



**A TECHNICAL REPORT ON STUDENT INDUSTRIAL WORK
EXPERIENCE SCHEME**

(SIWES)

HELD AT

MA SHA ALLAH AGRO RESOURCE

Along Fate, Road, Kwara State

WRITTEN BY

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SUBMITTED TO

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DEDICATION

This Technical Report is dedicating to my dear parent Mr. and Mrs. Aina who has morally, spiritually and financially supports my programs from the beginning to where I am now may God Almighty grant them long life to reap what they sow.

ACKNOWLEDGEMENT

My sincere gratitude goes to Almighty God for his provision, protection and also for wisdom, knowledge and understanding he has given me. I am using this opportunity to appreciate the effort of my parent from the beginning of this program to the end. I pray may God in his mercy crown their efforts. Furthermore, my special greetings go to my brothers, sisters and friend for their support during the programme. My gratitude also goes to all staff at Masha Allah Agro Resources Along Fate, Road, Ilorin. Mostly to the CEO Engr. Thaddeus Rotimi, may God be with them all.

PREFACE

The student industrial work experience scheme (SIWES) help in exposing student to the practical application of course and to get use to their tools and machines used in the factory. The SIWES was established to promote student skill in industrial practice and pre-expose them to working experience in industrial setting.

The SIWES program covered a period of four months from August to November 2024 and it is a practical fulfillment of a two-year academic program to obtain ND certificate in engineering. The report explains the description of work done.

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CHAPTER ONE

1.0 INTRODUCTION TO SIWES

In 1974, the federal government of Nigeria introduced the National policy on Industrial Training called the Student Industrial Work Experience Scheme (SIWES).

This program is under the umbrella of the ministry of education through the Industrial Training Fund (ITF), was design to help student acquire the necessary practical education experience in their fields of study and other related professions.

The program was established basically to impact elaborate practical understanding to student with respect to their various disciplines. It is also intended that the student through a process of relation to academic knowledge and practical industrial application would understand the underlying principle and become better focused and acquire the practical application toward excellence in his/her discipline.

The students are expected to develop occupational competence that would facilitate their fitting into the world of work after graduation.

1.1 AIM AND OBJECTIVE OF SIWES

The student industrial work experience scheme (SIWES) has it major aims and objective of establishment. The following are the aim and objective of the program.

- i. To provide student an opportunity to apply their theoretical knowledge in really work situation, thereby bridging the gap between theory and practical.
- ii. To expose student to working method and techniques in handing equipment and machineries that is not available in their various institutions.
- iii. To make the transition from the institution to the world of work easier and thus enhance student contact for later job placement.
- iv. To prepare student in skill development by participating in field works, particularly in writing report in their fields of works.

1.2 NAME OF THE COMPANY

MASHA ALLAH AGRO RESOURCE

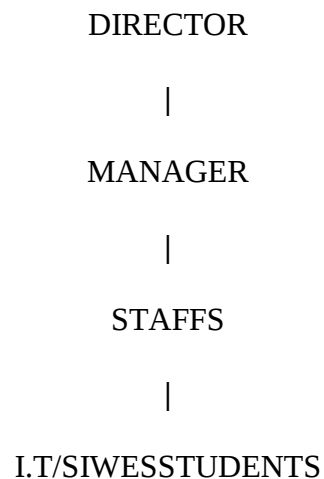
1.5 LOCATION OF THE COMPANY

MASHA ALLAH AGRO RESOURCE is located at Along Fate, Road, Kwara State, Ilorin.

1.6 BRIEF SUMMARY OF COMPANIES ACTIVITIES

MASHA ALLAH AGRO RESOURCE IS an enterprises established for the rearing of farm animal. It comprises of two arms which are Poultry production and Piggery production. In poultry production raising of layers for egg production and sales. In piggery production swine of different breeds are reared for consumption.

1.5 ORGANIZATION CHART



CHAPTER TWO

2.1 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.

2.1.1 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.

2.1.2 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.

2.1.3 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.

2.2.4 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.

2.2.5 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)

2.3 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.

2.4 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.

2.5 TYPES OF FERTILIZER

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

CHAPTER THREE

3.1 DETAILED REPORT OF ACTIVITIES CARRIED OUT ON THE FARM 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.

3.2 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 caryopsis, i.e it has its epicarp fused with the mesocarp.

3.2.1 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 in the following ways as conventional method, conventional tractors and conservation tillage.
- **Climate and soil requirement:** Maize requires a temperature of 30°C – 34°C, Temperature below 5°C – 45°C 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, flinty 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. Flinty maize: The flinty 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.

3.2.2 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.

3.2.3 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.

3. 2. 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.

3. 2. 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 5m² or 2kg per ha immediately after sowing or ten days after sowing.
- **Diseases:** Maize diseases are Maize rust – commonest disease caused by a fungus which can be avoided by planting resistant maize varieties, Corn smut – a fungus 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 spraying 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)

3.3 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.

3.3.1 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.

3.3.2 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.

3.3.3 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.

3.3.4 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.

3.3.5 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.

3.3.6 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. **Labour Requirements:** Bean farming can be labor-intensive, particularly during planting and harvesting.



(Sample of the farm Beans)

CHAPTER FOUR

4.1 POTATOES

4.1.1 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.

4.1.2 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.

4.1.3 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.

4.1.4 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.

4.1.5 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.

4.1.6 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)

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.