli

### 3.3 Preparation of silage

#### 3.3.1 Selection of Forage

We selected a suitable forage crop, which was improved Napier grasses. We harvested it at the right maturity stage, before the flowering stage. The grass had optimal moisture content of 60-70%. We allowed it to wilt for a few hours in the field to reduce the moisture level.

#### 3.3.2 Chopping

We used a forage harvester to chop the forage into small pieces, typically 1-2 cm long. Chopping the forage increases the surface area for fermentation and makes it easier to compact in the silo bag.

Figure 5 chopping forage

### 3.3.3 Addition of molasses to the grass.

Molasses is thick and sticky, so we diluted it with water to make it easier to apply and Stirred the diluted molasses thoroughly to ensure an even consistency. A common dilution ratio was 1 cup of molasses to 5 litters of water. This mixture was then sprayed onto the grass. During Chopping of the grass, we evenly distributed molasses throughout the grasses.

*Figure 6 distributing molasses throughout the grasses*

### 3.3.4 Filling the Silo Bag

**We** Loaded the chopped forage into the bag and compressed the forage as it fills the silo bag, ensured that as much air as possible is expelled. We compacted the forage tightly as it fills the bag. Proper compaction is crucial to eliminate air and create anaerobic conditions necessary for fermentation.

*FIGURE 7 FILLING SILO BAG*

### 3.3.5 Sealing the Silo Bag

Once the bag was filled, we sealed both ends tightly to prevent air from entering. Most silo bags come with integrated sealing mechanisms, but additional ties were used for extra security. After sealing, we inspected the entire bag for any holes or tears. The farm manager advised us to repair any damage immediately using silage tape or other suitable materials to maintain the bags airtight seal in case there are holes and tears.

FIGURE 8 SEALING SILO BAGS

### 3.3.6 Storing the Silo Bag

The silo bags were stored in a location that protects them from direct sunlight, extreme temperatures, and physical damage and stored silage in silo bags can last for 12-18 months without significant nutrient loss.

### 3.4 Banana growing

In the banana growing, we found the plantation already established. The farm manager known as Ategeka Micheal, advised us to always separate of top soil from the lower soil and while filling back the soil the top soil mixed with a basin of organic manure (farm yard manure) and one basin of charcoal dust should be done to keep moisture in the soil using a spacing of 3m by 3m. More so we were engaged in some of agronomic practices in banana plantation for example weeding, pruning, DE suckering, and pest control.

FIGURE 9 DE SUCKERING AND PRUNING

### 3.5 Lining and pegging of land when planting coffee and bananas

Lining and pegging was specifically done on land for panting bananas and coffee. We were trained on how to plant bananas and coffee in line and marked the points of the spacing of banana and that is 3*3 feet on the string. We started from the base where all lines would originate from.

Pegging was done on the marked points of the string from the base and this ensures optimum plant population leading to higher yields. It can also help in determining the quantity of inputs to be used on the land. It makes it easy to carry out cultural practices such as weed control, fertilization, pest control and harvesting.

### 3.6 Coffee growing

We were practically engaged in the agronomic practices carried out in coffee plantation where we visited three farmers that was Joseph T, Tibaijuka Patrick Jackson and the coffee farm at Wanaichi Mixed farm and were trained by Rosemary Mukonyezi the agronomist at the district. We identified coffee diseases such as coffee rust and coffee bacterial wilt were the most common diseases that attacked the coffee of the farmer we visited and that was Mr. Joseph's farm and we advised him to destruct the coffee plant by cutting it at the ground level and burning to stop the spread of the infection to other plants

Figure 10 observing how irrigation is done and identifying coffee twig borer

### 3.6.1 Extension work on Coffee growing.

I attended to a group of 15 coffee farmers which was at the home of Mr. Mwebembezi David the Chair Person LC1 kiraira village and the Integrated Pest Management Practices in controlling Coffee Twig Borer was the most discussed theme in the training and they were discussed as follows. Cultural Control involved Pruning and Sanitation, Avoid Stress and Adequate spacing between coffee plants improves air circulation and

reduces humidity, which can lower the risk of pest infestation. Physical and Mechanical Control where I advised coffee farmers to set up Trap Trees around coffee plantation and These trees, which are more attractive to the coffee twig borer, can help lure and capture adult beetles. Bottle Traps, we used bottle traps placed in the canopy to monitor and capture adult beetles, reducing their numbers and providing early warning of infestations. Biological Control, I advised coffee farmers to also Introduce natural predators and parasitoids that target coffee twig borer. These can include certain species of predatory beetles, parasitic wasps, and fungi that attack the borer larvae. Chemical Control this Considers using biorational pesticides, such as insect growth regulators or neem oil, which are less harmful to non-target organisms and I trained farmers on making and using organic pesticide where we used garlic, water, and soap to make the pesticide. Monitoring and Early Detection, I encouraged coffee farmers to Frequently inspect coffee plants for signs of infestation, such as holes in twigs and branches, or the presence of bore holes and frass (sawdust-like waste).

FIGURE 11 TRAINING FARMER ON CONTROLLING COFFEE TWIG BORER USING IPM PRACTICES

### 3.7 Bean growing (Nava bean seeds)

At the farm Nava bean seeds were planted and it takes 3 months to be harvested.

Planting of beans in the already tilled land at the spacing of 30cm by 10cm using a string was done ensure lining. With the guidance of the farm manager we Planted beans on the onset of rain

### 3.8 Pasture growing

Improved Napier grass was grown at the farm, it grows best on fertile soils of moderate to heavy texture and shows good tolerance to drought and periodic water logging.

Stem cuttings were used for propagation and the land was prepared before planting and it was prepared under primary cultivation and secondary tillage

The stem cuttings consisted 3 nodes 2 of which were buried in rows and row width ranged from 50 to 200cm and the distance within rows was between 50 and 100cm that was 3ft between rows and 2ft between stem cuttings after planting, Napier grass grows vigorously and can reach 4m in 3 months. Napier grass is fast growing and has a high annual productivity that depends on the climatic conditions especially temperature and rainfall and it was purposely grown to feed animals on the same farm.

Apart from improved Napier grass also Brocaria Morata 1, 2, and 3 are planted at Wanainch mixed farm and they are propagated using seeds.

Figure 12 learning about pastures and gap filling pastures

### 3.9 Vegetable growing.

#### 3.9.1 Nursery bed preparation

We were engaged in preparing nursery bed where we removed any debris, weeds, or existing vegetation, till the soil to a depth of 8 to 10 inches to loosen and aerate it. We created a smooth, even surface by raking the soil and then we sterilized the soil by burning maize stalks on top of the bed and this also added in calcium to the soil

We sowed cabbage, broccoli, egg plants, pumpkins, green paper and letus and these were sowed on different portions of the bed. We planted the seeds directly to the nursery bed about 1 to2 inches deep and 1to2 inches apart.

The nursery bed was gently and thoroughly watered and the soil was consistently moist during the germination period of about 7to 10 days.

Figure 13 tilling, raking the soil and sterilizing the soil

Figure 14 watering the bed and sowing cabbage seeds

### 3.10 Technologies established at the farm

#### 3.10.1 Corn garden

We established a technology of a corn garden using a heavy polythen sheet, tape measure, soil mixed with manure, pegs and water. We selected the site and the soil was well drained so that the soil is not flooded and then mark the middle point 2.3 feet round and put the pegs marking the space. Put the first paper that is the widest so that it goes round and then added soil and fill all corners. For the second layer, we measured 10 inches' smeller by diameter and put the pegs and then placed the second paper. The process was continued till to the top layer. Finally, I watered the soil to settle and when the soil lowered I added on another soil next morning.

Figure 15 binding papers together and filling the soil into the levels

## 3.11 Piggery

### 3.11.1 Treating sick piglet

We examined a piglet which was 3 weeks and we suspected Pneumonia disease and it hard signs of harsh coughing, difficulty in breathing (dyspnea), thick mucus was seen around the nose, elevated body temperature, and although this was easily observed without a thermometer and a Piglets was weak, tired, and reluctant to move. We treated it with antibiotics and that was tetracyclines, anti-inflammatory drugs: These help reduce fever and improve breathing. And nutritional drug

Figure 16 A piglet suspected with pneumonia being injected with drugs

### 3.11.2 Mixing feeds of the pigs.

The farm manager involved us in mixing the feeds of pigs and on feed we looked at how Feeding pigs properly is crucial for their growth, health, and productivity. The type of feed and feeding method varies depending on the pigs' age, production stage (breeding, growing, or finishing), and the type of farming system. Here's a breakdown of common pig feeds and feeding methods used at wanaichi mixed farm.

Commercial Feeds, these were formulated to meet the pigs' nutritional needs and we categorized them based on the pigs' growth stage. Starter Feed were for piglets (up to 40 kg). High in protein (18-20%) to support rapid growth. Grower Feed were for pigs weighing 40-70 kg and their Protein content is moderate (15-18%). Finisher Feed was for pigs above 70 kg. Lower protein (12-14%) but higher in energy to help pigs gain weight for slaughter. Sow Feed was for breeding sows, tailored for gestation and lactation and it Contains extra nutrients like calcium, phosphorus, and fiber for reproductive health. However most of the times the farm mixes their own feeds using Corn which Provide energy (carbohydrates), Vegetable Waste, Root Crops as the

Supplementary feeds for low-cost.

We mixed 50 kg of pig dry sow concentrate with 90 kg of maize bran with 60 kg of broken maize and fed it to cabraf, durof and large white as the breeds of pigs that are at wanaichi mixed farm

FIGURE 17 MIXING FEED OF THE PIGS

### 3.12 Cattle management.

#### 3.12.1 Treating sick animals

I was engaged on administering drugs how to sick calf and how to inject a drug to the animal using a syringe and where different injections are applied. And that all injections in meat producing animals should be given in the neck, with the exception of a few specific antibiotics. The injections should be given in a triangular area of the neck that is in front of the shoulder, above the spine, and below the nuchal ligament at the top of the neck. Also the upper hip is preferably for the injection in the cattle.

FIGURE 18 TREATING SICK CALF

### 3.13 Rabbit rearing

#### 3.13.1 Feeding rabbits

I was engaged in feeding rabbits daily at the farm and I was used to feed them on balanced maize bran with other nutritious foods, like fresh vegetables and leafy greens, to avoid overloading the rabbit with too many carbohydrates. Rabbits require a high-fiber, low-carbohydrate diet to maintain healthy digestion, and excessive carbohydrates can lead to obesity, gastrointestinal issues, or dental problems. So I was advised to always feed rabbits with less carbohydrates and much fiber content.

Figure 19 providing feeds to rabbits

### 3.13.2 Cleaning the rabbits hutch

Cleaning the hutch was also done daily to maintain cleanliness and hygiene of the hutch and to keep the rabbits health. I would always use a broom to collect any droppings on the hutch floor that might have missed the tray and collect them to the compost pile. Rabbit droppings are excellent for composting because they are high in nitrogen and low in odor. And I wound add the waste, along with any soiled beddings, to the compost pile.

Figure 20 collecting rabbit wastes to the compost pile

### 3. 14 Poultry rearing

#### 3. 14.1 Receiving one month chicks

Receiving one-month-old chicks (also known as pullets at this stage) requires proper preparation to ensure their health and well-being. They 150 chicks in number and here's the steps on how we received and cared for them at Wanainch mixed farm

We set up a brooder, which was a warm, dry, and draft-free area to house the chicks and a one-month-old chick may need less warmth than newly hatched chicks but still requires a controlled environment. We ensured enough space for the chicks to move freely—about 1 to 2 square feet per chick and we used absorbent beddings which were coffee husks to put on floor as litter to help absorb moisture, keeping the environment dry and preventing the development of harmful conditions like ammonia buildup, which can cause respiratory issues in birds.

Chick starter feed was provided to chicks, which was specially formulated for young chicks and contained the necessary nutrients for growth. At one month, chicks may also begin exploring additional treats or grains, but the primary food should still be chick starter and then we would sometimes feed them to chicken mash and

green vegetables to supplement on their diet. And feed were put in feed troughs where birds would access to them easily.

Fresh and clean water was always available to water the birds daily and we used water troughs or containers to avoid drowning hazards of the birds.

We would always inspect the birds for signs of illness, like lethargy, runny eyes or nose, or unusual droppings. Unfortunately we found out two birds sick and we took them in a separate house for Quarantine and treated them with organic treatment that was alcohol mixed with cooking oil but still the chicks died.

Monitoring their growth, weight, and feather development was done daily. One-month-old chicks started developing more feathers and within two weeks they were already young chickens

FIGURE 21 RECEIVING ONE MONTH OLD CHICKS, PROVIDING FEEDS AND WATER AND INSPECTING THEM FOR ANY DISEASES

### 3. 15 Designing the vision of the farm

We formulated the vision of the farm alongside the director of the farm Mr. Kansiime Bosco who clearly defined what he wants at his farm in five years to come and the questions where why did he start Wanainch mixed farm? What are his main motivations? Through the conversation, he clearly stated the vision of the

farm which was achievable and clear.

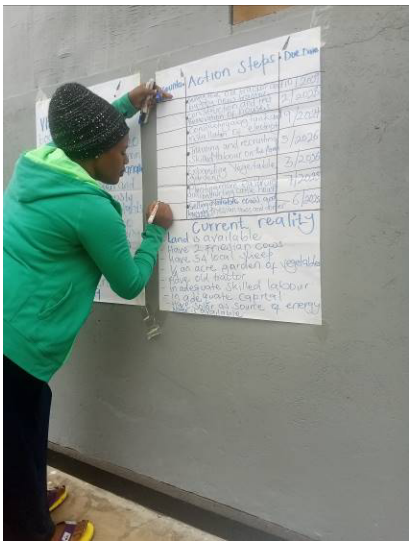

FIGURE 22 DESIGNING VISION OF THE FARM AND DISPLAYING IT IN THE FARM'S OFFICE

### 3.16 New knowledge and skills gained

Pest and disease identification skill, through visual plant disease estimation, I identified the disease that was affecting cauliflower by observing the status of the plant and identifying the signs of the plant affected by the disease and that was black rot disease. This is where the plant had yellow leaves, angular shaped chlorotic lesions along the leaf edges and those were the signs and symptoms of the disease I identified. Leadership skills, with the ability and strengths, I managed to aid in guiding and encouraging workers at the farm and the community farmers towards achieving their goal in far as agriculture is concerned. Communication and mobilization skills, with good facilitation in a community meeting, I was able to listen and respect the farmers' idea which also enabled me to collect information from the farmers of Bulyango Village.

Harvesting and post harvesting skills. This involved removing the crops which have reached their maturity from the garden, how to transport them and also preparation of harvested grain for storage which includes further treatment of the grain. With post-harvest handling, I was able to test the moisture content of a dry maize grain for storage as it is explained in chapter 3

Pest and disease control skills, on pest and disease management, I was able to control pests and diseases that attacked plants at the farm. In cauliflower plants, we sprayed a pesticide containing copper to control black rot disease in plants and before planting, primary tillage is done to expose larvae to predators such as ants and also field practices were done on tomatoes, bananas and cauliflower like pruning, weeding, mulching, crop rotation and sanitation of the field to avoid pests that would cause diseases to the plant.

### 3.17 Relevancy of the theories learnt during lectures to the field work activities

Many skills were acquired and these enabled me to relate the theoretical knowledge that was acquired during the class time with the practical knowledge in the field. These will definitely enable me to develop my career as student, start my own businesses and also enable me to facilitate change at all levels in the country Uganda especially in the sector of agriculture. During the one month of field attachment, I was self-motivated, hardworking, ambitious, competent, co- operative and also a time keeping person since I knew what I was supposed to do and even worked under limited supervision.

Furthermore, I have also gained comprehensive knowledge and skills in as far as crop production and animal production is concerned. This is majorly because during my field attachment I did interact with many scientists at different levels and in different fields who offered me an opportunity to interact with them. These will definitely be among my helpers as I continue perusing my career in Agriculture course.

### 3.18 Special personal contribution at the organization.

During my one-month field attachment at Wanainchi mixed farm, I contributed to the networking of the organization through Interacting with professionals, mentors, and peers, building valuable connections for future opportunities of the farm.

The director of Wanainchi mixed farm would receive constructive feedback to improve performance and develop a growth mindset at the farm. This was done whenever I would observe poor performance on the farm.

I participated in projects, contributing meaningfully to the organization's goals of creating a lasting impact in providing food security through practicing and training modern agricultural practices. This was done through training technologies at the farm like corn gardening, tire gardening and among others.

With the aim of conserving the environment, I recycled plastic bottles to create vegetable plots in dumped

used bottles in order to save landfill space, prevent pollution, and reduce the impact of global warming at the farm and planted vegetables in the bottles.

### 3.19 Challenges

**There were some challenges that did not work in the favor of the student and they include;**

Absence of a well-designed time table for daily activities at the farm. This was solved by being available at the farm.

Limited farm tools. This was solved by borrowing from other programs on the farm.

Limited engagement in outreach programs hence less opportunity to interact with the farmers who are the key stake holders in agriculture. This was solved by engagement in the outreach programs such as agricultural shows

# CHAPTER FOUR

## Conclusion and Recommendations

### 4.0 Introduction

The chapter includes Conclusion and Recommendations for the entire report of the one-month field attachment.

## 4.1 Conclusion

I personally, really enjoyed a one month filed attachment. This is because I have gained knowledge and skills in agronomic practices, leadership skills, lifestyle skills, field work skills, pathology and also business management. And I hope this is surely good orientation to my career and hence added important value to me. The acquired skills and also knowledge that are obtained during one-month field attachment shall therefore be used in the development and sustainability of agriculture sector in my home country Uganda.

## 4.2 Recommendations

After the field the following recommendations were advised. Some of these go the future students of ARU, to the university (ARU) and to the farm.

### 4.2.1 To students of ARU

Students should represent the theoretical work in class since it is applicable in the field for easy collaboration and cooperation at the farm and with community members.

### 4.2.2 To the University (ARU)

Students should be trained more technologies because the farm where I was deployed, community members are more interested in technologies. But consider the technologies that fit the level you are taking them, as you also find ways to train managers the technologies that can fit on the level where the student has left the farm and the community. Thus creating a lasting change on sustainable agriculture.

The University should also restructure the log book daily activities such that to include the space for the skills gained, the challenges faced and also the comment of the field supervisor.

The university should ensure that it does include the program for all agriculture students to be oriented to many agricultural institutions before letting them go for field attachment to different places.

### 4.2.3 To the farm

The farm should put in place adequate accommodation for students who come for their internship so that they stay at the farm and ensure the smooth studying and training at the farm. And also the farm should establish other projects like poultry, fish farming, apiary and goat rearing that also provide knowledge and

skills to the student at the same farm and have a lot of training.

### 4.3 Appendix (i) Structural tension chart for my field attachment plan

VISION: Have knowledge and skills on sustainable farming systems carried out for environmental management and rural development by 25/10/2023.

| Accountable | Accountable | Due date |
|---|---|---|
| Mackline and ARU | validation | 07/11/2023 |
| Mackline | writing of Report | 04/11/2023 |
| Mackline | Training agricultural technologies | 20/10/2023 |

| | | |
|---|---|---|
| Mackline | Vegetable growing and compost manure making | 18/10/2023 |
| Mackline and the mentor | CAP and PAR | 17/10/2023 |
| Mackline and the agronomist | Visiting the coffee farmer | 12/10/2023 |
| Mackline | Maize and bean growing | 8/10/2023 |
| Mackline | piggery | 4/10/2023 |
| Mackline | Banana and coffee growing | 29/9/2023 |
| Mackline | Seeking advice and observing farm projects | 27/9/2023 |
| The supervisor | Arrival | 26/09/2023 |

Current reality

- I have the materials reference such as note book, markers, masking tape, flip chart, and phone camera
- The immediate supervisor available
- 6 projects available

4.3.1 Appendix (ii): Temperate to ease Reporting and capturing of data

| ACTIVITY | VENUE | TYPE OF WORK DONE | QUANTITY | COMMENT |
|---|---|---|---|---|
| Arrival | At the farm | Welcoming remarks | | Well done |
| Orientation | At the farm | Transact walk, | once | Well done |

| | | | | |
|---|---|---|---|---|
| | | studying,<br>observing, | | |
| Base line mapping in banana growing | At the farm | Marking points where to dig holes of banana suckers | once | Well done |
| Sucker paring and planting. | At the farm | remove any rotten portion of the corm on the sucker for planting | twice | excellent |
| Coffee growing | At the farm | Planting and bending of coffee | 500 trees | Well done |
| Coffee training | At the farm | Agronomic practices | once | Well done |
| Bean growing | At the farm | Drilling holes and planting | 1 acre | Well done |
| Pasture growing | At the farm | Lining and planting | 2 acres | perfect |
| Maize growing | At the farm | planting | 2 acres | Well done |
| Testing of maize moisture | At the farm | Post-harvest handling | once | perfect |
| Maize cost benefit analysis | At the farm | Estimating expenditure and | twice | Well done |

| | | | | |
|---|---|---|---|---|
| | | income | | |
| Compost manure making | At the farm | Preparing compost manure | once | Well done |
| Eggplant growing | At the farm | transplanting | 6ft by 6ft | Well done |
| Tomato growing | At the farm | Pruning and spraying | 4 by 7ft | Well done |
| Cauliflower growing | At the farm | Weeding and pruning | 10 by 15ft | Well done |
| Nakati growing | At the farm | Nursery bed preparation and sowing | 5 by 4ft | Well done |
| Corn garden technology | At the farm | establishment | 1 | Well done |
| Plastic bottle gardening | At the farm | Making bottle gardens | 30 bottle gardens | Well done |
| Feeding and watering pigs | At the farm | Animal husbandry practices | daily | Well done |
| Measuring weight of pigs | At the farm | Taking measurements | once | Well done |
| Mixing and spraying accaricide to animals | At the farm | Pest management | twice | perfect |

| | | | | |
|---|---|---|---|---|
| Cleaning the kraal | At the farm | Sanitation practices | once | Well done |
| Treating sick animals | At the farm | Animal health and well being | twice | Well done |
| milking | At the farm | Animal husbandry practices | thrice | excellent |
| Conducting CAP and PAR | At the farm | Visioning technique | once | Well done |

AFRICAN RURAL UNIVERSITY (ARU)

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25/9/2023

**4.3.2 Appendix (iii) Letter of introduction.**

Dear Sir/Madam

RE: REQUEST TO HOST OUR STUDENT FOR FIELD ATTACHMENT FOR THE PERIOD

OF ONE MONTH ON YOUR FARM/ORGANIZATION

I hereby request your farm/ organization to host our student by names of

.....registration number ..... who is currently in year two of study. She is

offering Bachelor of Science in sustainable agriculture (BSSA) of African Rural University.

The field attachment will enable our students to learn practical skills in the modern agricultural technologies, extension work, program development and farm management at different levels thus enabling ARU to graduate rural transformation specialists with the necessary knowledge and skills to meet the demands of both rural and urban farmers.

Thank you in advance for accepting my request. Together we can transform our communities from subsistence agriculture to sustainable market oriented agriculture.

Yours faithfully,

.....

Ssengonzi Bagenda Jerome (D.Eng.)

Faculty Dean