A TECHNICAL REPORT ON STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME

(SIWES)

HELD AT

MA SHA ALLAH AGRO RESOURCES NIGERIA LIMITED

FATE ROAD, ILORIN, KWARA STATE

WRITTEN BY

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SUBMITTED TO

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AUGUST – DECEMBER, 2024

DEDICATION

This report is dedicated to Almighty God who is the beginning and the end of my existence, the reason I breathe, but for his grace and mercies I would not be writing this report this day. Also to my lovely and wonderful parents Mr. and Mrs. Oyelade for your labor of love and support through these years, to my brothers, sisters and friends a big thank you for your support.

ACKNOWLEDGEMENTS

I would like to express my gratitude to God for his grace throughout my industrial training and to members of Ma Sallah Agro Resources Nigeria Limited as well as my industry-based supervisor, Engineer. Engr. Ridwal Aremu Mayaki, for their kind cooperation and encouragement which helped me in completion of this SIWES. Special gratitude to the Oyelade family for their support in my educational pursuit.

ABSTRACT

This report is a summary of experienced gained during my student industrial work experience scheme (SIWES) training program at Ma Sallah Agro Resources Nigeria Limited**.**

It is carefully arranged in chapters, written according to the aspect of agricultural activities professional practical experienced. The knowledge I acquired was based on the farm.

TABLE OF CONTENTS

CHAPTER ONE

1.0 INTRODUCTION

The student's industrial work experience scheme (SIWES) is a program designed for student of tertiary institutions with the aim of exposing students that have acquired theoretical knowledge in the classrooms to the practical exposure and experience.

The scheme is a Program involving the students, the university and the industry. Participation in SIWES has become a necessary precondition for the award of diploma and degree certificate in specific discipline in most institution of higher learning in the country in accordance with the educational policy of the government.

The bodies involved are the federal Government, the industrial training fund (ITF). Other supervisory agency is the National council for college of education (NCCE). The success of, or otherwise; the SIWES, depends on these bodies and the general public involved in articulation and management of the program.

1.1 AIMS AND OBJECTIVES OF SIWES

- To provide students with the opportunity to apply their theoretical knowledge in real work situation, thereby bridging the gap between university work and actual work
- To provide an avenue for students in Nigeria universities to acquire industrial skills and experience in their course of study.
- To enlist and strengthen employers in the entire educational process of preparing university graduates for employment in industries.
- To help students prepare for the corporate world and enhance their curriculum vitae.
- To improve interpersonal relationship skills of the students.
- To make the transition from university world of work easier; and enhance contact for job placement.

- ❖ To expose students to work methods and techniques in handling equipment and machinery that may not be available in their institutions.

1.2 NAME OF THE COMPANY

MA SHA ALLAH AGRO RESOURCES NIGERIA LIMITED

1.3 LOCATION OF THE COMPANY

- Ma Sa Allah Agro Resources Nigeria Limited is located at Fate Road, Tanke, Ilorin, Kwara State

1.4 BRIEF SUMMARY OF COMPANIES ACTIVITIES

- ➢ Ma Sha Allah Agro Resources Nigeria Limited is

1.5 ORGANIZATION CHART

DIRECTOR

|

MANAGER

|

STAFFS

|

I.T/SIWESSTUDENTS

CHAPTER TWO

2.1 APPLICATION OF FERTILIZER

It is advisable to apply fertilizer on the plant, so that it will help the plant to grow well and bring good product.

2.2 HOW TO APPLY FERTILIZER

Fertilizer can be applying on plant and when rain fall it will dissolve it and go down to the root. But it will also help the unwanted weed to speed up. Which may cause early weeding.

We can use our hand to dig a hole beside the plant and pour the fertilizer inside it so that when the rainfall it will dissolve and go down to the root of the plant.

2.3 TYPES OF FERTILIZER

1. NPK 14-14-15
2. Super grow

CHAPTER THREE

3.0 POTATOES

3.1 TYPES OF POTATOES

1. **Russet Potatoes:** These are the most commonly grown potatoes, known for their brown skin and fluffy interior.
2. **White Potatoes:** These potatoes have a white skin and a waxy texture.
3. **Red Potatoes:** These potatoes have a red skin and a waxy texture.
4. **Yukon Gold Potatoes:** These potatoes have a yellow skin and a buttery, yellow flesh.

3.1.1 CLIMATE AND SOIL REQUIREMENTS

1. **Temperature:** Potatoes require a cool temperature between 40°F and 70°F (4°C and 21°C) to grow.
2. **Soil:** Potatoes prefer well-draining, loose soil with a pH between 4.5 and 7.0.
3. **Moisture:** Potatoes require adequate moisture, especially during tuber formation.

3.1.2 FARMING PRACTICES

1. **Seed Selection:** Choose high-quality seed potatoes that are certified disease-free.
2. **Planting:** Plant seed potatoes in well-prepared soil, typically in early spring.

3. **Hilling:** Hill the soil around the base of the plants to encourage tuber formation.
4. **Irrigation:** Provide adequate moisture through irrigation or rainfall.
5. **Fertilization:** Apply fertilizer as needed, taking care not to over-fertilize.
6. **Pest and Disease Management:** Monitor for pests and diseases, using integrated pest management (IPM) practices to minimize harm.

3.1.3 HARVESTING AND STORAGE

1. **Maturation:** Potatoes are typically ready to harvest 70 to 100 days after planting.
2. **Harvesting:** Harvest potatoes when the tops of the plants begin to yellow and die back.
3. **Storage:** Store potatoes in a cool, dark place with good ventilation to preserve quality.

3.1.4 BENEFITS OF POTATO FARMING

1. **High Yield potential:** Potatoes can produce high yields, making them a valuable crop for farmers.
2. **Nutritional Value:** Potatoes are a good source of complex carbohydrates, fiber, and several important vitamins and minerals.
3. **Economic Benefits:** Potato farming can provide economic benefits to farmers and local communities.
4. **Food Security:** Potatoes are an important food crop, providing a reliable source of nutrition for millions of people around the world.

3.1.5 CHALLENGES OF POTATO FARMING

1. **Diseases:** Potatoes are susceptible to several diseases, including late blight and scab.
2. **Pests:** Potatoes are vulnerable to pests, such as aphids and Colorado potato beetles.
3. **Weather Conditions:** Potatoes are sensitive to weather conditions, such as extreme temperatures, drought, and flooding.
4. **Soil Degradation:** Potato farming can lead to soil degradation if proper farming practices are not followed.

(Sample of the farm Potatoes)

3.2 VARIETIES OF CASSAVA

1. **Sweet Cassava:** This type is edible and can be eaten boiled, mashed, or fried.
2. **Bitter Cassava:** This type contains higher levels of cyanide and is often used for animal feed or industrial purposes.

3.2.1 CLIMATE AND SOIL REQUIREMENTS

1. **Temperature:** Cassava requires a warm temperature between 64°F and 90°F (18°C and 32°C) to grow.
2. **Soil:** Cassava prefers well-draining, acidic soil with a pH between 5.5 and 6.5.
3. **Moisture:** Cassava requires adequate moisture, especially during the first six months after planting.

3.2.2 FARMING PRACTICES

1. **Seed Selection:** Choose high-quality cassava stems or cuttings that are disease-free.
2. **Planting:** Plant cassava stems or cuttings in well-prepared soil, typically at the beginning of the rainy season.
3. **Irrigation:** Provide adequate moisture through irrigation or rainfall.
4. **Fertilization:** Apply fertilizer as needed, taking care not to over-fertilize.
5. **Pest and Disease Management:** Monitor for pests and diseases, using integrated pest management (IPM) practices to minimize harm.

3.2.3 HARVESTING AND STORAGE

1. **Maturation:** Cassava is typically ready to harvest 6-12 months after planting.
2. **Harvesting:** Harvest cassava by digging up the roots, leaving a small portion of the stem intact.
3. **Storage:** Store cassava in a cool, dry place or in a ventilated storage facility to preserve quality.

3.2.4 BENEFITS OF CASSAVA FARMING

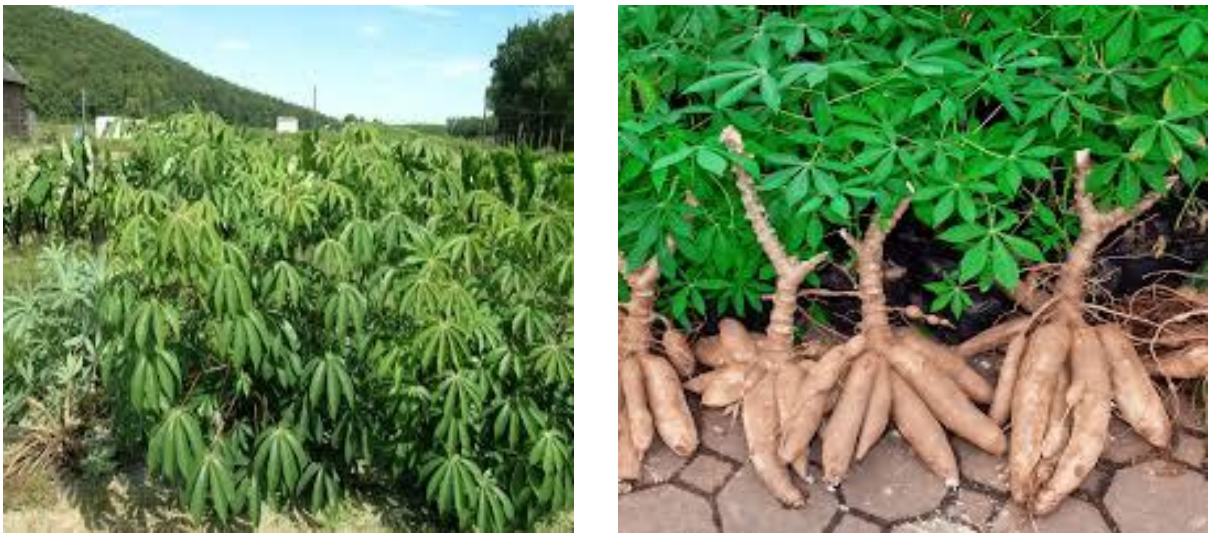
1. **High Yield Potential:** Cassava can produce high yields, making it a valuable crop for farmers.
2. **Drought Tolerance:** Cassava is relatively drought-tolerant, making it a good choice for areas with limited water resources.
3. **Nutritional Value:** Cassava is a good source of carbohydrates, fiber, and several important vitamins and minerals.
4. **Economic Benefits:** Cassava farming can provide economic benefits to farmers and local communities.

3.2.5 CHALLENGES OF CASSAVA FARMING

1. **Diseases:** Cassava is susceptible to several diseases, including cassava mosaic disease and cassava bacterial blight.
2. **Pests:** Cassava is vulnerable to pests, such as cassava green mites and cassava mealybugs.

3. **Soil Degradation:** Cassava farming can lead to soil degradation if proper farming practices are not followed.

4. **Post-Harvest Losses:** Cassava is highly perishable and requires proper handling and storage to minimize post-harvest losses.



(Sample of the farm Cassava)

CHAPTER FOUR

DETAILED REPORT OF ACTIVITIES CARRIED OUT ON THE FARM

2.0 FARMING UNIT (MAIZE FARMING)

Farming is the act or process of working the ground, planting seeds and growing edible plants. Farming play major roles in our societies; it serves as main sources of raw materials, sources of food supply, provision of shelters and lot more.

In Femstride enterprise, the farming unit practice the plantation of maize and yam.

2.1 MAIZE FARMING

Maize farming is a very popular form of crop cultivation in Nigeria. It is an essential diet and is consumed by a good number of families and homes. An average Nigerian consumes maize or its derivatives at least once every day. It is also practiced across the country in small, medium, or large scale capacities. It serves as a significant source of income for many households that are into farming in Nigeria.

Maize (Zea mays) is a member of grass family (Gramineae). It is a cereal crop which produces grain that can be used as food by human beings as well as livestock. The seed/fruit of maize is a caryposis, i.e it has its epicarp fused with the mesocarp.

2.1.1 FIELD MANAGEMENT PRACTICES OF MAIZE

- **Land Selection:** Maize is grown best on well-drained, well-aerated, deep warm loams and silt loams containing adequate organic matter and well supplied with available nutrients.
- **Land Preparation:** It is done by clearing the land or bush with cutlass, making ridges or heaps manually with hoe, or mechanically by ploughing, harrowing and ridging.
- Field Preparation method can be done is the follow ways as conventional method, conventional tractors and conservation tillage.

- **Climate and soil requirement**: Maize requires a temperature of 30ºC – 34ºC, Temperature below 5ºC – 45ºC result in poor growth and death of the maize plant. Rainfall of between 760mm – 1520mm per annum is adequate and well drained sandy loamy soil of pH 6-7.
- **Varieties of Maize**: The best known varieties used in breeding in Nigeria include: Lagos white, NS -1, NS – 4, NS – 5, Eafro 231, Bende local, Calabar local, Ikom white, etc… But it is classified for commercial purposes as dent maize, floury maize, flint maize, popcorn and sweet maize

  a. Dent maize: The grain contains soft starch granules which are less densely packed than in other types of maize. This results in the shrinkage of the starch within the outer layer of the grain. The grain is thus characterized by an indentation at the distal end. Dent maize has either a yellow or white grain. The most popular varieties of Dent Maize are TZB (FARZ - 34), TZB (FARZ -27 and 096EP6) (FARZ - 23).

  b. Floury maize: The floury maize seed (or grain) consists largely of soft starch which is surrounded by the corneous layer under the pericarp. This maize is grown mainly in the most southerly parts of Nigeria. Some varieties are-. Lagos White, Bende Local, Ikom White and Akwete Local, all of which are used in the breeding programmes in Nigeria.

  c. Flint maize: This variety has very little soft starch in its grain (unlike Dent corn). Some varieties of this maize are NS-1, Diacol-V-153 and Samaru 123.

  d. Popcorn: This is an extreme form of Flint maize. It has small kernels (grains) on a small ear. It is fried in oil to make. The starch granules are enclosed in a very tough and elastic membrane. When heated this tough membrane resists steam pressure until it explodes.

  e. Sweet maize-. This is valued for its sweet flavour. This variety has much higher sugar content than all the other types, and it is usually boiled or canned. The variety recommended in Nigeria is USDA.
- Method propagation: Maize is propagated by seed.

2.1.2 PLANTING OF MAIZE

- Planting date: Early maize is planted between March/April and late maize is July/August. Note it is also planted depending on location and rainfall.
- Planting: planting can be done manually, using cutlass or mechanically by planters at two to three seeds per hole at 2 – 3cm for moist soil and 5 – 10cm for dry planting.
- Spacing: Spacing of 75cm between rows and 30cm between hills when planting one seed per hill. When hand planting, it is easier plant at spacing of 75cm between rows and 60cm between hills in a row allowing two/three seeds per hill. And with this spacing, 25kg per hectare or about 10kg per acre.

2.1.3 HARVESTING AND STORAGE OF MAIZE

- Harvesting of Maize: The cobs can be harvested within 12 – 14weeks while dry maize is 14 – 17weeks.it can be harvested by hand, sickle or corn picker by combined harvester.
- Storage: Dried maize cobs can be stored either in Cribs, Rhombus or in Fireplace, on a small scale or in Silos, on a large scale.

2. 1. 4 PROCESSING AND USES OF MAIZE

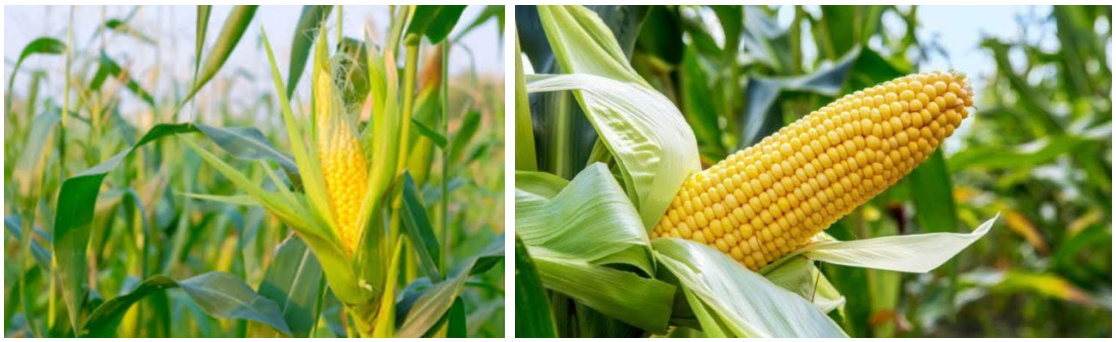
- Maize can be eaten either boiled or roasted or processed into corn flour, corn flakes or use of corn meal, beer, baking flour and livestock feed.

2. 1. 5 WEED, DISEASES AND PESTS OF MAIZE

- Weeding: First weeding is done about two or three weeks after planting and two more weeding at equal intervals of fifteen days thereafter and it is done through the use of hoe. Also chemical weeding can be done by applying Atrazine, a selective herbicide for maize at 1g per $5m^2$ or 2kg per ha immediately after sowing or ten days after sowing.
- Diseases: Maize diseases are Maize rust – commonest disease caused by a fugus which can be avoided by planting resistant maize varieties, Corn smut – a fugus disease which attack leaves, stems, tassels and cobs forming tumors of black spores which can be controlled by uprooting the infected plant and burnt, Streak – disease caused by a virus which is carried by insects

called leafhoppers, cause yellowish streaking of the leaves and the plant become stunted or deformed. The infected plant need to be uproot and burnt.

- Pest: Most important pest of maize are army worms – pest that eat the young plants and capable of destroying it if not controlled. It is spray with Vetox 85. Stem borer – insects which bore into stems or eat the growing points of maize. They attacked late crop particularly. It is controlled by sraying with Attacke 2.5C. Weevil – pest of stored maize which can be controlled by fumigate the store with BHC powder or phostoxin tablets and also ensure early harvest.



(Sample of the farm maize)

2.2 FARMING UNIT (BEANS)

Beans are a type of legumes that are widely cultivated and consumed around the world. They are a nutrient-rich food that provides a good source of protein, fiber and various essential vitamins and minerals.

2.2.1 VARIETIES OF BEANS

1. Kidney beans: One of the most common types of beans, kidney beans are grown for their distinctive shape and flavor.

2. Black beans: Black beans are popular in Latin American cuisine and are often used in dishes like rice and beans.

3. Pinto beans: Pinto beans are a type of mottled bean that is commonly used in refried beans and other dishes.

4. Navy beans: Navy beans are small, white beans that are often used in baked beans and other recipes.

5. Soybeans: Soybeans are a type of bean that is often used to produce soy milk, tofu, and other products.

2.2.2 CLIMATE AND SOIL REQUIREMENTS

1. Temperature: Beans require a warm temperature between 60°F and 85°F (15°C and 30°C) to grow.

2. Soil: Beans prefer well-draining, fertile soil with a pH between 6.0 and 7.0.

3. Moisture: Beans require adequate moisture, especially during flowering and pod formation.

2.2.3 FARMING PRACTICES

1. Seed selection: Choose high-quality seeds that are suitable for your climate and soil type.

2. Planting: Plant beans in well-prepared soil, typically in late spring or early summer.

3. Irrigation: Provide adequate moisture through irrigation or rainfall.

4. Fertilization: Apply fertilizer as needed, taking care not to over-fertilize.

5. Pest and disease management: Monitor for pests and diseases, using integrated pest management (IPM) practices to minimize harm.

2.2.4 HARVESTING AND STORAGE

1. Maturation: Beans are typically ready to harvest 50 to 60 days after planting.

2. Harvesting: Harvest beans when the pods are dry and the beans are hard.

3. Storage: Store beans in a cool, dry place to preserve quality.

2.2.5 BENEFITS OF BEAN FARMING

1. High protein content: Beans are an excellent source of protein, making them a valuable crop for human consumption and animal feed.

2. Nitrogen fixation: Beans, like other legumes, have the ability to fix nitrogen in the soil, reducing the need for synthetic fertilizers.

3. Drought tolerance: Many types of beans are drought-tolerant, making them a good choice for areas with limited water resources.

4. Economic benefits: Bean farming can provide economic benefits to farmers and local communities.

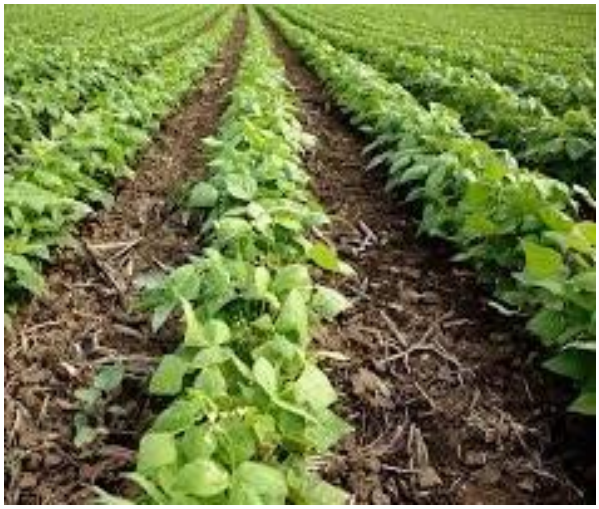
2.2.6 CHALLENGES OF BEAN FARMING

1. Weather conditions: Beans are sensitive to weather conditions, such as extreme temperatures, drought, and flooding.

2. Pests and diseases: Beans are susceptible to pests and diseases, such as bean rust and aphids.

3. Soil quality: Beans require well-draining, fertile soil to grow well.

4. Labor requirements: Bean farming can be labor-intensive, particularly during planting and harvesting.



(Sample of the farm Beans)

CHAPTER FIVE

OBSERVATIONS, CONCLUSION AND RECOMMENDATION

5.1 OBSERVATION

The SIWES programme undergone at FEMSTRIDE NIGERIA ENTERPRISES afforded me an in-depth exposure to some of the practical industrial aspects of Agricultural branches. I was opportune to have known the feed formulation. Experience was also garnered in the handling of layer birds especially when they started laying eggs.

Besides, knowledge and skills were acquired in both section of the farm (piggery and poultry section). The programme has been highly enlightening, beneficial, interesting and successful. The objective of which the scheme was undergone was however achieved.

5.2 CONCLUSION

The SIWES programme for me is educative and has empowered me with various opportunities to be self-employed and in fact to be able to establish a farm based on many of all that have been practicalized. With the help of Allah the programme has enable a kind of workable opportunity to perform theories in a practical way, to see many of the equipment/tools used in the farm (birds, battery cage, deep litters etc.)

5.3 RECOMMENDATION

Although SIWES undergone did achieve quite a lot of its stated objectives, nevertheless, the following recommendations are suggested to improve the qualitative context of the programme:

i. SIWES Students should endeavour to participate actively and positively during the SIWES programme (i.e try to be hardworking) and see the industry where the programme is taking place as a research place where all that he/she has been taught in the class can be practicalized.

ii. The Industry should not see SIWES students as casual workers but as professionals in the making.

iii. Participation of private corporate organization to minimize the problem of low funding as recently complained by the director of ITF.

iv. Sending students specifically to establishment where the stipulated aims and objectives of SIWES would be achieved.

v. Payment of befitting student allowance to assist in student's finances during the period of training.