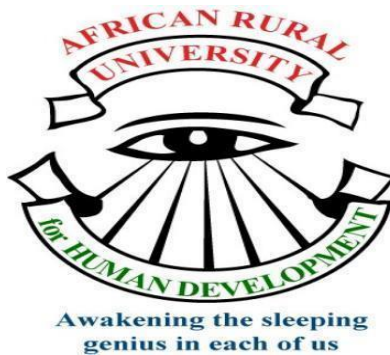




A Report of Field Attachment One Conducted on URDT Demonstration Farm from 5th June to 4th July 2025 in Kyigangaizi Village, Buyaga Sub-County, Kagadi District

Muhumuza Shadia

23/ARU/BSSA/004

Faculty mentor: Ms. Akot Jane

Field mentor: Ms. Kabahetere Sandra

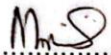
Report submitted to the Faculty of Technologies for Rural Transformation in Partial Fulfillment of the Requirements for the Award of the Bachelor of Science in Sustainable Agriculture Degree of African Rural University.

20th July, 2025

Declaration

I, Muhumuza Shadia, do affirm that the information provided in this report has been a result of my effort, participation, and original work during my field attachment. This report has never been submitted, either in full or in part, to any institution for the award of a degree or any other academic qualification.

Signature


.....

Muhumuza Shadia

23/ARU/BSSA/004

Date ...21/07/2025...

Approval

This is to certify that Muhumuza Shadia had a one-month field attachment training at Uganda Rural Development and Training Programme Farm, and this is a true record of what she was able to be involved in under my supervision.

Farm Supervisor

Signature

.....

Mrs. Abigaba Robinah

Date.....21/07/2025.....

Faculty Supervisor

Signature

.....

Mrs. Akot Jane

Date.....21/07/25.....

Dedication

I dedicate this report to my family, especially my parents, Mr. Mwesigwa Umar and Mrs Nakyanzi Faridah, who have always prayed for my success, and their love, affection, and efforts have been an inspiration to me. I also dedicate the work of this report to my respected lecturers and teachers who have taught and supported me in developing my personality and professional competence. May the almighty keep blessing your works, and may you live longer to testify to my success.

Acknowledgment

I would like to express my sincere gratitude to African Rural University for the opportunity to carry out this field attachment.

My special thanks go to my supervisors for their guidance, encouragement, and valuable feedback throughout the fieldwork.

I also appreciate the support and cooperation from the community members and URDT farm workers, whose willingness to share information and contribution greatly to my report.

Lastly, I thank my family and friends for their financial and moral support throughout this journey.

TABLE OF CONTENTS

Declaration.....	i
Approval	ii
Dedication	iii
Acknowledgment	iv
LIST OF TABLES.....	vii
LIST OF FIGURES.	viii
LIST OF APPENDICES.....	xi
LIST OF ABBREVIATIONS.....	xii
ABSTRACT.....	xiii
CHAPTER ONE: GENERAL INTRODUCTION	1
1.1. Background of field attachment.....	1
1.2. Objectives of field attachment	2
1.3. Student objectives	2
1.4. Background of URDT Demo Farm.....	2
1.5. URDT vision.....	3
1.6. URDT mission.	3
1.7. Objectives of URDT Demo Farm	4
1.8. The organization of the fieldwork/activity.....	4
1.8.1. Organizational structure of URDT demonstration farm	4
1.9. Roles of URDT demonstration farm.....	5
1.10 My responsibilities as a student.	5
1.11. Responsibilities of ARU	6
CHAPTER TWO: PRESENTATION OF ACTIVITIES.	7
2.0. Introduction.....	7
3.0. Evaluation of URDT demonstration farm.....	17
3.1. Lessons learnt.....	17
3.2. Challenges faced	17
CHAPTER FOUR: CONCLUSION AND RECOMMENDATION.....	19
4.1. Conclusion	19
4.2. Recommendation	19

REFERENCES	20
------------------	----

LIST OF TABLES

Table 1: The quantity of ingredients used in making the biopesticide-----	11
Table 2:The feed formulation ingredients and their respective quantities used in the mix -----	12
Table 3: The ingredients and their respective quantities used to prepare an herbal concoction to help control Newcastle disease in poultry -----	12
Table 4: The feeding plan of feeds for different categories of dairy cows -----	13
Table 5: STC -----	21

LIST OF FIGURES.

Figure II 1: Attendance list during CAP

Figure III 1: Introduction from the epicenter manager

Figure III 2: Writing aspirations during CAP

Figure III 3: Guiding pupils on a tour

Figure III 4: Field trip to Busesa farm

Figure III 5: Touring various enterprises at the farm

Figure III 6: Trip to DVO farm in Ruteete

Figure III 7: Removing old compost

Figure III 8: Piling new materials in the compost pile

Figure III 9: Mixing biochar and manure in the soil

Figure III 10: Deep ploughing in the greenhouse

Figure III 11: Mulching

Figure III 12: Filling the Vermibox

Figure III 13: Potting

Figure III 14: Hardening off

Figure III 15: Loosening the soil for the cone garden

Figure III 16: Cone garden making

Figure III 17: Fungicide application

Figure III 18: Tomato staking

Figure III 19: Tomato pruning

Figure III 20: Banana management

Figure III 21: Manure application

Figure III 22: Slashing in coffee

Figure III 23: Preparing the substrate

Figure III 24: Planting the seeds in polyethylene bags

Figure III 25: Renovating the mushroom house

Figure III 26: Watering mushroom bags

Figure III 27: Explaining the procedure for making the pesticide

Figure III 28: Watering vegetables

Figure III 29: Feed formulation

Figure III 30: Mixing feeds with a hoe

Figure III 31: Grinding ingredients for Newcastle remedy

Figure III 32: Before cleaning the kraal

Figure III 33: Cleaning the kraal

Figure III 34: Filling the troughs with silage

Figure III 35: Grazing

Figure III 36: Filling water troughs

Figure III 37: Milking

Figure III 38: Packing milk for customers

Figure III 39: Cleaning around the pigsties

Figure III 40: Renovating the pigsties

Figure III 41: Inspecting the traditional beehive

Figure III 42: Fish pond tour

Figure III 43: Harvesting beans

Figure III 44: Spreading beans to dry

Figure III 45: A visit to MEPE

Figure III 46: A notebook for jotting down tasks

Figure III 47: FC facilitation

Figure III 48: Revisiting the farm vision

Figure III 49: Attending the meeting

Figure III 50: Attending a workshop about the URDT methodology

LIST OF APPENDICES

APPENDIX I: STRUCTURAL TENSION CHART	21
APPENDIX II: ATTENDANCE LIST	22
APPENDIX III: FIELD PHOTOS DURING THE ATTACHMENT	23

LIST OF ABBREVIATIONS

ARU – African Rural University

CAP – Community Action Planning

DPC – Damp Proof Course

DVO – District Veterinary Officer

FC – Foundation Course

IMO – Indigenous Microorganisms

KKC – Kagadi Kibaale Community

KTB – Kenya Top Bar

MEPE – Mini Estate Processing Enterprise

PAR – Participatory Action Research

STC – Structural Tension Chart

URDT – Uganda Rural Development and Training Programme

URDTI – Uganda Rural Development and Training Programme Institute

ABSTRACT

This report presents the experiences and lessons learned during a one-month field attachment at the URDT Demonstration Farm, which took place from June 5th to July 4th. The aim was to bridge classroom theory with real-world practice in sustainable agriculture. During this period, I participated in various activities, including compost making, biopesticide formulation, greenhouse land preparation, tomato pruning and staking, livestock care, and nursery potting. Practical learning was reinforced through involvement in Community Action Planning (CAP), where we identified a research topic on comparing Serenade ASO and copper hydroxide in managing bacterial wilt in Rio Grande tomatoes in Nyamyeguruma village. I gained hands-on experience in sustainable soil fertility, crop and animal management, and teamwork. While the attachment was largely successful, some challenges, such as limited farm tools and minor injuries, occasionally disrupted progress. To improve future programs, I recommend better tool availability, improved safety measures, and stronger infrastructure. Overall, the experience deepened my skills, leadership, and understanding of sustainable farming and community-based research.

CHAPTER ONE: GENERAL INTRODUCTION

1.0. Introduction

This chapter outlines the objectives and background of the Uganda Rural Development and Training Program (URDT) demonstration farm, where the field attachment was conducted, as well as the objectives of the field attachment and the student's objectives.

1.1. Background of field attachment

As part of African Rural University's (ARU) curriculum, which emphasizes a 60% theory and 40% practical approach, a student is required to undertake a field attachment program to bridge the gap between theoretical knowledge and real-world application. This practical component is essential for preparing a student for the issues of modern agriculture and rural development.

In the last semester of the second year, a student who has completed year two is taken a farm to learn to practically learn and apply the theoretical aspects learned in class. The attachment involves hands-on exposure to various farms, enabling a student to develop practical skills in modern agricultural technologies, extension services, program development, and farm management. It helps her to get the research topic. This experience is integral in helping a student apply her acquired theoretical knowledge in real-world project-related activities.

During the field attachment, a student is dedicated to doing all the day-to-day activities of the farm or organization she is attached. She is therefore expected to engage in all farm activities, ranging from crop production to livestock management, for proper resource allocation and community engagement. This approach helps her build a strong understanding of both technical farm operations and the social dynamics of working with rural communities. It also helps a student to familiarize herself with interpersonal relationships within farming communities while exploring sociological principles.

In my case, the 40% practical experience was conducted at the URDT organization, located in Kyigangaizi Cell, Kitegwa Ward, Kagadi District, along Kagadi-Hoima Road. This placement was for four weeks at the URDT farm. This proves the great relationship between ARU and URDT.

After the field attachment, I was required to produce an examinable report regarding the practical skills and knowledge acquired during the attachment. This report was to be reviewed and approved by my university supervisor, ensuring that my learning objectives of the attachment were achieved.

1.2. Objectives of field attachment

The field attachment was designed to help students bridge the gap between classroom theory and real-world agricultural practice. It aimed to develop practical skills, assess career readiness, and cultivate a strong work ethic among students while exposing them to the real-life challenges faced by local farming communities. In line with these goals, I set out to learn how to effectively mobilize and work with the community through participatory approaches such as Community Action Planning (CAP). I also aimed to deepen my understanding of sustainable crop production by practicing key agronomic techniques, particularly in soil fertility management. In addition, I sought to gain practical experience in livestock care and to improve my knowledge of proper post-harvest handling methods. Through this attachment, I was able to align the broader learning objectives with my personal growth, building both technical skills and community engagement capacity essential for a career in sustainable agriculture.

1.3. Student objectives

1. To learn how to mobilize and participatorily work with the community, such as conducting CAP
2. To learn the best crop agronomic practices including sustainable soil fertility management practices
3. To learn the best livestock management practices
4. To learn the proper post-harvest handling practices

1.4. Background of URDT Demo Farm

The URDT Demonstration Farm, located in Kyigangaizi cell, Kitegwa ward, Kagadi, Uganda, was established as a practical learning and innovation hub for sustainable agriculture and rural development. URDT-Demo farm has acted as a training Centre for young people since 1993 for both women and men. This farm plays a crucial role in demonstrating how rural communities can utilize locally available resources with environmentally friendly technologies, hence promoting food security, improving the living standards of people in Uganda.

Acting as a core component of URDT's mission to empower individuals and communities, the demonstration farm provides hands-on training in sustainable farming practices. These include organic agriculture, crop production, livestock management, agroforestry, soil and water conservation, and post-harvest handling technologies using indigenous knowledge. This farm offers a real-world learning environment for students who are placed at its premises to do their field attachments and community members, enabling them to gain knowledge and skills to adapt to commercialized agriculture instead of subsistence farming.

By integrating education, training, and practical demonstration, the URDT Demo farm illustrates the benefits of a holistic approach to rural development. It highlights the vital connections between agriculture, health, nutrition, and environmental sustainability, offering an integrated rural development model that can be replicated across the region.

1.5. URDT vision.

URDT is a center for reflection and Development that has participatory and interactive professional management that also enhances support from communities, volunteers, professionals, donors, government, and other partners. It has creative, committed, and technically competent staff. It delivers quality training in Humanities, social sciences, Development studies, and Artisanry for community members, leaders of voluntary organizations, government staff, and other development practitioners. It creates and offers extension services, modern rural communication facilities, intermediation, and operates a resource center for information exchange and learning. It has a firm support/resource base both within and outside the organization.

1.6. URDT mission.

To enable the people of Uganda, recognize and embody common values and work together to create for themselves peace, prosperity, freedom, health, and happiness as they discover that they are to their development and have innate power and wisdom to create an environment that fosters personal and communal growth and expresses the highest in them.

To activate the spirit of self-reliance to build integrated, self-generating development in rural communities and economies by integrating training, education, and information sharing in development activities and using local and available resources and technologies as an example of what is possible for national development.

To enable the people, recognize and utilize the inter-relationship between development concerns in health, nutrition, sanitation, agriculture, water management, rural technologies, income generation, and the environment so that they a holistic approach to development.

1.7. Objectives of URDT Demo Farm

1. Demonstrate sustainable practices:

To apply environmentally friendly farming methods such as compost making, biopesticide use, and organic soil management.

2. Training and capacity building:

To acquire practical skills in crop and livestock management through guided farm activities.

3. Promote food security:

To support consistent and reliable food production through improved agronomic practices.

4. Income generation and entrepreneurship:

To explore how agriculture can be used as a tool for income generation and small-scale agribusiness.

5. Research and innovation:

6. To engage in practical research that addresses local farming challenges and encourages innovation.

7. Community empowerment:

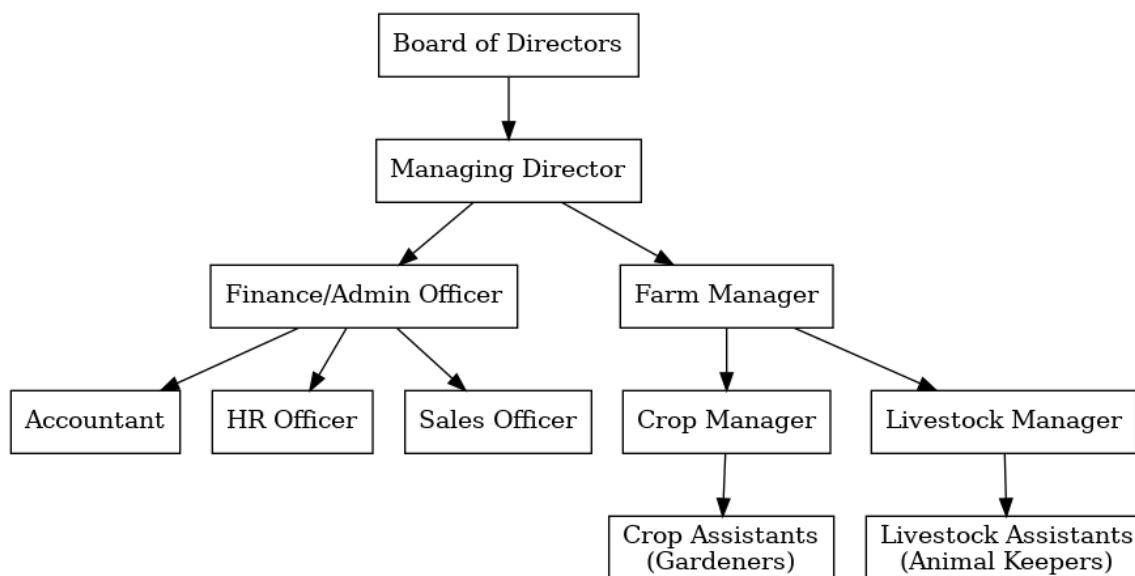
8. To involve local communities in participatory planning and decision-making for sustainable development.

1.8. The organization of the fieldwork/activity

This chapter shows brief highlights of how the field attachment was organized and managed. The following were the roles of different stakeholders in the field attachment.

1.8.1. Organizational structure of URDT demonstration farm

The organizational structure of URDT Demonstration Farm is designed to promote effective coordination, skill development, and productivity across all farm units. Below is the illustrated hierarchy and reporting protocol



1.9. Roles of URDT demonstration farm

URDT focuses on empowering rural communities through education, skill training, and development programs aimed at improving the quality of life.

The organization provides a holistic education approach, including the operation of a school and university (African Rural University) that focuses on practical and theoretical knowledge for rural transformation.

URDT promotes gender equality by offering women leadership training, entrepreneurship programs, and involvement in decision-making processes in rural development.

The organization drives initiatives in areas like clean energy, environmental conservation, and sustainable agriculture, fostering long-term community resilience.

URDT runs health awareness programs, focusing on improving nutrition, hygiene, and access to health care in rural areas.

1.10 My responsibilities as a student.

- ❖ Engaging in training.
- ❖ Abide by the rules and regulations of the agency supervisor.
- ❖ Perform duties as assigned to her.
- ❖ Compile data and make a report at the end of the field attachment.

- ❖ Skill application.
- ❖ Networking opportunities.

1.11. Responsibilities of ARU

- ❖ Coordinate the selection of farms for field attachment placement.
- ❖ Orient the interns, host farms, and mentors/supervisors on field attachment.
- ❖ Prepare the terms of reference.
- ❖ Develop tools for monitoring and supervision.
- ❖ Provide reporting guidelines.
- ❖ Ensure that the Ems and interns remain in line with systems thinking and the visionary approach.
- ❖ Ensure that information generated is disseminated at the local and national levels.
- ❖ Strengthen research and networking.
- ❖ Meet the students' living expenses and provide the apprentices required to implement the field attachment.
- ❖ Provide regular back-up support and training of ARU field attachment supervisors.
- ❖ Regularly monitor the progress of the field attachment.
- ❖ Collect and share feedback with the students on the progress of their performance.
- ❖ Inform other stakeholders in case of any new development regarding placement.
- ❖ Inform the interns of the assessment criteria of the field attachment programme.

CHAPTER TWO: PRESENTATION OF ACTIVITIES.

2.0. Introduction

This chapter presents the hands-on activities I undertook during my one-month field attachment at URDT Demonstration Farm, from 5th June to 4th July. The goal of this attachment was to bridge the gap between theoretical knowledge and practical experience in sustainable agriculture. The presentation is organized according to the four key field attachment objectives, with integrated global, national, and local perspectives. This structure ensures a comprehensive understanding of the skills gained, technologies applied, and relevance to broader development goals such as the Sustainable Development Goals (SDGs), Uganda Vision 2040, and URDT's rural transformation model (UN, 2015; Republic of Uganda, 2020; URDT, 2022).

2.1. Objective 1: To learn how to mobilize and participatorily work with the community (e.g., CAP), Community Action Planning (CAP)

In line with SDG 17: Partnerships for the Goals, and URDT's emphasis on participatory development, I conducted a Community Action Planning (CAP) session in Nyamyeguruma village, Nyaruziba subcounty on 28th June 2025. During the session, community members identified key agricultural challenges, and through this participatory process, a research topic emerged: *Assessing the efficacy of Serenade ASO in controlling bacterial wilt in Rio Grande tomatoes compared to copper hydroxide*. CAP allowed me to apply participatory rural appraisal tools and gain insights into collective decision-making. It also emphasized the importance of community ownership in project implementation (Chambers, 1994). (See figures III 1 and III 2 in Appendix III)

2.1.1. Field Tour Guiding

As part of community learning and empowerment, I guided primary school pupils from Kagadi Junior School during their educational tour of the URDT Demonstration Farm. I explained various practices, including composting, poultry feed formulation, animal care, and bio-pesticide application. This helped enhance my communication skills, confidence, and ability to educate younger learners. The activity contributes to local capacity building and agricultural literacy,

preparing future generations with sustainable farming knowledge (FAO, 2019). (See figure III 3 in Appendix III)

2.1.2. Educational Field Trips

During the field attachment, we participated in two educational field trips aimed at enhancing our understanding of climate-smart and innovative farming practices. At Busesa Demonstration Farm in Kibaale District, we observed integrated systems such as feeding pigs with sugar napia grass and using Indigenous Microorganisms (IMO) in pig sties to improve hygiene and nutrient recycling. At Kasasa DVO Farm in Ruteete Subcounty, we explored locally developed technologies like solar-powered poultry watering systems, which reduce labor and conserve water. Both farms showcased practical innovations that promote sustainable resource use and align with Uganda's climate-smart agriculture and modernization strategies (MAAIF, 2017). (See figures III 4, III 5 and III 6 in Appendix III)

2.2. Objective 2: To learn the best crop agronomic practices, including sustainable soil fertility management

2.2.1. Compost Making

Aligned with SDG 12: Responsible Consumption and Production, I participated in compost pile making using chicken droppings, dry grass, topsoil, old compost, green matter, and ash. The materials were layered and regularly turned to encourage aerobic decomposition. This process transformed waste into rich organic fertilizer that enhances soil fertility and structure. Composting is a sustainable, low-cost soil fertility management practice widely recommended in Uganda's agroecological zones (Pretty et al., 2006). (See figures III 7 and III 8 in Appendix III)

2.2.2. Incorporating Manure and Biochar

I mixed decomposed manure with biochar and incorporated them into greenhouse soils. Biochar, produced from charcoal, improves soil aeration, water retention, and microbial activity. This practice contributes to carbon sequestration and sustainable soil enhancement, making it both a climate change mitigation and productivity strategy (Lehmann & Joseph, 2015). (See figure III 9 in Appendix III)

2.2.3. Mulching and Land Preparation

In the tomato nursery bed, I applied dry grass and banana leaves as mulch to reduce evaporation, suppress weeds, and improve seedling survival. In the greenhouse, I assisted in land preparation through weeding, loosening, and leveling soil for better drainage and root development. These practices are critical for moisture conservation and soil health in Uganda's variable rainfall conditions (NARO, 2019). (See figures III 10 and III 11 in Appendix III)

2.2.4. Vermiculture (Vermi Box Filling)

I filled vermicompost boxes with cow dung and organic residues to raise earthworms for composting for a month before harvest. This sustainable practice produces vermi-compost, a highly nutritious organic fertilizer, and helps manage organic waste effectively (Edwards & Arancon, 2004). (See figure III 12 in Appendix III)

2.2.5. Seedling Management: Potting and Hardening Off

I filled potting bags with nutrient-rich soil in 4 m 8-inch potting bags to be planted with tree and vegetable seeds, and transferred seedlings from shaded nurseries to sun-exposed areas to harden them before transplanting. This reduced transplanting shock and improved survival rates in the main field. (See figures III 13 and III 14 in Appendix III)

2.2.6. Cone Garden Establishment

I constructed cone gardens by shaping DPC paper into circular layers and filling them with dry matter, soil, and manure ideal for growing vegetables. These gardens are ideal for households with limited space and support urban and peri-urban food production (RUAF, 2015). (See figures III 15 and III 16 in Appendix III)

2.2.7. Tomato Management (Pruning, Staking, and Spraying)

Tomato plants were pruned to improve air circulation and reduce disease incidence. I also staked them using sticks for support and sprayed Osothane (50g/18L of water) to prevent fungal infections. These practices promote healthy growth and higher yields (AVRDC, 2014). (See figures III 17, III 18 and III 19 in Appendix III)

2.2.8. Banana Management

During the field attachment, we engaged in banana pruning, weeding, and pest identification as essential practices in promoting healthy banana production. Pruning involved the removal of excess suckers, dry leaves, and male buds to improve air circulation, reduce disease incidence, and enhance nutrient concentration on productive shoots. Weeding was carried out regularly to minimize competition for water and nutrients, creating a clean environment that supports vigorous growth. While working in the banana plantation, we also identified common pests such as banana weevils and nematodes, which affect root systems and plant vigor. Early detection and appropriate control measures were emphasized to prevent yield loss and maintain plant health. (See figure III 20 in Appendix III)

In coffee plantations, I assisted in slashing weeds and in applying organic manure in coffee gardens, mainly litter from the poultry houses after cleaning them, to improve soil fertility and to boost crop productivity under the guidance of manager Robinah. This practical activity emphasized the importance of sustainable nutrient management in perennial crops, specifically coffee, since we used litter from poultry. These practices improve nutrient uptake, aeration, and disease control (UCDA, 2021). (See figures III 21 and III 22 in Appendix III)

2.2.9. Mushroom Cultivation

I participated in the cultivation of mushrooms, starting from substrate (bean plant residues) preparation to planting in the polyethylene bags and maintaining the growing environment through watering using a hand spray pump. We also renovated the mushroom house to improve its structure and hygiene using the DPC paper, timber, and nails to line the lower parts of the walls to prevent moisture from the ground from entering the house, which could cause contamination or rotting. This activity introduced me to alternative sources of nutrition and income generation using

minimal space and locally available resources. Mushroom farming is a viable local strategy for nutrition and income (UBOS, 2022). (See figures III 23, III 24, III 25 and III 26 in Appendix III)

2.2.10. Biopesticide Preparation

Using ash, banana peels, neem leaves, chili, and garlic, I helped prepare natural pest control solutions for vegetables like spinach, Sukuma wiki, etc. The mixture was fermented for 7 days, filtered, and sprayed. This method reduces reliance on chemicals, making it eco-friendly and cost-effective (PAN, 2010). (See figure III 27 in Appendix III)

Table 1: The quantity of ingredients used in making the biopesticide

Ingredient	Quantity
Ash	2 kg
Banana Peels	12 kg
Chilli	1 kg
Neem Leaves	2 kg
Water	120 litres

2.2.11. Vegetable Watering

I manually watered vegetable beds and gardens using a pipe connected to the tap during dry days to ensure adequate moisture levels for crop growth, especially in the demo garden. Also, watering supports seedling growth, flowering, and good yields. This activity taught me how to schedule watering based on plant needs and weather conditions. (See figure III 28 in Appendix III)

2.3. Objective 3: To learn the best livestock management practices

Poultry Management

I formulated poultry feeds using maize bran, cottonseed cake, salt, Hendrix concentrate, and meat booster. which were mixed well to ensure that the birds received a balanced diet for better growth and meat production under the supervision of Miss Kapitorina, the farm worker. Balanced feeding is crucial for productivity. Additionally, I prepared herbal remedies for Newcastle disease using garlic, aloe vera, ash, and red pepper, which were administered through drinking water. This aligns with global efforts to reduce antibiotic resistance and promotes the use of local ethnoveterinary knowledge (Gakuya et al., 2013). (See figures III 29, III 30 and III 31 in Appendix III)

Table 2: The feed formulation ingredients and their respective quantities used in the mix

Ingredient	Quantity (kg)
Maize Bran	120
Hendrix (Concentrate 25%)	50
Meat Booster	2
Brown Salt (Prime Cock Feeds)	2
Cottonseed Cake	10

Table 3: The ingredients and their respective quantities used to prepare an herbal concoction to help control Newcastle disease in poultry

Ingredient	Quantity
Ash	1 tablespoon
Christmas Melon	1 medium-sized fruit (grated or crushed)
Chilli (pepper)	3–5 pods (pounded)
Aloe Vera	1 leaf (sliced and crushed)
Garlic	5 cloves (crushed)
Water	1 litre

2.3.1. Cattle Management

Activities included:

Kraal Cleaning and Disinfection: Maintained hygiene using water and ash. (See figures III 32 and III 33 in Appendix III)

Feeding: I helped fill the drinking troughs with water and feed troughs with silage prepared from guatamara pastures, molasses, and cassava flour, which was compacted in a drum and then closed tightly to prevent all anaerobic respiration all proper fermentation, which improved the nutrition of animals and increased milk production. I also participated in grazing animals with green fodder and provided animal licks to supply essential minerals, such as calcium, and improve digestion, thereby enhancing their production. (See figures III 34, III 35 and III 36 in Appendix III)

Table 4: The feeding plan of feeds for different categories of dairy cows

The category of cow	Silage	Green fodder	Animal lick	Water
High milkers	15-20kg	10-15kg	daily	40-60litres
Maintenance cows	8-10kg	8-10kg	daily	30-40litres
Low yielders	10-12kg	5-8kg	daily	30-40litres

Milking and Equipment Sanitation: I engaged in milking cows and cleaning the milking equipment, like the sieves, jerrycans, and saucepans, to ensure safety. We milked 13 liters from 4 cows. Despite being well-fed, the cows at URDT Demonstration Farm may produce only 13 litres of milk daily due to several factors beyond nutrition. These include the cow's breed and genetics, stage of lactation, possible health issues like mastitis or worms, and lack of essential minerals such as calcium and phosphorus. Additionally, stress can come from poor housing or irregular milking times. This helped me understand animal care, the importance of cleanliness in dairy production, and proper handling techniques.

These practices highlight the importance of proper housing, nutrition, and health management for dairy cows (ILRI, 2011). (See figures III 37 and III 38 in Appendix III)

2.3.2. Piggery Management

I participated in cleaning, repairing, and improving the pig sties by sealing open spaces where pigs used to escape from using timber and iron sheets. We also fixed broken doors, repaired feeding troughs, and improved drainage to avoid stagnant water. This helped to ensure the pigs' safety and

also reduced stress on the pigs. Clean environments improve pig health and reduce stress, which increases productivity (FAO, 2013). (See figures III 39 and III 40 in Appendix III)

2.3.3. Apiary Visit

We visited the apiary section and observed different types of beehives, a total number of 25, including Langstroth, Kenya Top Bar (KTB), and traditional hives. Although we did not harvest honey since it was not yet ready, we learned about the structure and function of each bee in the beehive type. One key recommendation was to construct a shelter above the hives to protect them from rainwater, which would disturb bees and damage the hives. Beekeeping supports biodiversity and pollination services (UNEP, 2010). (See figure III 41 in Appendix III)

2.3.4. Fish Pond Management

During the visit to the fish pond led by Mr. Jason, sector lead of URDT Institute, we learned how fish are reared, fed, and monitored for growth. We also saw how the quality is managed and how fish farming contributes to the food and income. They rear mainly tilapia fish of a number of 3000 fish in the man-made pond and will hopefully stock 200 fish in the concrete fish pond. Fish farming enhances food security and provides alternative incomes (NDA, 2021). (See figure III 42 in Appendix III)

2.4. Objective 4: To learn proper post-harvest handling practices

Bean Harvesting and Drying

I harvested mature bean pods and dried them on clean tarpaulins under the sun. Regular turning reduced the moisture content and prevented mold. Proper drying is crucial in reducing post-harvest losses common in Uganda (FAO, 2014). (See figures III 43 and III 44 in Appendix III)

2.4.1. Value Addition at Mini Estate Processing Enterprise (MEPE)

At MEPE, I observed maize processing from shelling, drying, milling into flour, and animal feed formulation. I learned about quality control, packaging, and storage. Value addition is essential for

increasing farmer income and achieving SDG 1: No Poverty (AGRA, 2020). (See figure III 45 in Appendix III)

2.5. Additional Learning and Reflections

2.5.1. Daily Documentation and Reflection

I kept a detailed journal and photographic record of daily tasks, which improved my documentation and self-assessment skills. (See figure III 46 in Appendix III)

2.5.2. Facilitation of FC

Together with fellow interns, I facilitated a session in FC where we shared our farm experiences and reflected on various activities that we had done at the URDT demonstration farm. This session helped participants connect theory with practice and inspired them to take action in their communities. This activity linked our daily efforts to a broader strategic plan (URDT, 2022). (See figure III 47 in Appendix III)

2.5.3. Revisited the farm vision

We revisited the URDT demo farm vision, which was to be achieved which is a sustainable farm with; **400 million in sales, 20% profit, 20 Fresian dairy cow introduced, 3000 broilers introduced, three acre of pasture established, 20 acre of maize established, 200,000 tree seedlings established on bed, 100 beehives 50 tradition and 50 Langstroth, 100 comb rough pigs introduced, 4 greenhouse technologies introduced for vegetable production, 4 acre coffee plantation well managed, 3 acre banana plantation well managed, 800kgs of mushroom produced by 30/12/2027.** This vision focuses on creating a model farm that demonstrates sustainable agriculture practices. Through this discussion, we understood how our activities we did contributed to the realization of the farm vision. (See figure III 48 in Appendix III)

2.5.4. Weekly farm Meetings

I attended weekly farm meetings held every Saturday. These acted as platforms for planning, teamwork, and evaluation of ongoing activities, which improved my communication and accountability skills. (See figure III 49 in Appendix III)

2.5.5. Workshop on URDT Methodology

I attended a workshop organized by our farm managers and Madam Topsita with fellow interns focused on the URDT methodology, which integrates the visionary approach, systems thinking, and principles of a learning organization. This session helped appreciate the holistic nature of rural transformation used by URDT. (See figure III 50 in Appendix III)

CHAPTER THREE: ANALYSIS AND EVALUATION

3.0. Evaluation of URDT demonstration farm

URDT Demonstration Farm was a good and organized farm for learning. It gave us a chance to practice what we learnt in class. The farm was divided into different sections, like crop and animal. We were guided by skilled farm staff (manager Robinah and manager Philoserem) who helped us understand every activity we did.

The farm uses locally available resources, which helped me learn how to reduce costs and work sustainably. They also follow a clear vision that they want to achieve by 2027, which motivated us to work with purpose. I also liked how students were involved in planning and making decisions during weekly meetings. The environment was friendly for learning and teamwork.

3.1. Lessons learnt

Practical skills: I gained hands-on experience in compost making, milking, pruning, vermiculture, spraying fungicides, and applying manure etc.

Resource utilization: I learned how to use local resources, for example, banana peels, neem, ash, and cow dung. To make inputs like biopesticides and compost, reducing dependency on expensive inputs.

Through workshops and orientation, I deeply learned how to work towards a shared vision, such as the 2027 farm vision, and how to align my actions with long-term community goals.

Leadership and communication: By facilitating the FC session and sharing our experiences, I improved my ability to speak publicly, lead discussions, and mentor others.

Teamwork, flexibility, and time management: Working with fellow apprentices and staff taught me how to manage time, divide and adapt to a variety of work, and respect roles within a team.

3.2. Challenges faced

Internal

Balancing work and learning: It was hard to take notes while working on the farm. I carried a small notebook to write key points during break time or after work. I also took photos that were allowed for reference.

Monir injuries. While handling farm tasks, for example, the apprentice sustained a small cut on the hand while pruning tomatoes using a razor blade.

External

Few tools and materials: Sometimes we lacked enough tools like spades, sprayers, and pruning scissors. We shared tools in groups and planned activities so that everyone got a turn. We also reported shortages to the farm managers.

CHAPTER FOUR: CONCLUSION AND RECOMMENDATION

4.1. Conclusion

The field attachment at URDT Demonstration Farm helped me apply my objectives: mobilizing and participatorily engaging communities (e.g., CAP), applying best agronomic practices, managing livestock and post-harvest processes, and enhancing soil fertility using sustainable methods. I connected theory with practice through activities like composting and biopesticide making, and developed teamwork and flexibility, leadership skills, etc. A key challenge was the lack of enough farm tools.

4.2. Recommendation

The farm should provide more tools and protective gear to ease work and ensure safety during activities.

Structures such as pig sties and beehive shelters should be renovated or improved regularly so as to maintain hygiene and productivity.

Establish a health facility to address minor injuries and provide first aid to farmworkers and students while at the farm.

REFERENCES

Food and Agriculture Organization. (2017). *The future of food and agriculture – Trends and challenges*. FAO. <https://www.fao.org/3/i6583e/i6583e.pdf>

Food and Agriculture Organization. (2021). *Composting and soil fertility management for small-scale farmers*. FAO. <https://www.fao.org>

Government of Uganda. (2013). *Uganda Vision 2040*. National Planning Authority. <https://www.npa.go.ug/uganda-vision-2040/>

NARO (National Agricultural Research Organization). (2016). *Integrated pest and disease management strategies for sustainable agriculture in Uganda*. NARO Publications.

Uganda Rural Development and Training Programme. (2022). *URDT Annual Report 2022*. URDT. <https://www.urdt.net>

United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. <https://sdgs.un.org/2030agenda>

United Nations Development Programme. (2021). *Human development report 2021/2022: Uncertain times, unsettled lives*. UNDP. <https://hdr.undp.org>

APPENDIX I: STRUCTURAL TENSION CHART

Outcome

Field attachment completed, food security and nutrition ensured, community participation and sustainable farming practices applied in 20 farming fields by 5th July 2025.

Table 5: STC

Accountable	Action Steps	Date
Shadia	Compile and submit the final field report	5 th July 2025
Shadia	Finalize all field tasks and update records	27th June 2025
Shadia	Prepare and organize a community meeting	23rd June 2025
Shadia	Agroforestry integration	20th June 2025
Shadia	Progress review and internal reporting	19th June 2025
Shadia	Clean and improve livestock units	18th June 2025
Shadia	Identify and manage pests and diseases	15th June 2025
Shadia	Prepare compost pile, soil sampling, mulch, and nursery bed	13th June 2025
Field Supervisor	Record keeping session, revisit the farm vision, and initiation	6th June 2025

Shadia	Community and farm entry, transect walk, and farm tour	2nd June 2025
--------	---	---------------

Current reality

Limited knowledge of local farming systems

Lack of hands-on farming experience

Minimal exposure to pest and disease control

Low application of agroecological principles

Weak communication and facilitation skills

Poor documentation habits

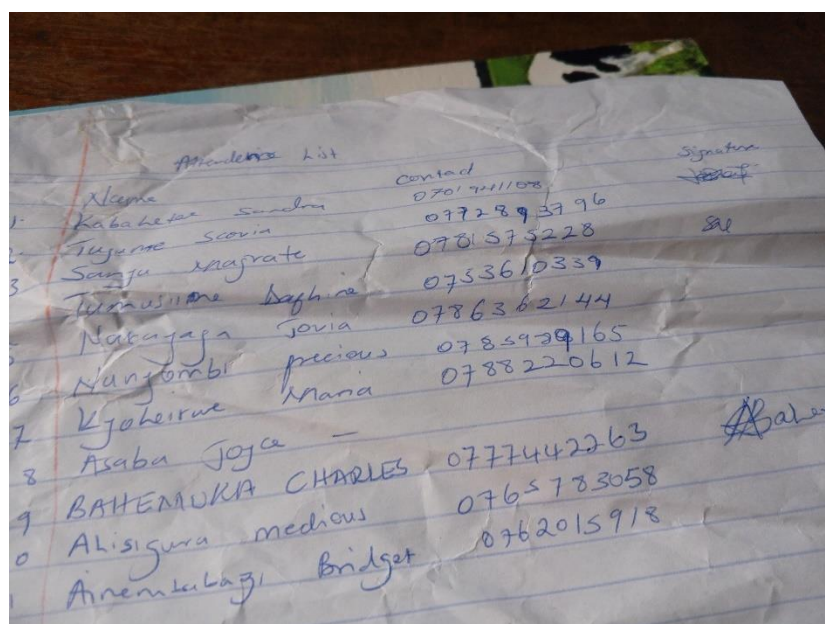
Limited livestock management experience

No experience in project initiation

Supervisors and mentors are available

Flip charts, markers, and masking tape are available

APPENDIX II: ATTENDANCE LIST



	Name	Contact	Signature
1	Kabaketa Sandra	0701711108	
2	Tugene Scovia	0772893796	
3	Sungu Magrate	0701575228	
	Tumusiime Kagira	0753610339	
	Nabugaga Jovia	0786362144	
6	Nungombi Precious	0785939165	
7	Kjokeirue Maria	0788220612	
8	Asaba Joyce		
9	BATEMUKA CHARLES	0777442263	
10	ALISIGURA MEDIOUS	0765783058	
	Ainembulagi Bridget	0762015918	

Figure II 1: Attendance list during CAP

APPENDIX III: FIELD PHOTOS DURING THE ATTACHMENT



Figure III 1: Introduction from the epicenter manager Figure III 2: Writing aspirations during CAP



Figure III 3: Guiding pupils on a tour

Figure III 4: Field trip to Busesa farm



Figure III 5: Touring various enterprises at the farm



Figure III 6: Trip to DVO farm in Ruteete



Figure III 7: Removing old compost pile



Figure III 8: Piling new materials in the compost



Figure III 9: Mixing biochar and manure in the soil, greenhouse



Figure III 10: Deep ploughing in the



Figure III 11: Mulching



Figure III 12: Filling the Vermibox



Figure III 13: Potting



Figure III 14: Hardening off
garden



Figure III 15: Loosening the soil for the cone



Figure III 16: Cone Garden making



Figure III 18: Tomato Staking



Figure III 19: Tomato pruning



Figure III 17: Fungicide application



Figure III 20: Banana management



Figure III 21: Manure application



Figure III 22:Slashing in coffee



Figure III 23:Preparing the substrate



Figure III 24:Planting the seeds in polyethylene bags



Figure III 25:Renovating the mushroom house



Figure III 26: Watering mushroom bags



Figure III 27: Explaining the procedure for making the pesticide Figure III 28: Watering vegetables



Figure III 29: Feed formulation

Figure III 30: Mixing feeds with a hoe



Figure III 31:Grinding ingredients for the Newcastle remedy



Figure III 32:Before cleaning the kraal



Figure III 33:Cleaning the kraal



Figure III 34:Filling the troughs with silage



Figure III 35:Grazing



Figure III 36: Filling water troughs



Figure III 37:Milking



Figure III 38:Packing milk for customers



Figure III 39:Cleaning around the pigsties



Figure III 40:Renovating the pigsties



Figure III 41: Inspecting the traditional beehive



Figure III 42: Fish Pond tour



Figure III 43: Harvesting beans



Figure III 44: Spreading beans to dry



Figure III 45: A visit to MEPE

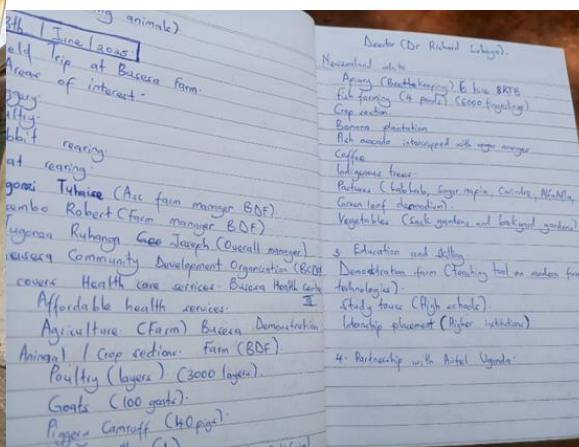


Figure III 46: A notebook for jotting down tasks



Figure III 47: FC facilitation



Figure III 48: Revisiting the farm vision



Figure III 49: Attending the meeting



Figure III 50: Attending a workshop about the URDT methodology