TECHNICAL REPORT ON STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)

UNDERTAKEN AT

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT ILORIN

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SUBMITTED TO:

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ACKNOWLEDGEMENT

I wish to register my profound gratitude to Allah Almighty for the guidance and grace throughout my life.

My appreciation goes to the entire staff of MINISTRY AGRICULTURE AND RURAL DEVELOPMENT ILORIN for making industrial training interesting educative and worthwhile. My appreciation also goes to my industrial based supervisors, whose accessibility. Unitary effort, patient and guidance and suggestion fabulously contribution to the completion of this report, may God continue to guide and protect them and their family.

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SIWES COORDINATOR DATE

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SIWES SUPERVISOR DATE

TABLE OF CONTENT

CHAPTER ONE

1.0 INTRODUCTION OF SIWES

SIWES simply refer to students industry work experience scheme, is a skill training programme deigned to expose and prepare students of universities, polytechnics, college of technology, colleges of agriculture and colleges of education for the industrial work experience they are likely to meet after graduation. The pogramme also affords student the opportunity of familiarizing and exposing themselves to the needed experience in handling equipment and machinery that are usually not available in their institutions.

Before the establishment of the scheme, there was a growing concern among industrialist that graduates of tertiary institution lacked adequate practical background preparatory for employment in industries. That is, the employers were of the opinion that the theoretical education going on in institutions for initiating and designing the scheme by the fund during it's formative years 19673 – 94 was introduced to acquaint student with skill of handling employers and machinery.

1.1 AIMS OF SIWES

- ✔ To expose students of higher place of learning to the practical aspects of what they are being taught in school and prepare them for future work related experiences.

1.2 OBJECTIVES OF SIWES

- ✔ To prepare for the industrial work experience they are to undergo after graduation
- ✔ To expose student to work method and techniques in handling equipment and machinery that may not available in their institution.
- ✔ To provide student opportunity to see the world of theirs.

CHAPTER TWO

2.0 BACKGROUND HISTORY OF THE ESTABLISHMENT

2.1 HISTORY OF MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT, ILORIN.

The Ministry of Agriculture and Rural Development in Ilorin, Kwara State, Nigeria, is located on Old Jebba Road, Sango, Ilorin [1].

As for its history, the Federal Ministry of Agriculture and Rural Development was established in 1967, and each state in Nigeria, including Kwara State, has its own ministry of agriculture and natural resources [2]. The Kwara State Ministry of Agriculture and Rural Development has undergone various transformations and reorganizations over the years to align with the changing needs of the state's agricultural sector.

The ministry's mandate includes ensuring food security, stimulating agricultural employment and services, promoting the production and supply of raw materials to agro-allied industries, and generating foreign exchange [2]. The ministry is also responsible for implementing various agricultural development projects and programs in Kwara State, including the Ilorin Agricultural Development Project

2.2.OBJECTIVES OF THE MINISTRY

- ✔ To boost Nigeria agricultural sector as a form diversification of the economy.
- ✔ To provide employment
- ✔ To provide student opportunity to see the world of theirs.
- ✔ To provide raw material for processing companies.
- ✔ To provide basic practical knowledge for people in the field of agriculture.

2.3. ORGANIZATIONS STRUCTURE (ORGANOGRAM)

The MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT, ILORIN. is headed by the director who gives order and instructions to the manager. The manager, manage the whole affairs of the farm and report therein back to the Director.

The manager makes sure that all activities is going on in the farm as expected.

2.4. VARIOUS UNITS/ACTIVITIES IN THE MINISTRY

PEST CONTROL UNIT

This unit is responsible for managing pests that affect crops and livestock using various control methods. The team identifies pest threats and applies appropriate strategies to mitigate their impact on agricultural production..

- ✔ Chemical, physical, and mechanical methods are used.
- ✔ Regular monitoring and assessment of pest populations.
- ✔ Educating farmers on best pest management practices.

CHEMICAL CONTROL UNIT

This unit oversees the safe and effective use of chemicals like pesticides and herbicides to manage weeds, pests, and diseases.

- ✔ Application of herbicides to control weeds.
- ✔ Use of pesticides to manage pest outbreaks.
- ✔ Ensuring safety guidelines and proper chemical handling.

TRAINING & EXTENSION UNIT

Focused on educating farmers and agricultural workers, this unit spreads knowledge on modern farming techniques, pest control, and best agricultural practices.

- ✔ Organizing workshops and training sessions.
- ✔ Providing field demonstrations and practical knowledge.
- ✔ Bridging the gap between research and farmers' needs.

HEALTH & SAFETY UNIT

This unit ensures safety protocols are followed, especially when handling chemicals or working in hazardous environments.

- ✔ Administering first aid in case of pesticide exposure.
- ✔ Monitoring workers for signs of chemical poisoning.
- ✔ Safe disposal of contaminated equipment and materials.

RESEARCH & DEVELOPMENT UNIT

This unit focuses on improving agricultural practices through research, experimentation, and innovation.

- ✔ Studying the effects of pesticides and their alternatives.
- ✔ Developing sustainable pest management techniques.
- ✔ Conducting trials to optimize control methods.

CHAPTER THREE

3.1 TECHNICAL TRAINING EXPERIENCE

During my SIWES placement at the Ministry of Agriculture and Rural Development, Ilorin, I gained hands-on experience in various units dedicated to enhancing agricultural productivity and promoting sustainable rural development. The training provided practical exposure to modern farming techniques, pest and disease management, and post-harvest handling, all aimed at supporting local farmers and strengthening food security.

The ministry is divided into key operational units:

- ✔ Pest Control and Safety Unit
- ✔ Crop Production and Processing Unit
- ✔ Extension and Community Outreach Unit
- ✔ Home Economics and Food Preservation Unit

Each unit plays a critical role in agricultural development, and trainees were immersed in learning practical skills to support farmers and improve crop yields.

3.2 PEST CONTROL AND SAFETY UNIT

This unit focuses on identifying and managing pests that affect crop production. We were taught various pest control methods and how to apply them safely and effectively in real farm settings.

Key areas covered include:

Pest Identification: Learning to recognize common agricultural pests and the damage they cause to crops.

Chemical Control: Proper handling and application of pesticides, herbicides, and insecticides. Emphasis was placed on safety measures to protect both crops and human health.

Biological Control: Using natural predators or parasites to manage pest populations.

Physical and Mechanical Control: Techniques like handpicking, trapping, and using tools or machinery to remove pests and infected plants.

Integrated Pest Management (IPM): Combining multiple pest control methods to create a sustainable, long-term strategy for crop protection.

Pesticide Bottle Stock

3.3 CROP PRODUCTION AND PROCESSING UNIT

In this unit, we were trained on modern agricultural practices to optimize crop growth and improve post-harvest processing.

Key topics covered:

Soil Preparation and Fertilization: Learning how to prepare land for planting and apply fertilizers to enhance soil fertility.

Planting Techniques: Using improved seed varieties and learning spacing, planting depth, and irrigation methods for better crop yields.

Harvesting and Post-Harvest Handling: Proper techniques for harvesting crops and handling produce to reduce post-harvest losses.

Food Processing and Value Addition: Transforming raw agricultural products into finished goods, such as processing cassava into garri or yam into flour, to increase market value and extend shelf life.

3.4 EXTENSION AND COMMUNITY OUTREACH UNIT

This unit is responsible for educating local farmers on sustainable agricultural practices and helping them implement modern farming techniques.

Key training experiences:

Farmer Education and Workshops: Participating in community training sessions to teach farmers about pest control, soil health, and crop management.

Field Demonstrations: Assisting in setting up demonstration farms to show farmers the practical application of new techniques.

Data Collection and Farm Surveys: Collecting field data to analyze crop performance, pest outbreaks, and soil conditions, which helps in advising farmers more accurately.

3.5 HOME ECONOMICS AND FOOD PRESERVATION UNIT

This unit focuses on food processing, preservation techniques, and promoting nutritional awareness in rural communities.

Key skills learned:

Food Preservation Techniques: Methods like drying, smoking, and fermenting to extend the shelf life of agricultural products.

Nutrition and Food Safety: Understanding the nutritional value of various crops and how to maintain food safety during processing.

Local Food Production: Hands-on training in making staple foods like cassava fufu, garri, and local snacks to support household food security and create small business opportunities.

3.6 IMPACT OF TRAINING

The training at the Ministry of Agriculture and Rural Development, Ilorin, provided invaluable practical experience in agriculture and rural development. The knowledge gained in pest management, crop production, and community outreach has equipped me with essential skills to contribute to sustainable agriculture and support local farmers.

This experience highlighted the importance of hands-on learning and how government initiatives can empower rural communities through education and resource support.

CHAPTER FOUR

4.1. UNITS AND THEIR FUNCTIONS IN AGRICULTURAL DEVELOPMENT

Effective agricultural systems rely on specialized units that contribute to food security, pest management, and sustainable production. Each unit plays a critical role in supporting agricultural growth, reducing losses, and promoting community well-being. Below are the core units and their functions:

i. Home Economics and Food Processing Unit

- ✔ Teaches food preservation and processing techniques to reduce post-harvest losses.
- ✔ Empowers communities with skills to make local foods (e.g., fufu, garri) for improved food security and income generation.

ii. Crop Production and Autoculture Unit

- ✔ Focuses on modern techniques for growing crops like vegetables, cereals, and legumes.
- ✔ Trains farmers on soil management, crop rotation, and sustainable production practices to maximize yields.

iii. Agricultural Extension and Advisory Unit

- ✔ Connects farmers with research-based practices for improved productivity.
- ✔ Provides training on best practices in soil conservation, pest control, and resource management.
- ✔ Encourages the adoption of sustainable agricultural technologies.

iv. Pest and Disease Control Unit

- ✔ Educates farmers on various pest and disease control methods (chemical, biological, mechanical, and physical).

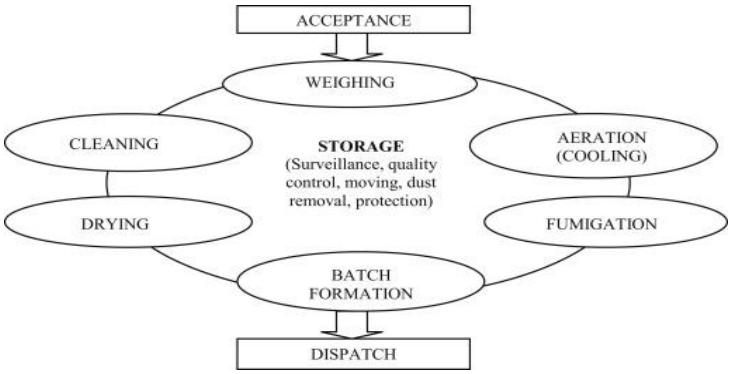
✔ Teaches safe pesticide handling, application techniques, and alternative control measures to prevent environmental harm.

v. Production and Post-Harvest Management Unit

✔ Manages the transformation of raw agricultural products into finished goods.

✔ Helps minimize post-harvest losses through proper storage, processing, and packaging methods.

✔ Promotes value addition and agribusiness development.



vi. Research and Innovation Unit

✔ Conducts field experiments and trials to test new farming methods and technologies.

✔ Gathers data to improve pest control strategies, crop varieties, and input efficiency.

✔ Provides valuable insights for continuous agricultural improvement.

4.2. **AGRO–PROCESSING, TEXTILE CRAFT &HORTICULTURE UNIT**

SOYA MILK PRODUCTION

SOYBEAN is a highly nutritious legume rich in protein, used to produce plant-based alternatives like soya milk and cheese. Let's explore the processes:

i. SOYA MILK PRODUCTION

✔ Cleaning and Soaking:

✔ Clean the soybeans to remove dirt and impurities.

✔ Soak in water for 6–12 hours to soften the beans.

ii. Grinding:

✔ Grind the soaked beans with water to form a smooth paste.

✔ The typical ratio is 1 cup of soybeans to 3 cups of water.

iii. Boiling:

✔ Boil the mixture for 15–20 minutes to neutralize anti-nutrients.

iv. Straining:

✔ Use a cheesecloth or fine sieve to strain the mixture, separating the liquid (soya milk) from the pulp (okara).

v. Flavoring & Packaging:

✔ Add sugar, vanilla, or other flavors if desired.

✔ Package and refrigerate for consumption.

<u>SOYA CHEESE (TOFU) PRODUCTION</u>

i. COAGULATION:

✔ Heat the fresh soya milk.

✔ Add a coagulant like magnesium chloride or lemon juice.

ii. Curdling & Pressing:

✔ Let the milk curdle, forming solid curds and whey.

✔ Drain the whey and press the curds into molds to form blocks of tofu.

iii Cooling & Storage:

✔ Cool the tofu in cold water.

✔ Store in water or airtight containers in the fridge.

CLASSIC TIE AND DYE

Tie and dye is an ancient textile art where fabric is tied and dyed in vibrant colors, creating unique patterns.

Materials Needed:

✔ White fabric (cotton works best)

✔ Fabric dyes

✔ Rubber bands or strings

✔ Gloves and plastic containers

PROCESS:

i. **Fabric Preparation:**

✔ Wash and dry the fabric to remove dirt and sizing agents.

ii. **Tying the Fabric:**

✔ Twist, fold, or pleat the fabric.

✔ Secure sections with rubber bands to create patterns (e.g., spiral, crumple, or stripes).

iii. **Dyeing:**

✔ Prepare the dye according to instructions.

✔ Soak the fabric in dye, ensuring full saturation.

iv. **Setting the Dye:**

✔ Let the fabric sit for 6–24 hours to absorb the color.

✔ Rinse thoroughly until the water runs clear.

v. **Drying:**

✔ Air dry the fabric.

✔ Iron to set the dye permanently.

✔ Let the fabric sit for 6–24 hours to absorb the color.

✔ Rinse thoroughly until the water runs clear.

HORTICULTURE AND ITS ASPECTS

Horticulture is the science and art of growing fruits, vegetables, flowers, and ornamental plants. It plays a vital role in food production, environmental conservation, and beautification.

Key Aspects of Horticulture:

i. **Pomology (Fruit Science):**

Cultivation of fruit crops like mangoes, bananas, and citrus.

ii. **Olericulture (Vegetable Science):**

Growing vegetables like tomatoes, lettuce, and spinach.

iii. **Floriculture (Flower Science):**

Production of flowers and ornamental plants for decorative purposes.

iv. **Landscape Horticulture:**

Designing and maintaining gardens, parks, and public green spaces.

v. **Plant Propagation:**

Multiplying plants through seeds, cuttings, grafting, or tissue culture.

vi. **Post-Harvest Technology:**

Handling, storing, and processing harvested crops to extend shelf life and maintain quality.

vii. **Medicinal and Aromatic Plants:**

Cultivating plants for pharmaceutical and cosmetic uses (e.g., aloe vera, lavender).

IMPORTANCE OF HORTICULTURE:

- ✔ Food Security: Provides nutrient-rich fruits and vegetables.
- ✔ Economic Growth: Generates income through local and international markets.
- ✔ Environmental Benefits: Enhances biodiversity, reduces carbon dioxide, and prevents erosion.
- ✔ Aesthetic Value: Beautifies spaces, promoting mental well-being and tourism.

CHAPTER FIVE

RECOMMENDATION AND CONCLUSION

RECOMMENDATION

SIWES Programe is an interested practical and working experience which facilitate familiarity with working act, tools and machinery handling for student such graduate and under graduate with these view. It is highly recommend that federal governments should fund the programme for more better efficiency.

CONCLUSION

In conclusion SIWES programme it's what of continuity with strong monitoring by the (ITF) officers and various higher places of learning to make sure that their students are fully participate in the programme for better working experience for great better nation ahead.